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RESEARCH ARTICLE

Collaboration Network Analysis of Papers Published in English Language Accounting and Finance Journals in Iran

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Abstract

Between 2016 and 2017, the Ministry of Science, Research, and Technology's Scholarly Journals Commission authorized the publication of four English-language journals in accounting and finance. By the end of 2022, these journals collectively produced 853 papers. This study explores and analyses the network of scholarly collaboration among authors contributing to papers published in English-language accounting and finance journals endorsed by the Ministry of Science from their inaugural issues to the latest one in 2022. This investigation delves into research output volume authorship patterns and identifies prolific contributors, shedding light on the collaborative networks within accounting and finance studies in Iran. Employing scientometric indexes and social network analytics, this research takes a pragmatic approach and utilizes network analysis software such as UCInet and VOSviewer for visualization and analysis. The findings of this study disclose that 2,438 authors contributed to a total of 853 papers. Among these authors, only 53 papers (6%) were authored by international professors. Examining authorship patterns reveals that a mere 8% of the papers (72 items) were individually authored, while the remainder involved collaboration: 25% (213 papers) were co-authored by pairs, 42% (354 papers) were the result of collaborative efforts among three scholars, and the remaining 25% were produced by groups involving more than three scholars. The most prolific monograph authors, credited with three monographs each, are Mohammad Izadikhah and Reza Jamei. The most productive authors are Fraydoon Rahnamay Roodposhti, Hashem Nikoomaram, and Mirfeiz Fallah Shams, with 28, 24, and 19 papers, respectively. Notably, these authors have published over 80% of their works in the journal they manage, specifically the *International Journal of Finance and Managerial Accounting*. The analysis of the scholarly collaboration network reveals a collaboration encompassing 1,406 scholars, of which 1,002 (71%) have contributed to only one paper. The network, with a compression index 0.018, demonstrates low coherence and includes numerous isolated nodes. However, the *International Journal of Finance and Managerial Accounting* stands out with a compression index of 0.051, indicating the highest level of coherence among journals. Regarding co-authorship, the most central scholars in the network are Fraydoon Rahmany Roodposhti, Hashem Nikoomaram, and Hamidreza Vakilifard. Notably, Fraydoon Rahmany Roodposhti and Hashem Nikoomaram have the highest number of collaborations in the network, with ten joint efforts. Visualizing the scholarly collaboration network yields valuable insights for policymakers within English-language accounting and finance journals. It aids in strategic planning by offering a comprehensive view of collaborations, contributing to a deeper understanding of this overlooked aspect of research partnerships.

Keywords:

Co-authorship, Iranian English Journals, Journals of Accounting and Finance, Scholarly Collaborations, Scientometrics, Social Network Analytics (SNA)

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1. Introduction

Scientific journals play a pivotal role in disseminating study findings, serving as cornerstones for scholarly communities. A symbiotic relationship exists between scientific knowledge production and scientific journals' expansive nature, offering researchers a foundation to stay abreast of studies and the latest advancements in their fields. This collaboration prevents redundant efforts, conserves resources, and accelerates the pace of scientific progress (Behroozfar and Davarpanah, 2009). Evaluating and measuring scholarly works are crucial drivers of scientific advancement. Scientometrics, a means of measuring and assessing scholarly works, informs science policies. The initial steps in quality research involve problem identification, selecting appropriate methodologies, and effectively reporting findings (e.g., Hesarzadeh, 2018, 2020; Mastechaman et al., 2021). However, the subsequent phase, publication, and visibility of papers are equally vital.

Publishing in international forums broadens the research audience, aligning with Iran's emphasis, as seen in its sixth development plan and the Ministry of Science, Research, and Technology's support for English-language academic publications. By 2022, the country has published 282 English-language journals, including those in accounting and finance—a field known for its impact on development and economy (Aghdam et al., 2019). Notably, four English-language journals were authorized by the Ministry in 2016 and 2017, attracting contributions from Iranian researchers in accounting and finance.

Advancing research in this field requires diverse resources and expertise. Collaboration emerges as a strategic approach, enhancing research effectiveness (Collins, Oler, and Skousen, 2018). In recent years, scholarly collaborations have gained prominence, necessitating intellectual and social interactions among collaborators. These interactions are visualized through co-authorship networks, a focus of social network analytics (Erfanmanesh and Arshadi, 2015). Co-authorship signifies the formal collaboration among authors, leading to higher-quality outputs compared to individual efforts (Hudson, 1996).

Scholarly collaboration network analyses have been conducted across various fields, including accounting and finance (Andrikopoulos and Kostaris, 2017; Kılıç et al., 2019). However, none have specifically explored Iran's domestic accounting and finance journals. This study pioneers the analysis of collaboration networks in English-language journals within this field. Unlike previous studies focusing on different aspects, this research aims to uncover previously unexplored evidence. While studies proposing scholarly collaboration relations have been conducted (e.g., Taghizadeh et al., 2021; Faraji et al., 2022), this study differs in methodology and focus. The present study, focusing on English-language journals, holds strategic importance in promoting internationalization, aligning with Iran's development plan objectives (Law on the Fifth Five-Year Development Plan, 2010; Regulations of Scientific Publications, 2019; Supreme Council of the Cultural Revolution, 2010).

This quantitative approach uses VOS Viewer software to assess accounting and finance literature in Iranian English-language journals, unveiling patterns and insights (Singh, 2021). The innovative aspect lies in utilizing software like VOS Viewer and NetDraw extension in Ucinet. Analyses at both overall and individual journal levels offer comprehensive insights.

Given the recent growth of English-language journals in accounting and finance and the importance of scholarly collaboration networks, especially international collaborations, this study aims to analyze such networks within English-language accounting journals. This analysis spans the publication process from 2016 to 2022, evaluating cross-border collaborations, authorship patterns, and collaboration methods, identifying leading researchers, and analyzing scholarly collaboration networks using macro- and micro-indicators in the published papers.

2. Theoretical Framework

2.1 Importance of publishing international journals in Iran

In line with Section 3 of Article 1 within the Code of Scientific Journal Practices (2019), a key aim of the Scholarly Journals Commission under the Ministry of Science, Research, and Technology is to facilitate the integration of domestic scientific journals into international indexes. Table 13 of the Sixth Development Plan establishes targets for the number of indexed Iranian journals in global science databases. Commencing with the inception of the development program in 2017, the plan aimed for 45 indexed journals, with an annual programmed increase of five, ultimately reaching 70 international journals by 2021. Aligned with overarching documents such as Article 20 of the Law on the Fifth Plan (2010), Table 13 of Article 66 of the Law on the Sixth Economic, Social, and Cultural Development Plan of the Islamic Republic of Iran (2017), Section 4 of the National Actions of Macro Strategy 4, and Section 25 of the National Actions of Macro Strategy 9 within the Comprehensive Scientific Map of the Country (2010), a primary strategic goal involves bolstering scientific journals and domestic scientific products. This endeavor seeks to augment research and study contributions to the country's gross domestic product while enhancing the quality and global visibility. Hence, the highest priority among the Office of Policy Making and Planning Research Affairs initiatives under the Ministry of Science, Research, and Technology revolves around indexing scientific journals in reputable international science databases (Nejadebrahimi et al., 2023).

To actualize this objective, the Ministry of Science, Research, and Technology has actively advocated for the internationalization of journals. This support includes providing guidelines, establishing planning workgroups, incentivizing directives, and organizing seven professional workshops in 2021 and 2022. One of these workshops, the webinar titled "Indexing Scientific Journals: Familiarization with International Standards for Journal Inclusion in Credible Indexes," was specifically tailored for editors and directors of scientific journals held on Wednesday, June 8, 2022. Through these collective endeavors, the Ministry identified 97 journals in 2021 that met the stipulated conditions for indexing (Portal of Scientific Journals Evaluation, 2023). However, it's notable that despite accounting for 2% of the country's scientific journals (31 out of 1441), the fields of accounting and finance have not significantly contributed to journal internationalization, impeding the fulfillment of objectives outlined in the Sixth Development Plan.

In 2021, the Journal Evaluation Commission of the Ministry of Science, Research, and Technology assessed and categorized the scholarly ranks of 1,441 journals internationally, ranging from A to D. Among these journals, 282 (20%) are published in languages other than Persian, and their data is detailed in Table 1.

2.2 Scholarly collaboration network

Scholarly collaboration stands as a multifaceted practice that amalgamates diverse skills and cultivates the generation of novel scientific knowledge. As the knowledge landscape grows increasingly intricate, the demand for specialized and interdisciplinary expertise in research papers has amplified, underscoring the significance of collaborative approaches (De Stefano et al., 2011). Within the realm of accounting, research endeavors necessitate a breadth of resources and specialized skills that often exceed an individual researcher's capacity, considering limitations in both resources and time (Collins, Oler, and Skousen, 2018). Hence, collaborative efforts with other researchers emerge as the most effective strategy in this domain. An illuminating lens into the landscape of authorship and the number of authors in accounting papers within major international journals reveals a diminishing prevalence of single-authored papers. This decline is coupled with a proportional rise in papers authored by multiple individuals (e.g., Urbancic, 1992; Ettredge & Wong-On-Wing, 1991;

Mohammad Rezaei et al., 2016, as cited by Faraji et al., 2022). This trend mirrors the shift observed in domestic accounting research, where group research has gained traction. Pursuing collaborative research and disseminating collective findings necessitate mental and social interactions among collaborators, visualized through co-authorship networks. In scientometrics, co-authorship and co-writing networks have garnered substantial attention for their ability to quantify scholarly collaborations (Chong, Ooi, and Sohal, 2009). Moreover, collaborative research brings forth numerous advantages, as Hart (2000) emphasized, encompassing enhancements in paper quality, the utilization of co-authors' expertise and skills, the inception of innovative ideas, amplified scientific publications, and mutual learning. Li et al. (2013) accentuate that collaborative research allows researchers to complement each other's knowledge, expertise, and experiences, enabling effective performance and the publication of successful papers.

Table 1. Statistics of Persian and Non-Persian journals authorized by the Ministry of Science, Research, and Technology across all disciplines and knowledge fields, specifically accounting and finance

Language Journals	Field Journals	Number of Journals in Iran country	International ranking	Rank A	Rank B	Ranked lower than B
Persian Journals	At the level of all journals	1159	13 (1%)	196 (17%)	863 (74%)	87 (8%)
	In the level of accounting and finance disciplines	27	-	11 (41%)	15 (55%)	1 (4%)
Non-Persian Journals	At the level of all journals	282	97 (34%)	41 (15%)	126 (45%)	18 (6%)
	In the level of accounting and finance disciplines	4	-	1 (25%)	3 (75%)	-
Total (Persian and non-Persian Journals)	At the level of all journals	1441	110 (8%)	237 (16%)	989 (69%)	105 (7%)
	In the level of accounting and finance disciplines	31	-	12 (39%)	18 (58%)	1 (3%)

Source: researcher's findings based on the data inserted in the portal of scientific journals (2023)

Collins, Oler, and Skousen (2018) delineate fundamental roles crucial in scholarly collaboration, underscoring their significance within collaborative endeavors. These roles highlight the importance of collaborative dynamics, encompassing leadership (even in two-author papers), responsibility for writing and editing, data management, overseeing the paper's draft, responding to editors and reviewers, presenting findings in conferences or workshops, and facilitating the use of subject-method experts, especially in rapidly evolving technological landscapes or complex research designs.

Co-authorship networks are intricate webs comprising nodes representing authors, universities, and regions, interconnected through collaborative authorships. These networks link authors collaborating on at least one research paper, forming the network's foundation. The application of social network analysis indicators to explore scholarly collaboration networks through co-authorship was pioneered by Newman (2001) across domains like computer science, physics, and biomedicine. Subsequently, this methodology found application in diverse fields, including tourism, medicine, public health, energy, sociology, information science, and scientometrics (Erfanmanesh and Arshadi, 2016).

The analysis of co-authorship social networks employs macro-level and micro-level indicators to dissect their development and structure. Macro-indicators delve into the network's overall configuration and characteristics, encompassing metrics such as density, fragmentation, clustering

coefficient, centralization, components, connectedness, diameter, and the average of the shortest distances (Sadatmoosavi et al., 2018). Density, a pivotal factor in macro-indicators, quantifies the extent of connections within a network. Higher density implies increased interactions among network elements, while lower density suggests fewer connections, indicating weaker interrelations (Soheili and Osareh, 2013).

Expressed as a fraction ranging from zero to one, network density represents the ratio of actual connections to potential connections. Closer to one signifies higher density, indicating robust interconnections among nodes, fostering cohesion and collaboration (Han and Park, 2006). Centrality indices within social networks serve as vital metrics, elucidating an individual's significance, influence, and connectivity within the network. Individuals with higher centrality possess stronger ties and are pivotal players influencing the network's dynamics and scientific impact (Liu et al., 2005).

Table 2. Summary of Findings from Ghane and Rahimi (2011)

Investigated journal	Number of investigated papers	Number of researchers	Average of authorship	Degree of collaboration	Percentage of authorship pattern				International collaboration
					1	2	3	4 and more	
International Journal of Engineering	124	323	2.6	91%	19%	42%	35%	13%	19 papers (15%)
Asian Journal of Civil Engineering	93	232	2.5	92%	7%	46%	36%	11%	62 items (67%)
Iranian Journal of Biotechnology	59	245	4.15	95%	5%	9%	27%	59%	6 items (10%)
Iranian Journal of Materials Science & Engineering	42	116	2.8	95%	5%	33%	48%	14%	5 items (12%)
Iranian Journal of Electrical & Electronic Engineering (IEEE)	28	74	2.6	96%	3%	43%	43%	11%	2 items (7%)
International Journal of Iron & Steel Society of Iran	21	62	3	95%	5%	33%	43%	19%	1 item (5%)
total	367	1052	2.9	93%	7%	36%	37%	20%	95 papers (26%)

2.3 Literature review

Numerous studies have delved into collaboration networks, underscoring their significance. These investigations encompass works by Ghane and Rahimi (2011), Thavamani (2014), Erfanmanesh and Hosseini (2015), Erfanmanesh and Morovati (2016), Hajipour et al. (2019), Khalili and Mohammadi (2021), and Marefat and Marefat (2022). For instance, Ghane and Rahimi (2011) scrutinized collaboration patterns among authors in six Iranian English-language journals within the technical and engineering domain using the Islamic World Science Citation Database (ISC). A comprehensive

outline of their discoveries is detailed in Table 2:

Thavamani (2014) delved into the research contributions within the Malaysian Journal of Library and Information Science from 1996 to 2012, revealing that dual-authorship patterns dominated, accounting for 39% of 279 published papers. Single-authorship followed at 36%, while two-, three-, four-, and five-author patterns comprised 17%, 5%, 3%, and 3%, respectively. The collaboration level stood at 0.645, involving 560 authors across an average of 2 contributors per paper.

Erfanmanesh and Hosseini (2015) examined the performance of the International Journal of Information Science and Management from 2003 to 2012, uncovering an average of 2 authors per paper among 173 publications. Single-authorship constituted 31%, followed by two-author (46%), three-author (14%), four-author (8%), and a solitary five-author paper (1%). The network comprised 265 unique authors and 463 co-authorship ties, with a network density of 0.006. Collaboration indices were 2, the Degree of Collaboration at 0.69, and the Collaboration Coefficient at 0.4. Professor Mehrad emerged as a top contributor across multiple metrics.

Erfanmanesh and Morovati (2016) scrutinized the Quarterly Journal of Interdisciplinary Studies in Human Studies, involving 185 papers and 272 contributors. Single-authored papers accounted for 49%, followed by two-author (32%), three-author (11%), four-author (7%), and five-author (1%) compositions. International collaboration was scarce, appearing in only one paper. Pourezzat and Mousapour were the most prolific, each contributing to 5 papers. Mousapour, also the journal's editor, held significant centrality scores in the network.

Hajipour et al. (2019) analyzed 332 papers from 2012 to 2016, involving 686 researchers across various authorship patterns. Threesome authorship dominated at 40%, followed by twosome (35%), foursome (17%), and single-authorship (8%). Hamidizadeh led with 15 papers and held substantial centrality scores in the network.

Khalili and Mohammadi (2021) conducted a scientometric analysis of two Iranian journals: the International Journal of Information Science and Management and the Journal of Webology. These journals published 242 and 187 papers, respectively. Collaboration percentages with foreign journals were 24% and 76%. The most productive authors contributed 11 and 21 papers, respectively, with network ties and densities calculated for each.

Marefat and Marefat (2022) investigated collaboration rates in the Journal of Advanced Periodontology & Implant Dentistry from 2009 to 2020, involving 1076 authors and 376 papers. Authorship patterns varied from single to multiple authors, with 27% single-author, 22% two-author, 19% three-author, and 16% four-author papers.

In accounting research, scholars such as Fleischman and Schuele (2009), Andrikopoulos and Kostaris (2017), Collins, Oler, and Skousen (2018), and Kılıç et al. (2019) have explored collaborative scholarly cooperation, emphasizing benefits such as skill integration, intellectual stimulation, and enhanced research quality.

Andrikopoulos and Kostaris (2017) explored scholarly collaboration networks within accounting, examining 4738 papers published from 1985 to 2014 across five reputable accounting journals:

1. The Accounting Review
2. Accounting, Organizations and Society
3. Journal of Accounting and Economics
4. Journal of Accounting Research
5. Contemporary Accounting Research

Their findings unveiled a small-world collaboration network with 3,609 unique authors represented as nodes. The distribution revealed 30% of single-authored papers, 36% with two authors, and 34% with three authors. David Larcker emerged as the most prolific author with 43 papers, while Dan Dhaliwal held the highest degree of centrality at 41. The average degree centrality was calculated

at 3.195. A significant 69% of the total network size comprised the giant component, and its average distance measured at 6.274.

Collins, Oler, and Skousen (2018) observed a significant shift in authorship patterns in leading accounting journals. In 1960, around 90% of The Accounting Review papers were single-authored. However, by 2015, this dropped to 20%, with 29% two-author papers and 51% featuring more than two authors, indicating a growing trend towards collaborative efforts.

Kılıç et al. (2019) analyzed co-authorship networks across 22 accounting journals, noting a rising trend in multi-authored papers among 10,863 publications. They found that 26% were single-authored, 36% were two-authored, three authors contributed to 30%, and 8% involved four or more authors. Lee D. Parker was highlighted as the most prolific author with 48 papers. Their study involved key network indicators like 31,836 ties, 8,700 nodes, an average degree centrality of 3.557, a network concentration of 0.006, a network density of 836 components, with the largest component representing 70% of the total network and an average distance of 7.120.

Faraji et al. (2022) conducted a pioneering study on scholarly collaborations within Iran's accounting sphere. They analyzed papers from the top five accounting journals between 2016 and 2018. Their findings highlighted collaborative dynamics, predominantly among professors and students, often stemming from thesis-related papers. Professors in international scholarly accounting papers tend to collaborate more frequently, minimizing student involvement.

Given the significance of scholarly collaboration networks and the research gap in accounting and finance, this study analyzes such networks in English-language accounting and finance journals. The anticipated findings are poised to guide journal policies and mark a significant contribution in this area of research.

2.4 Research questions

This study endeavors to provide a comprehensive overview of scholarly publications within English-language accounting and finance journals in Iran. Our objectives encompass identifying key contributors facilitating knowledge dissemination, unraveling prevalent connections among these individuals, and delineating influential entities within this scholarly network. To accomplish these objectives, this paper will address several critical questions:

First Question: What is the trend in paper publications, and to what extent is there cross-border collaboration with foreign scholars?

Second Question: How do authorship patterns and degrees of collaboration among scholars manifest, and which scholars have contributed significantly as sole authors?

Third Question: Who are the most prolific individuals in terms of published papers?

Fourth Question: What macro-indicators define the scholarly collaboration network among scholars in these published papers?

Fifth Question: How do micro-indicators of scholarly collaboration networks among scholars (such as the Degree Centrality Index, Closeness Centrality Index, Betweenness Centrality Index, and Eigenvector Index) manifest in these published papers?

Sixth Question: Which collaborative groups feature most prominently as dual collaborative entities in these published papers?

3. Research Methodology

The current research adopts a scientometrics and social network analytics approach. The study encompasses papers published across all four English-language accounting and finance journals in Iran from their inception until the conclusion of 2022. Data necessary for analysis was gathered

directly from the official websites of these journals. Information regarding the authors of the papers was collated into an Excel file, addressing variances in author names through the Fuzzy Lookup Add-in for Excel. Each author's data underwent cross-referencing, and the dataset was structured into a co-authorship matrix using Bibexcel. Following this, separate co-authorship matrices were formulated for each journal and subsequently imported into software applications ucinet and VOSviewer. We conducted comprehensive co-authorship network analyses encompassing all journals collectively and for each individual journal. All four English-language accounting and finance journals follow a quarterly publication schedule. Presented below is a summary outlining the key statistical data pertinent to the research's population across these journals:

Table 3. Research Statistical Population

Code	Journal Title	Start	Print Circulation	Number of Published Papers	Publisher	Website
1	International Journal of Finance and Managerial Accounting	2016 (winter)	28	311	Iranian Financial Engineering Associations	ijfma.srbiau.ac.ir
2	Advances in Mathematical Finance and Applications	2016 (summer)	26	264	Islamic Azad University of Arak	amfa.arak.iau.ir
3	Iranian Journal of Finance	2017 (summer)	22	131	Iran Finance Association	ijfifsa.ir
4	Iranian Journal of Accounting, Auditing and Finance	2017 (Autumn)	21	147	Ferdowsi University of Mashhad, Iran	ijaaf.um.ac.ir
Sum			97	853	9 papers are published in each number on average	

4. Research Findings

This section presents findings derived from analyzing the scholarly collaboration network across four English-language accounting and finance institutions, considering various indicators.

4.1 Answering the first research question

"What is the trend in paper publications, and to what extent is cross-border collaboration with foreign scholars?" Journals 1, 2, 3, and 4 have been consistently publishing papers since the commencement of 2016. Specifically, two publications were made in July 2016, followed by two in July 2017 and one in February 2017 for Journal 4. By the conclusion of 2022, a total of 853 papers had been published across 97 English journals focusing on accounting and finance in Iran, averaging 8.8 papers per issue. The publication trend demonstrates an upward trajectory, detailed in Table 4. Notably, Journals 3 and 4 have maintained a consistent publication routine, with Journal 3 showcasing a consistent publication of 6 papers in all issues except for Issue 4 in October 2018, where 5 papers were published. Conversely, Journal 4 has displayed a lower publication rate, with only 7 papers across all its issues. It's crucial to highlight that among these publications, only 53 papers have featured affiliations with foreign universities, including Iranian individuals. Despite the anticipation of an increasing trend, the level of collaboration has not risen significantly. Journal 4 records the highest rate of international collaboration at 21%, involving 17 papers featuring international contributors.

Table 4. Examination of international collaboration and publication trends in English journals focusing on accounting and finance in Iran from 2016 to 2022

Journals	Total		Journal 1		Journal 2		Journal 3		Journal 4	
Number of:	papers	IC*	papers	IC*	papers	IC*	papers	IC*	papers	IC*
2016	44	6	28	6	16	-	-	-	-	-
2017	83	5	32	4	32	-	12	-	7	1
2018	114	9	31	3	32	1	23	-	28	5
2019	124	8	40	3	32	3	24	-	28	2
2020	137	11	49	4	36	4	24	1	28	2
2021	167	6	63	3	52	1	24	-	28	2
2022	184	8	68	1	64	1	24	1	28	5
sum	853	53	311	24	264	10	131	2	147	17
Percentage of Collaboration	6%		8%		4%		2%		12%	
Issue	97		28		26		22		21	
The average number of papers in each number	8.8		11		10		5.95		7	

*IC: Number of international collaborations

4.2 Answering the second question

How do authorship patterns and degrees of collaboration among scholars manifest, and which scholars have contributed significantly as sole authors?

An analysis of authorship patterns within papers published in English-language accounting and finance journals in Iran indicates that the three-authorship pattern is the most prevalent, representing 354 papers (42%). Following this, co-authorship and four-authorship patterns constitute 213 papers (25%) and 193 papers (23%). Single authorship accounts for 72 papers (8%), while five and six-authorship patterns are the least common, appearing in 20 and 1 paper, respectively. The distribution of papers and their corresponding percentages for each journal is detailed in Table 4. Across all journals, except Journal 4, more than 88% of papers have been authored and published by two to four authors, aligning with prevalent practices in standard journal publication norms. However, Journal 4 stands out due to a notable number of monographs, resulting in variations in prevailing authorship patterns. These monographs contribute to the lowest degree of collaboration, accounting for 78% in Journal 4.

Quantifying the degree of author collaboration involved utilizing the formula introduced by Subramanyam (1983):

$$\text{Degree of collaboration} = \frac{\text{Number of multi-authored papers}}{\text{Number of multi-authored papers} + \text{Number of single-authored papers}}$$

Table 5. Authorship patterns in English journals of accounting and finance of Iran

Number of Authors	Sum of Journals		Journal 1		Journal 2		Journal 3		Journal 4	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
One Author	72	8%	14	5%	21	8%	5	4%	32	22%
Two Author	213	25%	60	19%	74	28%	33	25%	46	31%
Three Author	354	42%	147	47%	108	41%	54	41%	45	31%
Four Author	193	23%	83	27%	51	19%	38	29%	21	14%
Five Author	20	2%	7	2%	9	3%	1	1%	3	2%
Six Author	1	0%	-	-	1	0%	-	-	-	-
Sum of Papers	853		311		264		131		147	
Degree of collaboration	92%		96%		92%		96%		78%	

By examining the monographs, we found that the following authors have had the most monographs in English-language journals of accounting and finance of Iran during the investigated seven-year period. Therefore, Mohammad Izadikhah (journal 3: Editor-in-Chief) and Reza Jamei have had the most monographs, having published three. Table 6 includes all the authors with multiple monographs during the study period.

Table 6. Information of authors with more than one monograph sorted by English journals of accounting and finance

Name	Number of Monographs	Journal 1	Journal 2	Journal 3	Journal 4
Mohammad Izadikhah	3	-	3	-	-
Reza Jamei	3	1	-	1	1
Hassan Rashidi	2	-	-	-	-
Reza Hesarzadeh	2	-	-	-	2
Arash Arianpoor	2	-	-	-	2
Ali Daemigah	2	-	-	-	2

4.3 Answering the third question

Who are the most prolific individuals in terms of published papers?

The most prolific authors in English-language accounting and finance journals in Iran are detailed in the following table. Collectively, Fraydoon Rahnamay Roodposhti, Hashem Nikoomaram, and Mirfeiz Fallah Shams have demonstrated the highest productivity, having published 28 (3.3%), 24 (2.8%), and 19 (2.2%) papers, respectively. The names of these highly productive authors, sorted by the journals they have contributed to, are also presented in Table 7.

Authors who have contributed more than 7 papers to Journal 1, more than 3 papers to Journal 2, and more than 2 papers to Journals 3 and 4 are listed, following the Bradford principle to encompass the productive authors of these journals. Consequently, the most substantial share of publications in journals exceeding the collaboration limit of 3.3% (across all journals) is attributed to the following authors:

Fraydoon Rahnamay Roodposhti (1 journal: 8%)

Hashem Nikoomaram (1 journal: 5.7%)

Mohammadreza Abdoli (3 journals: 5.3%)

Mirfeiz Fallah Shams (1 journal: 5.1%)

Zahra Pourzamani (1 journal: 4.2%)

Reza Tehrani (3 journals: 3.8%)

Hamidreza Vakilifard (1 journal: 3.5%)

Journal 1, with 5 items, and Journal 3, with 2 items, hold the record for publishing the highest number of papers by a specific author. In contrast, Journals 2 and 4 have not surpassed the average.

To visualize the network's density and highlight concentrated areas on the map, we utilized the VOSViewer software (see Figure 1-5). In this visualization, each vertex is color-coded based on multiple factors, including its weight within the network, the number of neighboring vertices, and the significance of these adjacent vertices. Colors ranging from orange to dark yellow (tending towards red) signify vertices surrounded by numerous and heavily weighted neighboring vertices. Conversely, when a point has fewer nearby vertices with lower weights, its color shifts towards blue; the colors indicate vertex density, ranging from blue (indicating low density) to red (indicating high density). Authors positioned within denser areas appear in red, highlighting their pivotal roles in the journal co-authorship network (Erfanmanesh and Hosseini, 2015).

Table 7. The most productive authors in English journals of accounting and finance of Iran

rank	Journal 1		Journal 2		Journal 3		Journal 4	
	Names of individuals with more than 10 papers	number	Names of individuals with more than 4 papers	Number	Names of individuals with more than 3 papers	number	Names of individuals with more than 3 papers	number
1	Fraydoon Rahnamay	28	Ahmad Sariak	8	Mohammadreza Abdoli	7	Mahdi Faghani	4
2	Roodposhti Hashem Nikoomaram	24	Mohsen Hamidian Reza Gholami Jamkarani	7	Reza Tehrani Ghodrattollah Emamverdi	5	Zohreh Hajjha	4
3	Mirfeiz Fallah Shams	19	Mirfeiz fallah shams	6		4	Mahdi Moradi	3
4	Roya Darabi	16	Zahra Pourzamani	6	Allah Karam Salehi	4	Heydar Mohammadzadeh Salteh	3
5	Mohammad Hamed Khanmohammadi KORDLOUJE	16	Hamidreza Vakilifard	6	Ebrahim Abbasi	4	Masood Fooladi	3
6	Hassan Yazdifar	15	Hassan Yazdifar	5	Roya Darabi	4	Maryam Farhadi	3
7	Hamidreza Vakilifard	15	HAMIDREZA KORDLOUJE	9	Mohammad Hamed Khan Mohammadi	4	Mahmoud Mousavi Shiri	3
8	Mohsen Hamidian	14	Bahman Banimahd	9	Ali Asghar Anvary Rostamy	4	Amir Ghafourian Shagerdi	3
9	Bahman Banimahd	14	Mohammad Hamed Khanmohammadi	8	Gholamreza Farsad Amanollahi	4	Arash Arianpour	3
10	Zahra Pourzamani	14	Keyhan Azadi	8	Mohsen Rostamy Malkhalifeh	4	Arezoo Aghaei Chadegani	3
11	Ghodratallah Talebnia	14	MohammadReza Vatanparast	8	Reza Tehrani	4	Babak Jamshidinavid	3
12	Hassan Yazdifar	12	Roya Darabi	8	Mohammad	4	Hamidreza Kordlouie	3
13	Mohammadreza Abdoli	12	Taghi Torabi	7	Gholamrezapour Majid Zanjirdar	4	Mohammad Esmail Fadaeinejad	3
14	Mahdi Safari Gerayli	11	Ghodratallah Talebnia	7	Hashem Nikoomaram	4	Mehrdad Ghanbari	3
15	Nader Rezaei	11	sina kheradyar	7	Mitra Mohammadtalebi	4	Mohsen Seighali	3
16	Mohsen Dastgir	11	Asgar Pakmaram	7	Abbas Aflatooni	4	Fatemeh Sarraf	3
17	Hossein Panahian	11	Sahar Sepasi	6	Hossein Panahian Parviz Saeidi	4		
18	sina kheradyar	10	Mahdi Meshki	6	Rahmatollah Mohammadipour	4		
19	Gholamreza Zomorodian	10	Rasoul Abdi	6	Mohammadipour Bahareh	4	Ghodratallah Talebnia	3
20	Reza Gholami Jamkarani	10	Nader Rezaei	6	Mohammadtalebi Ghodrattallah Talebnia	4	Reza Hesarzadeh	
21	Asgar Pakmaram	10	Mahdi Safari Gerayli	4		4		

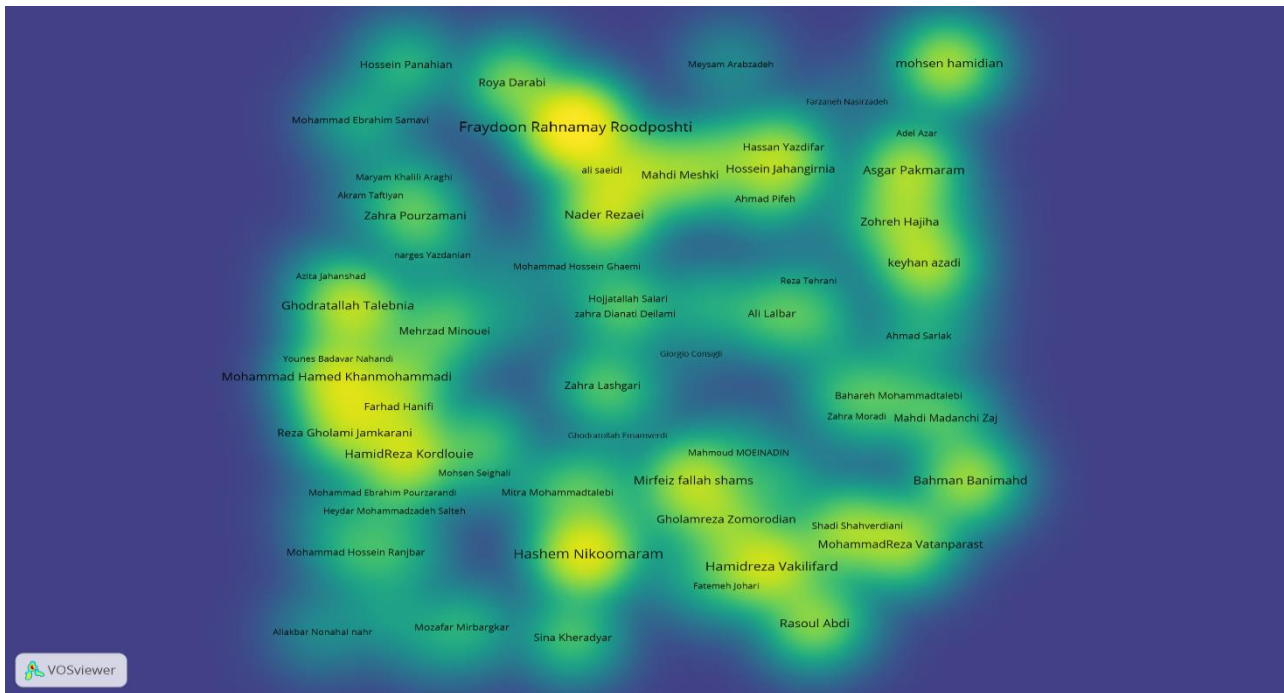


Figure1. Visualization of network density across all journals

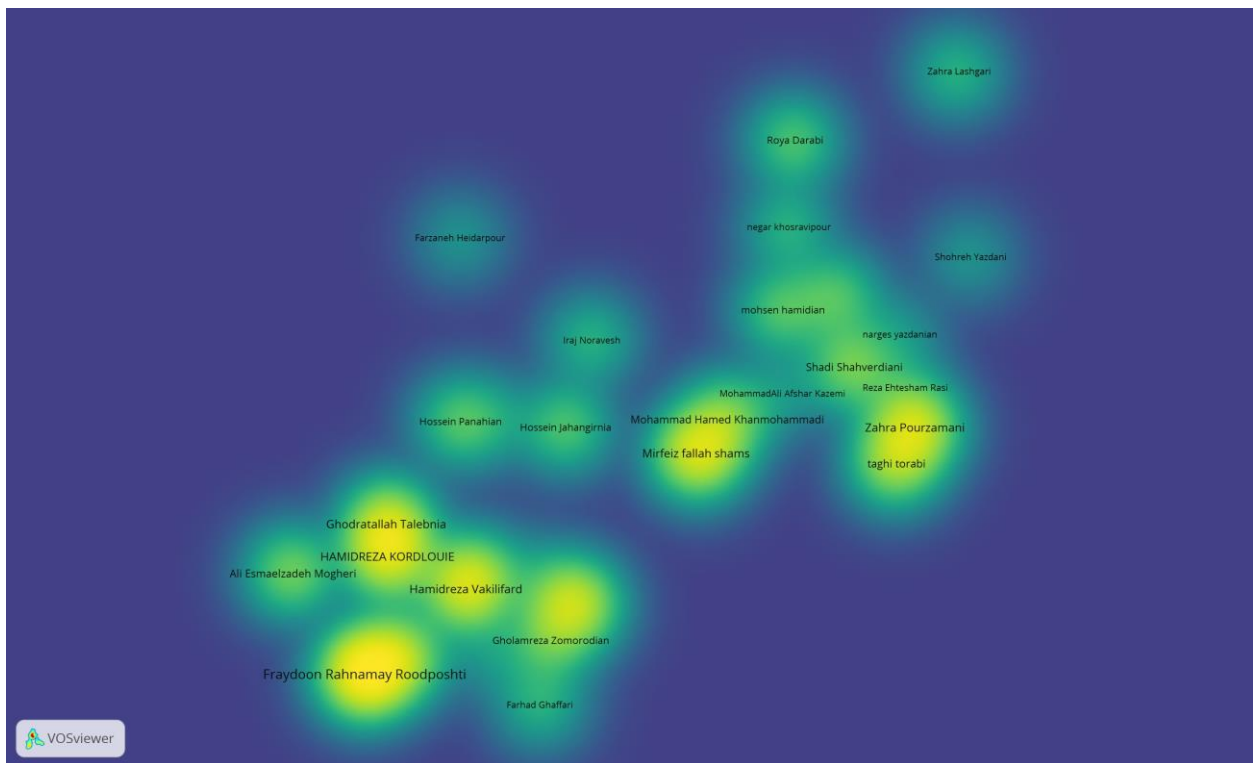


Figure 2. Density visualization of the network in Journal 1

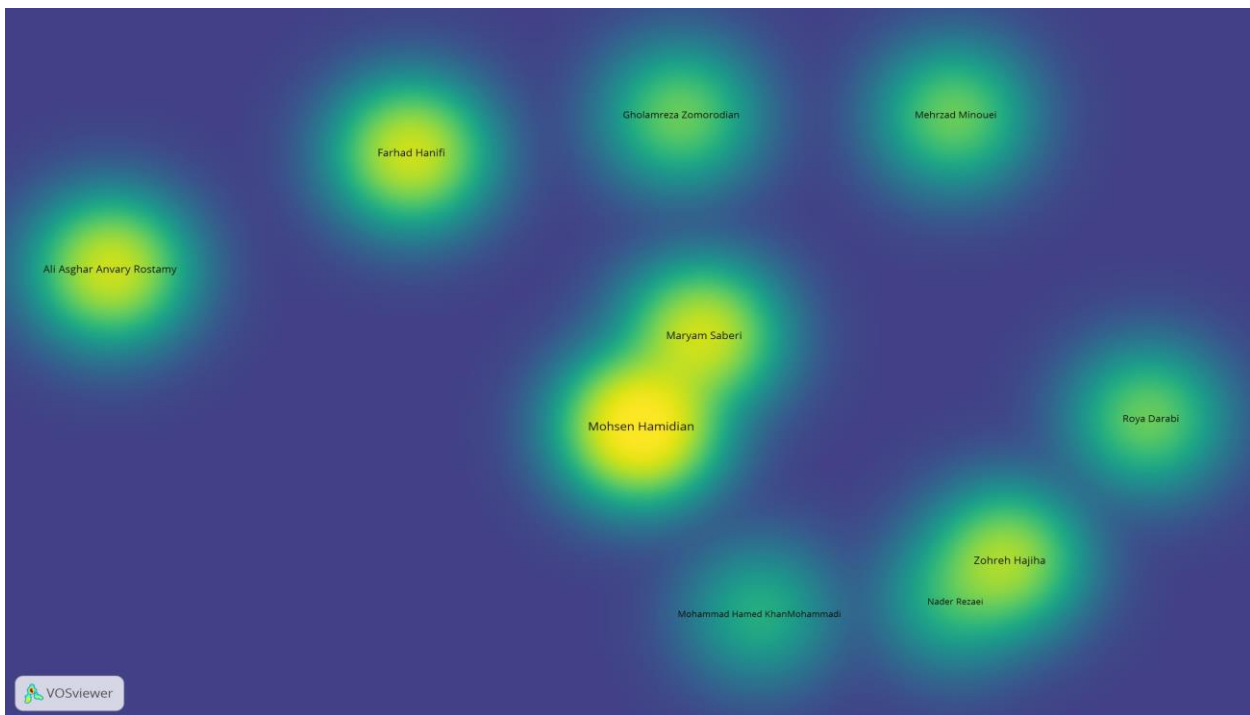


Figure 3. Density visualization of the network in Journal 2

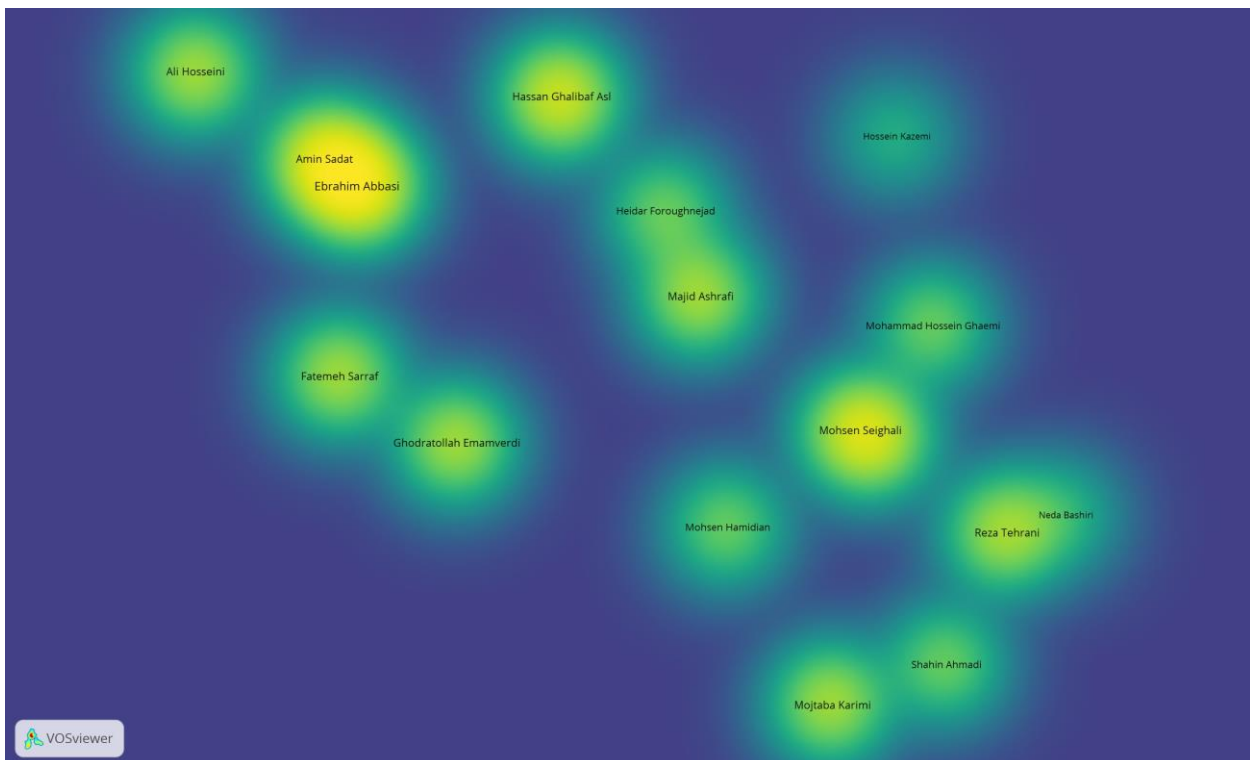


Figure 4. Density visualization of the network in Journal 3

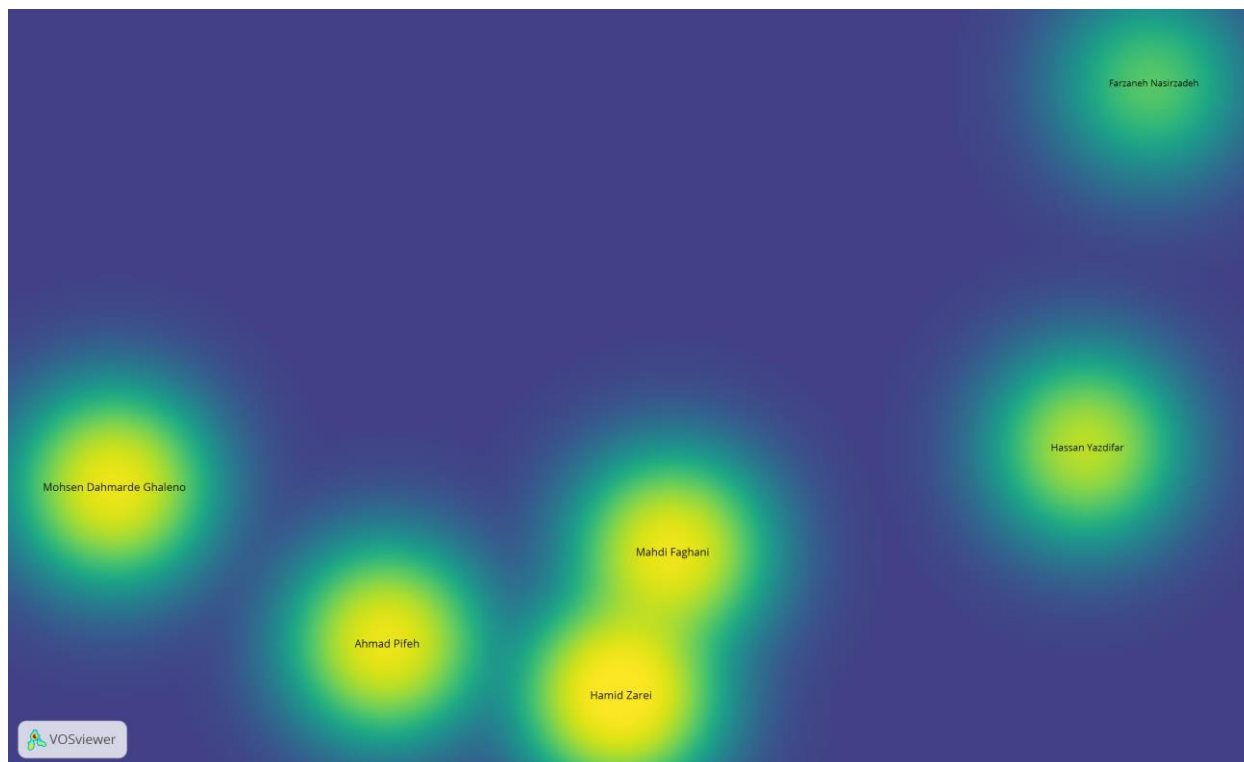


Figure 5. Density visualization of the network in Journal 4

4.4 Answering to the fourth question

What macro-indicators define the scholarly collaboration network among scholars in these published papers?

Macro indicators for scholarly collaboration networks in English-language accounting and finance journals in Iran are outlined in Table 8. The density measure provides insight into the level of interconnectedness within a network, representing the ratio of actual connections to potential connections among actors. In simpler terms, network density measures the number of links in a network relative to the maximum number of possible links (Godley, Barron, and Sharma, 2011). The overall network density across all journals is calculated at 0.018. However, Journal 1 stands out with a notably higher density measure of 0.051, indicating a greater level of interconnectedness within the network specific to Journal 1.

The examination of social networks within English accounting and finance journals in Iran, both across all journals and specific to Journals 1 to 4, reveals the presence of 178, 57, 46, 59, and 51 nodes representing scholars, respectively. Furthermore, 562, 162, 56, 114, and 58 ties denote the co-authorship connections among scholars. Each node represents a distinct author in this context, and the ties symbolize collaborative authorship between these individuals. Essentially, if a tie links two authors, it signifies their collaboration on at least one paper. Figures 6 to 10 visually depict these scholarly collaboration networks among nodes. Notably, the thickness of the lines represents the strength of the ties, reflecting the number of co-authored papers between two groups of authors. Thicker lines indicate a higher number of collaborative papers between these authors, as illustrated in the figures.

Table 8. Macro-indicators of present social networks in English journals of accounting and finance

Indicator	Description	Total	Journal 1	Journal 2	Journal 3	Journal 4
Node (author)		178	57	46	59	51
Tie	Collaborative authorship among scholars	562	162	56	114	58
Average Degree		3.157	2.842	1.217	1.932	1.137
Degree centralization		0.079	0.169	0.065	0.055	0.039
Density	Density or connections between network nodes is a value ranging from zero to one, representing the ratio of existing connections to all potential relationships within the network.	0.018	0.051	0.027	0.033	0.023
Component	It is a subset of the network, comprising nodes linked to another node through single or multiple ties.	31	11	23	18	25
Connectedness (% of the size of the largest components)	The extent of connectivity and interrelation among nodes within a network through ties or interconnected networks of ties.	0.390	0.319	0.083	0.134	0.038
Closure		0.315	0.427	0.375	0.535	0.409
Average (Mean) distance	The average distance between any two distinct groups within the social network.	4.271	2.837	2.291	3.178	1.612
Diameter	The distance between the farthest nodes within the primary component of the network.	12	7	5	9	4
Breadth		0.942	0.855	0.952	0.935	0.971
Compactness		0.117	0.145	0.048	0.065	0.029

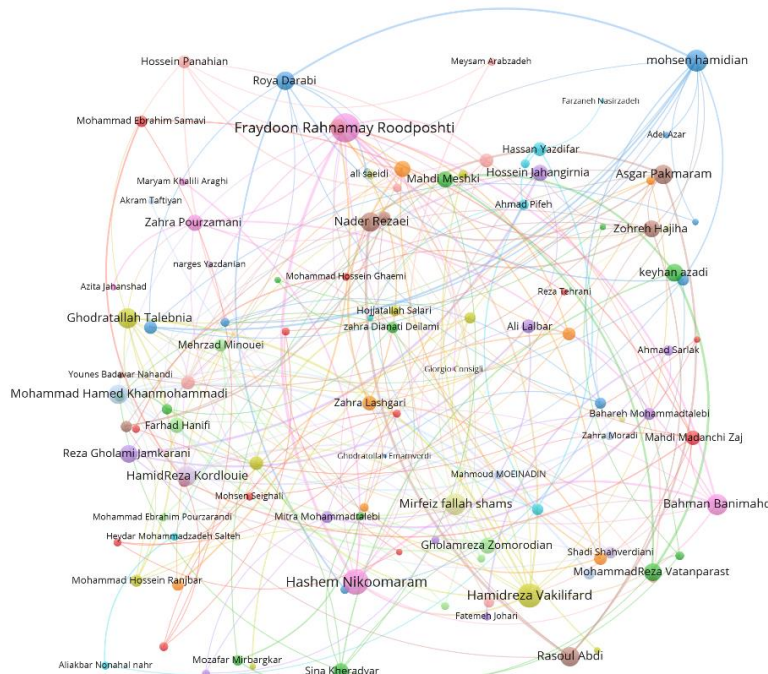


Figure 6. Network visualization across for journals

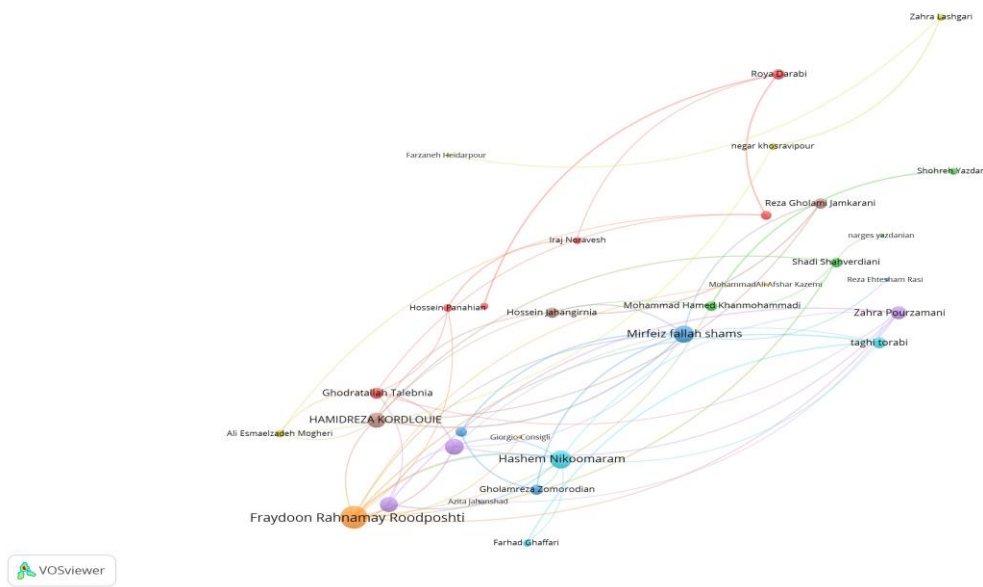


Figure 7. Network visualization for Journal 1

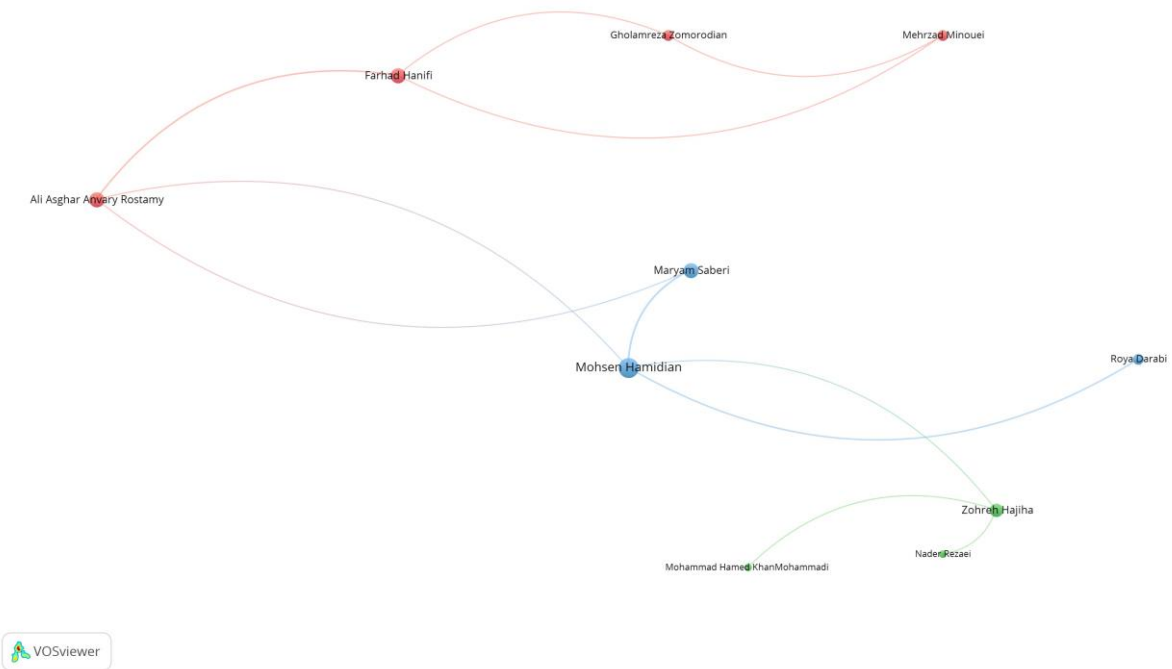


Figure 8. Network visualization for Journal 2

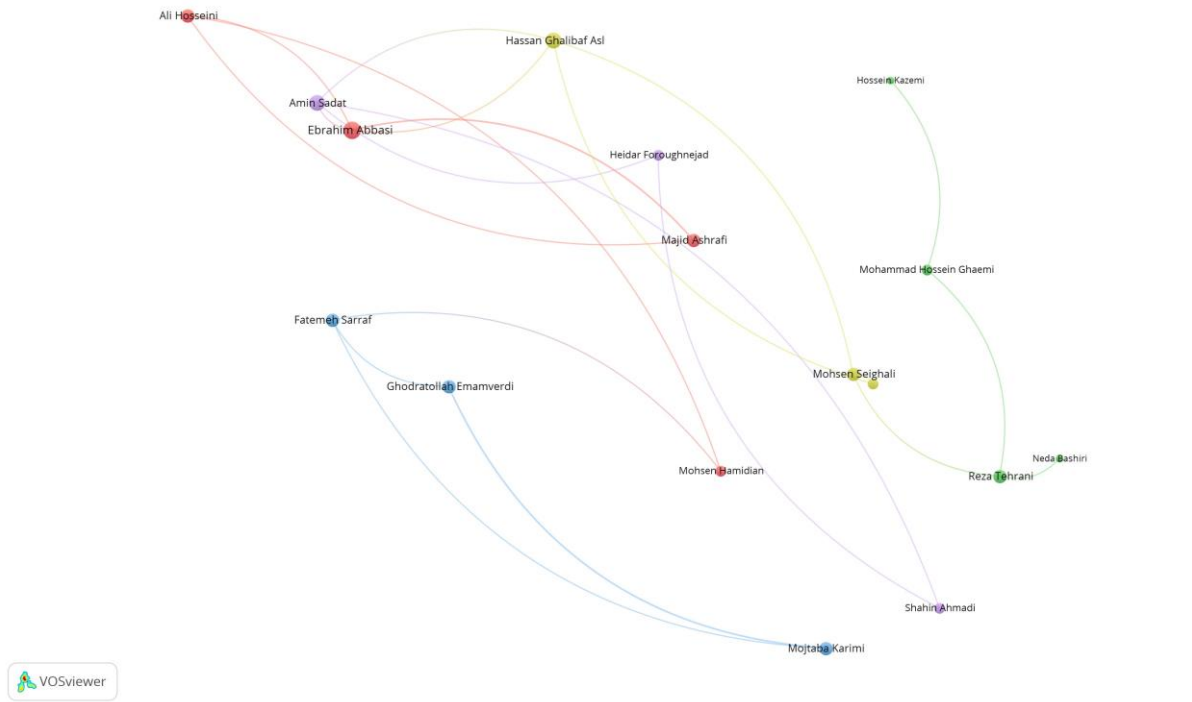


Figure 9. Network visualization for Journal 3

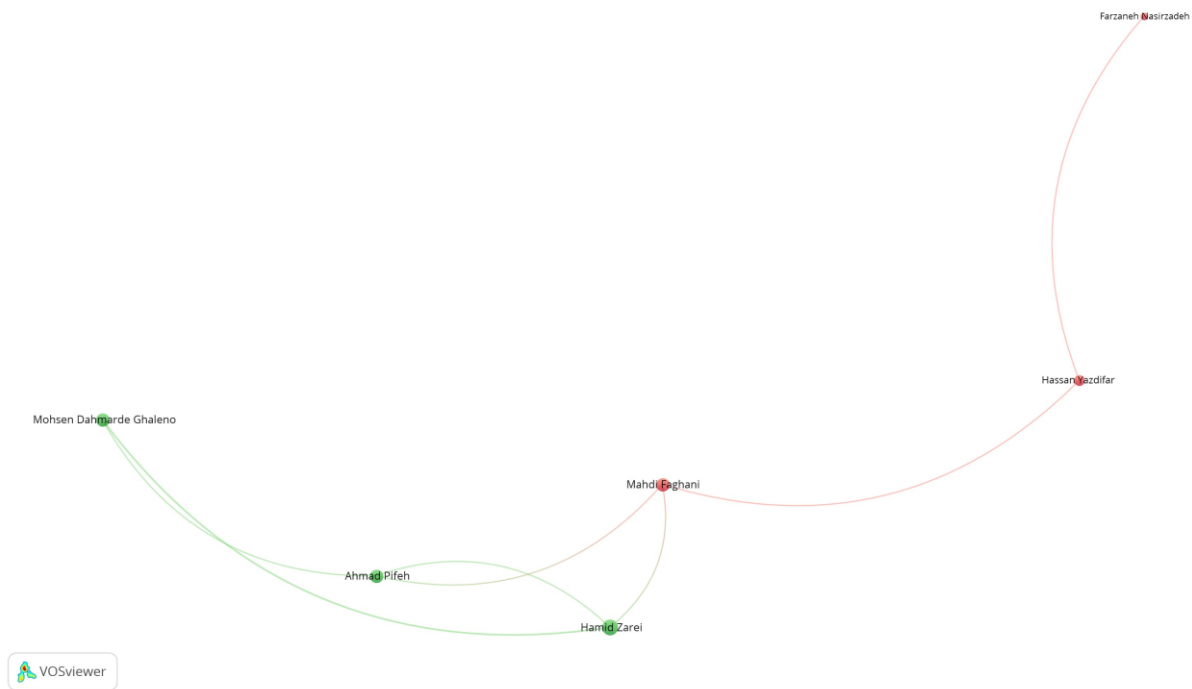


Figure10. Network visualization for Journal 4

4.5 Answering the fifth question

How do micro-indicators of scholarly collaboration networks among scholars (such as the Degree Centrality Index, Closeness Centrality Index, Betweenness Centrality Index, and Eigenvector Index) manifest in these published papers?

4.5.1 Degree centrality indicated in journals of the study

Degree centrality gauges a node's connections within the network, essentially representing the number of ties received by a node (Wasserman and Faust, 1994). For instance, it indicates the number of papers where Ghannad et al. (2023) collaborate with others. If Ghannad et al. (2023) co-author one paper with three others, another with two, and one as a sole author, their degree centrality would be 4 (3+1+0). Nodes with the highest degree centrality index are regarded as the most collaborative within the network. At the universal level encompassing all journals, F. Rahnamay Roodposhti, Hashem Nikoomaram, and Hamidreza Vakilifard hold the highest degree centrality indices, each scoring 17, 13, and 13, respectively. Among the four journals, F. Rahnamay Roodposhti boasts the highest degree centrality index, with 12. For further details about researchers with the highest degree centrality index, both in the universal context and sorted by journal, refer to Table 9.

Table 9. Degree centrality of researchers in English journals of accounting and finance of Iran

rank	In universal level		Journal 1		Journal 2		Journal 3		Journal 4	
	Name	Degree Centrality	Name	Degree Centrality	Name	Degree Centrality	Name	Degree Centrality	Name	Degree Centrality
1	F. Rahnamay Roodposhti	17	F. Rahnamay Roodposhti	12	Mohsen Hamidian	4	Ali Khozain	5	Ahmad Pifeh	3
2	Hashem Nikoomaram	13	Mirfeiz fallah shams	8	Ali Lalbar	4	Ebrahim Abbasi	4	Asgar Pakmaram	3
3	Hamidreza Vakilifard	13	Hashem Nikoomaram	7	Ali Asghar Anvary Rostamy	3	Amin Sadat	4	Hamid Zarei	3
4	Mirfeiz Fallah Shams	12	Zahra Pourzamani	7	Zohreh Hajiha	3	Ghodratallah Talebnia	4	Mahdi Faghani	3
5	Mohsen Hamidian	12	Hamidreza Vakilifard	7	Ahmad Sarlak	3	Hamidreza Kordlouie	4	Zohreh Hajiha	3
6	Ghodratallah Talebnia	11	HamidReza Kordlouie	7	Farhad Hanifi	3	Hassan Ghalibaf Asl	4	Hassan Yazdifar	2
7	HamidReza Kordlouie	11	Ghodratallah Talebnia	6	Mahdi Madanchi Zaj	3	Mahboobeh Jafari	4	M.Ali Bagherpour	2
8	Zohreh Hajiha	10	Bahman Banimahd	5	B.Mohammadtalebi	3	Reza Tehrani	3	Mohsen Dastgir	2

4.5.2 Betweenness centrality indicated in journals of the study

Betweenness centrality pinpoints nodes that act as intermediaries between other pairs of nodes across multiple potential shortest paths. High betweenness centrality substantially influences network dynamics (Freeman, 1978). In simpler terms, it represents the likelihood of a node being positioned in the shortest path between two distinct groups of nodes within the network. When an author is placed on the shortest path between two others, they play an essential role and contribute to the network's social capital. Groups with high betweenness centrality wield control over the network's content flow. At the universal level, Zohreh Hajiha held the highest betweenness index in 1918. In Journal 1, Fraydoon Rahnamay Roodposhti and Ali Esmaelzadeh Mogheri lead with betweenness indices of 162 and 105, respectively. For other journals, the betweenness index is less significant. For

detailed information about researchers with the highest betweenness centrality index at the universal level, sorted by journal, refer to Table 10.

Table 10. Betweenness centrality of researchers in English journals of accounting and finance of Iran

rank	In universal level		Journal 1		Journal 2		Journal 3		Journal 4	
	Name	Betweenness	Name	Betweenness	Name	Betweenness	Name	Betweenness	Name	Betweenness
1	Zohreh Hajiha	1917.98	F. Rahnamay Roodposhti	161.679	Mohsen Hamidian	23	Ebrahim Abbasi	60	Asgar Pakmaram	6
2	F. Rahnamay Roodposhti	1528.96	Ali Esmaelzadeh Mogheri	105.386	Ali Asghar Anvary Rostamy	18	Hassan Ghalibaf Asl	60	Mahdi Faghani	6
3	mohsen hamidian	1268.07	HAMIDREZ A KORDLOUI E	99.933	Zohreh Hajiha	15	Ali Hosseini	48	Zohreh Hajiha	4
4	Asgar Pakmaram	1085.50	Mirfeiz fallah shams	83.602	Ali Lalbar	14	Mohsen Seighali	48	Hassan Yazdifar	4
5	Mirfeiz fallah shams	760.664	Ghodratallah Talebnia	62.629	Farhad Hanifi	14	Reza Tehrani	41	Heydar Mohammadzadeh Salteh	4
6	Heydar Mohammadzadeh Salteh	714	negar khosravipour	56	Ahmad Sarlak	6	Mohsen Hamidian	39	Ahmad Pifeh	1.5
7	Ali Lalbar	620	Hossein Panahian	40.46	Reza Gholami Jamkarani	6	Hamidreza Kordlouie	30	Hamid Zarei	1.5
8	Aliakbar Nonahal nahr	618	Zahra Pourzamani	39.817	Mahdi Madanchi Zaj	4	Fatemeh Sarraf	28	M. Ali Bagherpour Velashani	1

4.5.3 Closeness centrality indicated in journals of the study

Closeness centrality gauges the proximity of each node to all other nodes within a social network. It reflects an individual's position in terms of outreach and visibility. Nodes with lower closeness scores wield more influence within the network, providing enhanced accessibility for interactions with other nodes. Consequently, unlike other centrality indices, a lower closeness centrality score signifies a more pivotal role that a researcher holds within the network. Details about researchers with the lowest closeness centrality index at the universal level, sorted by journal, can be found in Table 11.

4.5.4 Eigenvector index in journals of the study

The essence of eigenvector centrality lies in understanding a node's importance based on its own attributes and the significance of its neighboring nodes. When connected to influential nodes within the network, a node's importance amplifies due to these associations (Freeman, 1978). This centrality index offers insights into an individual's connections with other central and influential figures in a social network, unveiling key players and clandestine actors.

Notably, the eigenvector centrality index tends to be higher in smaller groups within the universal network. For instance, the highest eigenvector centrality within the entire network is attributed to Ahmad Pifeh and Hamid Zarei, with an index of 0.53. In Journal 4, Mitra and Bahareh Mohammadalebi closely follow with an index of 0.498. However, at the universal level, the eigenvector index does not surpass 0.4, with F. Rahnamay Roodposhti holding the highest index at 0.37. Furthermore, it's important to note that in Journal 3, the eigenvector index for less prolific researchers exceeds zero; hence, it is not included in the information table.

Table 11. Closeness Centrality of researchers in English journals of accounting and finance of Iran

rank	In universal level		Journal 1		Journal 2		Journal 3		Journal 4	
	Name	Closeness	Name	Closeness	Name	Closeness	Name	Closeness	Name	Closeness
1	F. Rahnamay Roodposhti	1184	F. Rahnamay Roodposhti	266	Mohsen Hamidian	232	Ebrahim Abbasi	461	Asgar Pakmaram	232
2	Zohreh Hajiha	1189	HAMIDREZA KORDLOUIE	270	Ali Asghar Anvary Rostamy	233	Hassan Ghalibaf Asl	461	Mahdi Faghani	232
3	Ghodratallah Talebnia	1210	Hamidreza Vakilifard	273	Zohreh Hajiha	236	Amin Sadat	465	Zohreh Hajiha	233
4	HamidReza Kordlouie	1210	Mirfeiz fallah shams	277	Maryam Saberi	236	Ali Hosseini	467	Ahmad Pifeh	233
5	mohsen hamidian	1210	Zahra Pourzamani	277	Farhad Hanifi	237	Mohsen Seighali	467	Hamid Zarei	233
6	Hamidreza Vakilifard	1211	Ali Esmaelzadeh Mogheri	279	Ali Lalbar	239	Majid Ashrafi	471	Hassan Yazdifar	234
7	Bahman Banimahd	1217	Bahman Banimahd	279	Bahareh Mohammadalebi	240	Moslem Peymani	471	Heydar Mohammadzadeh Salteh	234
8	Hashem Nikoomaram	1220	Ghodratallah Talebnia	280	Roya Darabi	240	Foroushani Reza Tehrani	476	Nader Rezaei	234

4.6 Answering the sixth question

Which collaborative groups feature most prominently as dual collaborative entities in these published papers?

Twosome scholarly collaborations, often referred to as co-authorship pairs, represent a significant discovery in the analysis of scholarly collaboration networks. In this study, we thoroughly analyzed 853 English-language papers, identifying pairs of researchers involved in more than three scholarly collaborations. We compiled a detailed list of researchers likely to co-author with others, totaling the co-authorships attributed to each researcher, presented in Table 13. This table includes authors who have engaged in numerous scholarly collaborations with more than one person, listed in the right column. It's important to note that Fraydoon Rahnamay Roodposhti might have been previously mentioned as a co-researcher. A closer examination of Table 13 reveals that both Fraydoon Rahnamay Roodposhti and Hashem Nikoomaram hold the highest number of twosome collaborations, with 10 co-authorship pairs. Additionally, these two researchers have established the highest level of collaboration repetition by forming collaborative groups, each with more than four collaborations, as detailed in Table 13.

5. Discussion and conclusion

It has been over seven years since the Scholarly Journals Commission of the Ministry of Science, Research, and Technology authorized the establishment of four English-language accounting and finance journals in 2016 and 2017. As of 2022, these journals collectively published 853 papers. This study's primary objective is to investigate and analyze the scholarly collaboration networks among authors whose work appears in these English accounting and finance journals, spanning from the first issue to the latest in 2022. Visualizing these networks offers valuable insights for policymakers within English-language accounting and finance journals, providing a clear view of collaboration extents.

Table 12. Eigenvector Index of researchers in English journals of accounting and finance of Iran

rank	In universal level				Journal 1		Journal 2		Journal 3		Journal 4	
	Names of individuals	Eigenvector Index	Names of individuals	Eigenvector Index	Names of individuals	Eigenvector Index	Names of individuals	Eigenvector Index	Names of individuals	Eigenvector Index	Names of individuals	Eigenvector Index
1	F. Rahnamay	0.37	F. Rahnamay	0.448	Bahareh	0.498	Ahmad Pifeh	0	Ahmad Pifeh	0.53		
2	Roodposhti	0.323	Roodposhti	0.367	Mohammadtalebi	0.498	Hamid Zarei		Hamid Zarei	0.53		
3	Hamidreza	0.311	Hamidreza	0.34	Mitra	0.49	Mahdi Faghani		Mahdi Faghani	0.478		
4	Vakilifard	0.273	Vakilifard	0.331	Mohammadtalebi	0.408	Mohsen Dahmarde		Mohsen Dahmarde	0.399		
5	Hashem	0.272	Zahra	0.291	Ali Lalbar	0.2	Ghaleno		Ghaleno	0.21		
6	Nikoomaram	0.245	Pourzamani	0.272	Ahmad Sariak	0.175	Hassan Yazdfar		Hassan Yazdfar	0.079		
7	Bahman	0.231	Hashem	0.245	Reza Gholami	0.146	Farzaneh		Farzaneh	0.000		
8	Banimahd	0.219	Nikoomaram	0.215	Jamkarani	0.072	Nasirzadeh		Nasirzadeh			
	Ghodratallah		Banimahd		Majid Zanjirdar		else		else			
	Talebna		taghi torabi		Fatemeh Johari							
	HamidReza		Mirfeiz fallah		Hossein Jahangirnia							
	Kordlouie		shams									
	Zahra		Talebna									
	Pourzamani											
	Mirfeiz fallah											
	shams											

Table 13. Formation of certain collaboration groups among researchers with more than 4 or more collaborations.

Row	Researcher	Co-researcher	Number of Collaborative Papers	The sum of more than 4 Collaborations of the Researcher
1	Fraydoon Rahnamay Roodposhti	Hashem Nikoomaram	10	19
		Bahman Banimahd	5	
		Hamidreza Vakilifard	4	
2	Hashem Nikoomaram	F Rahnamay Roodposhti	10	19
		Bahman Banimahd	5	
		Hamidreza Vakilifard	4	
3	Hamidreza Vakilifard	Ghodratallah Talebnia	5	13
		F Rahnamay Roodposhti	4	
		Hamidreza Vakilifard	4	
4	Nader Rezaei	Rasoul Abdi	8	13
		Asgar Pakmaram	5	
5	Rasoul Abdi	Asgar Pakmaram	5	13
		Nader Rezaei	8	
6	keyhan azadi	MReza Vatanparast	7	12
		Mahdi Meshki	5	
7	MohammadReza Vatanparast	keyhan azadi	7	12
		Mahdi Meshki	5	
8	Mahdi Meshki	keyhan azadi	5	10
		MReza Vatanparast	5	
9	Bahman Banimahd	Hashem Nikoomaram	5	10
		F Rahnamay Roodposhti	5	
		Rasoul Abdi	5	
10	Asgar Pakmaram	Nader Rezaei	5	10
		Hossein Jahangirnia	6	
11	Reza Gholami jamkarani	Ali Lalbar	4	10
		Maryam saberi	5	
12	Mohsen Hamidian	Roya Darabi	4	9
		Mehrdad Ghanbari	7	
13	Babak Jamshidinavid	Shohreh Yazdani	6	6
14	MHamed Khanmohammadi			
15	Mohammadreza Abdoli	Farhad Dehdar	5	5
16	Mahdi Safari Gerayli	hassan Valiyan	5	
17	Mirfeiz fallah shams	HAMIDREZA KORDLOUIE	4	4
		Zahra Lashgari	4	
18	Negar Khosravipour	GholamReza Zomorodian	4	4
19	Farhad Hanifi	Alireza Maetoofi	4	
20	Mansour Garkaz	Hassan Yazdifar	4	4
21	Ahmad Nasser	Mitra	4	
22	Bahareh Mohammadtalebi	Mohammadtalebi	4	

The results of this study reveal that 2,438 different authors contributed to the total 853 papers, resulting in an average of approximately 2.8 authors per paper in accounting and finance. This aligns closely with a study by Ghane and Rahimi (2011), which reported an average co-authorship of 2.9 in English-language engineering journals. However, this contrasts with findings by Erfanmanesh and Hosseini (2015) and Thavamani (2014), which reported an average of 2 authors for papers in

information science in Malaysia and Iran. Erfanmanesh and Morovati (2016) also found an average of 1.47 authors per paper in a quarterly journal of interdisciplinary studies in human sciences. International collaboration among professors occurred in only 6% of the total papers, significantly lower than the international collaboration rates reported in similar studies within accounting and finance, suggesting a need for enhanced international partnerships and effective policy-making in this field.

Analysis of paper authorship patterns revealed that only 8% of papers were authored individually, while the rest were collaborative efforts. The collaboration percentage among authors ranged from 92% to 95% across journals, dropping to 78% in Journal 4, which published the most monographs. Notably, Mohammad Izadikhah and Reza Jamei each have three monographs to their credit. The most prolific authors, Fraydoon Rahnamay Roodposhti, Hashem Nikoomaram, and Mirfeiz Fallah Shams, have published over 80% of their papers in the "International Journal of Finance and Managerial Accounting."

Regarding publication shares, the highest contributors are Fraydoon Rahnamay Roodposhti (8% in one journal), Hashem Nikoomaram (5.7% in one journal), Mohammadreza Abdoli (5.3% in three journals), and Mirfeiz Fallah Shams (5.1% in one journal). In prior studies, Norouzi, the Editor of the Journal of Viewlogy, held the highest share of published papers at 11% (Khalili and Mohammadi, 2021), followed by Professor Mehrad, an editor, at 8.7% (Erfanmanesh and Hosseini, 2015), while this index in other journals was below 5% (Erfanmanesh and Morovati, 2016; Hajipour et al., 2019; Khalili and Mohammadi, 2021, in other investigated journals).

The analysis of the scholarly collaboration network reveals that out of 1,406 collaborating scholars, 71% contributed to only a single paper. Nodes for network analysis included 178 authors with more than two papers, accounting for a total of 562 connections in the network. The overall compression index is 0.018, indicating relatively low coherence and a prevalence of isolated nodes. The International Journal of Finance and Managerial Accounting stands out with a compression index 0.051, signifying the highest coherence.

The average degree of centrality aligns closely with major accounting journals worldwide. However, the connectedness index, representing the connectedness percentage of the largest component size, is at 39%, indicating relatively low group collaboration within the network. The most central scholars in the network include Fraydoon Rahmany Roodposhti, Hashem Nikoomaram, and Hamidreza Vakilifard, with the highest degree of centrality scores.

The study acknowledges significant limitations, such as the dispersion of authors' names in papers published in Iranian journals, impacting data retrieval. Additionally, exploring other dimensions of scholarly collaboration networks beyond English-language journals and including collaborations from foreign journals, reputable accounting conferences in Iran, Master's theses, and PhD dissertations is recommended for a more comprehensive understanding.

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