

Proceedings of the  
5<sup>th</sup> International Conference on Accounting Studies (ICAS 2018)  
16-17 October 2018, Penang, Malaysia

# The Current State of the Internal Audit Research: A Bibliometric Analysis

Azharudin Ali\*, Aidi Ahmi, Wan Norhayati Wan Ahmad

*Tunku Puteri Intan Safinaz School of Accountancy, Universiti Utara Malaysia*

---

## Abstract

The subject of internal audit (IA) has been long and widely studied in various issues. However, in recent years, IA research has focused more on the effectiveness and quality of IA, adding value and improving organization operations, and providing assurance and consulting role to evaluate and improve the effectiveness of organization's governance, risk management and control processes. IA become one of the crucial governance pillars for most of the organization to effectively manage risks and contributing to the achievement of organization objectives. This study aims to analyze and assess the literature published in the IA field by using an empirical and bibliometric approach. Thus, the study offers a standard bibliometric indicators to overview IA research using the Scopus database to identifying the relevant research in the domain that categorized by title, keyword, type of documents, authors, growth of publications, research productivity, and countries. The research findings discovered and obtained a total of 557 documents. It indicates about 84.7 percent or 472 out of 557 articles came from journals source type that has the internal audit keywords in its. The growth rate of retrieved literature was increase year by year since 2000. The United States of America ranked first in productivity with 138 (24.8%) published documents. The growth of literature in IA and outcomes of this bibliometric analysis found to be useful for researchers in understanding the prospect and outlook of the global research on IA, especially in finding a future research direction. However, the limitation of this type of study is due to the fact that some or a small number of articles may not be discovered in the study as a result of the unique features of different subtopics and subfield of research domain.

**Keywords:** Internal audit; bibliometric analysis, Scopus database

---

## 1. INTRODUCTION

There is growing interest on internal audit research due the central role of internal audit in adding value and improving the effectiveness of governance, risk management and control processes in the organization. In addition, the interest on IA study is receiving much attention due to the c-suite and key stakeholders' argument on the issues concerning IA effectiveness as a result of continuous corporate governance failure and fraud scandals. There has been increasing criticism by academics and stakeholders that asking where were IA during the turbulences times and what are their contribution as one of a main pillar in the corporate governance mechanism in helping organization in improving its performance and navigating a dynamic, complex and uncertainty business and economic environments. Their argument also includes IA effectiveness in discharging its role and responsibility, specifically in relation to the IA new definition issued by the Institute of Internal Auditors (IIA) in 1999, which define IA as: "independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It helps an organization accomplish its objectives by bringing a systematic,

---

\*Corresponding author. Tel.: +0-604-9287230; Fax: +0-604-9287215  
E-mail: [azharudinr@uum.edu.my](mailto:azharudinr@uum.edu.my)

disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes" (IIA, 1999). In this context, there are diverse direction of IA research domain that addressing and concerning various themes including IA independence and objectivity, assurance and consulting activity, characteristics of IA effectiveness and quality, IA role in risk management, governance and control processes, IA role in adding value and improve organization operation and performance, IA innovative and cutting age practices, IA profile and status, IA framework, resources and investment in IA function, IA competency and capability, IA tools and techniques, IA professionalism and issues on relevant, sustainability and future of IA service (IIA, 20015; Lenz & Sarens, 2012; Stewart and Subramaniam, 2010; Arena & Azzone, 2009; Gramling, Maletta, Schneider & Church, 2004). Through identifying, classifying, highlighting and summarizing key literature, and profile of IA research, it can help those who are new and unfamiliar with IA research to attain a greater understanding of the research domain. Additionally, it helps to imprints the geneses of IA research, language and type of publication that researchers and authors use to communicate (Dunbar and Weber, 2013). As a result of wide-range IA research themes and literature, this paper aims to provide a comprehensive and holistic outlook on the prior and current development and status of IA research that published in the Scopus database. Consequently, it is hope that the research finding that emphasis on meta-analysis knowledge and analytical pattern analysis will enable future researchers to identify new direction and new research opportunities.

## 2. METHODS

In this study, data related to internal audit studies were gathered and retrieved from Scopus database. The Scopus database has been used as it is the largest database compared to Web of Science (Falagas, M. E., et al., 2007). The study employed a bibliometric technique in analyzing and identifying the relevant research in the IA domain that categorized by title, keyword, type of documents, authors, journals, growth of publications, research productivity and countries. For the purpose of this study, we focused on all documents that related to the internal audit study based on its title. As such the following query has been conducted in the Scopus database: (TITLE ("internal audit" and "internal auditing")) on 12<sup>th</sup> October 2018. This query yielded a total of 557 documents for us to further analyse.

## 3. ANALYSIS AND FINDINGS

All of the data including articles and documents obtained through the SCOPUS database on the 12th of October 2018 have been accessed and analyzed by the type of document, source type, year of publications, subject area, keywords, geographical distribution of publications and number of author. Most of the findings have been presented in form of frequency and percentage. For annual growth, we presented data as number of retrieved documents per year including their frequency, percentage and cumulative percentage until October 2018.

### 3.1 Document and Source Types

Data acquired are firstly being analysed based on its document types and source type. Document types look up the types of document based on the originality of the documents such as article, conference paper, review, note, book chapter and etc. On the other hand, source type refers to the type of source documents weather it is journal, conference proceedings, book series, book or trade publication. The conference papers that appeared under document type were different from those that appeared under source type [X]. In document type, conference papers are papers that have been presented in conferences and probably were published as full journal articles. Conversely, several conference papers were published either as conference proceedings or book chapter under source type even if the document type originated from conference paper.

Table 1. Document Type

Document Type	Frequency	%
Article	435	78.10
Conference Paper	56	10.05
Review	33	5.92
Note	10	1.80
Article in Press	8	1.44
Book Chapter	4	0.72
Short Survey	4	0.72
Book	3	0.54
Editorial	3	0.54
Conference Review	1	0.18
<b>Total</b>	<b>557</b>	<b>100.00</b>

This study discovered 10 types of documents that have been published related to IA comprising article, conference paper, review, note, article in press, book chapter, short survey, book, editorial and conference review. Table 1 shows more than two-third of the total publications are derived from article representing 435 (78.10%)

documents, followed by conference paper 56 (10.05%) and review 33 (5.92%). The other type of documents represents less than 5% of the total publication each. Whereas under source type, (see Table 2) there are five types of sources and journal was found to be the highest type of source 472 (84.74%) followed by conference proceedings 48 (8.62%). Trade publication, books and book series represent less than 5% of the total publication on IA study.

**Table 2.** Source Type

Source Type	Frequency	%
Journals	472	84.74
Conference Proceedings	48	8.62
Trade Publications	26	4.67
Books	7	1.26
Book Series	4	0.72
<b>Total</b>	<b>557</b>	<b>100.00</b>

### 3.2 Year of Publications

The growth on the IA related publication was a little bit slow until 2008 and since then the average of publication per year were recorded more than 20 documents per year. The highest productivity was observed in 2017 with a total of 50 (8.62%) and it is expected to have a better performance in year 2018. The details statistic about the research published on IA is summaries in Table 3.

**Table 3.** Year of Publications

Year	Frequency	%	Cumulative Percent	Year	Frequency	%	Cumulative Percent
1958	1	0.18	0.18	1995	5	0.90	13.11
1960	1	0.18	0.36	1996	10	1.80	14.90
1965	1	0.18	0.54	1997	18	3.23	18.13
1970	1	0.18	0.72	1998	6	1.08	19.21
1971	2	0.36	1.08	1999	6	1.08	20.29
1973	1	0.18	1.26	2000	5	0.90	21.18
1974	2	0.36	1.62	2001	6	1.08	22.26
1975	2	0.36	1.97	2002	6	1.08	23.34
1977	2	0.36	2.33	2003	8	1.44	24.78
1978	1	0.18	2.51	2004	5	0.90	25.67
1979	1	0.18	2.69	2005	5	0.90	26.57
1980	3	0.54	3.23	2006	14	2.51	29.08
1982	2	0.36	3.59	2007	13	2.33	31.42
1984	1	0.18	3.77	2008	15	2.69	34.11
1985	2	0.36	4.13	2009	26	4.67	38.78
1986	5	0.90	5.03	2010	27	4.85	43.63
1987	2	0.36	5.39	2011	28	5.03	48.65
1988	4	0.72	6.10	2012	31	5.57	54.22
1989	4	0.72	6.82	2013	35	6.28	60.50
1990	3	0.54	7.36	2014	37	6.64	67.15
1991	8	1.44	8.80	2015	48	8.62	75.76
1992	3	0.54	9.34	2016	39	7.00	82.76
1993	5	0.90	10.23	2017	50	8.98	91.74
1994	11	1.97	12.21	2018	46	8.26	100.00
<b>Total</b>	<b>557</b>	<b>100.00</b>		<b>Total</b>	<b>557</b>	<b>100.00</b>	

### 3.3. Subject Area

In relation to publication subject area, the majority of retrieved documents were published in the area of Business, Management and Accounting indicating 30.21% (303) of the total articles followed by Economics, Econometrics and Finance representing 23.63% (237). Table 4 above exhibits details about subject area of IA study.

**Table 4.** Subject Area of the Documents

Subject Area	Frequency	%
Business, Management and Accounting	303	30.21
Economics, Econometrics and Finance	237	23.63
Social Sciences	80	7.98
Medicine	73	7.28
Engineering	70	6.98
Computer Science	65	6.48
Decision Sciences	42	4.19
Materials Science	20	1.99

Arts and Humanities	17	1.69
Nursing	13	1.30
Pharmacology, Toxicology and Pharmaceutics	13	1.30
Mathematics	12	1.20
Biochemistry, Genetics and Molecular Biology	11	1.10
Energy	8	0.80
Environmental Science	7	0.70
Agricultural and Biological Sciences	6	0.60
Multidisciplinary	5	0.50
Physics and Astronomy	5	0.50
Chemistry	3	0.30
Health Professions	3	0.30
Earth and Planetary Sciences	2	0.20
Immunology and Microbiology	2	0.20
Psychology	2	0.20
Undefined	2	0.20
Chemical Engineering	1	0.10
Neuroscience	1	0.10
Total	1003	100.00

### 3.4 Keywords Analysis

Keywords such as internal audit, internal auditing, internal audit function, corporate governance, assurance article, human, risk management, quality control, medical audit, management, audit committee internal control and audit were most encountered author keywords after exclusion of the core keywords related to search query (see Table 5).

**Table 5.** Keywords

Rank	Keyword	Frequency
1	Internal Audit	194
2	Corporate Governance	60
3	Internal Auditing	58
4	Assurance Article	52
5	Human	39
6	Risk Management	38
7	Quality Control	34
8	Medical Audit	32
9	Internal Audit Function	29
10	Management	28
11	Audit Committee	26
12	Internal Control	22
13	Audit	20
14	Humans	18
15	United States	17
16	Internal Audit Quality	16
17	Organization And Management	15
18	Priority Journal	15
19	Standard	15
20	Standards	15

### 3.5 Geographical Distribution of Publications

Table 6 shows top 20 countries contributed to the publication on IA. The United States of America (USA) ranked first with a total of 138 (24.78%) documents followed by the United Kingdom (UK) (42: 7.54%), Australia (39: 7%) and Malaysia (27: 4.85%).

**Table 6.** Top 20 Countries contributed to the publications on Internal Audit

Rank	Country	Frequency	%
1	United States	138	24.78
2	United Kingdom	42	7.54
3	Australia	39	7.00
4	Malaysia	27	4.85
5	China	19	3.41
6	Romania	18	3.23
7	Germany	17	3.05
8	Indonesia	16	2.87
9	South Africa	15	2.69
10	Belgium	12	2.15

11	Canada	12	2.15
12	Italy	11	1.97
13	Netherlands	10	1.80
14	Thailand	10	1.80
15	France	9	1.62
16	Saudi Arabia	9	1.62
17	New Zealand	8	1.44
18	Russian Federation	8	1.44
19	Greece	7	1.26
20	Serbia	7	1.26

### 3.6 Number of Author

The number of author per documents is listed in Table 7. A total of 204 (36.6%) documents were single-authored publications while the remaining documents (353: 63.4%) were multi-authored publications.

**Table 7.** Number of Author(s) per Document

Author Count	Frequency	Percent
0*	3	0.5
1	204	36.6
2	147	26.4
3	124	22.3
4	56	10.1
5	12	2.2
6	4	0.7
7	4	0.7
8	2	0.4
10	1	0.2
Total	557	100

\*Author cannot be verified

## 4. DISCUSSION AND CONCLUSION

In this study, bibliometric statistics of literature in IA were sought and finding shown literature in IA were dominated by multi-authored publications. The United States ranked first in productivity; follow by United Kingdom, Australia and Malaysia. In relation to the publication subject areas, Business, Management and Accounting and Economics, Econometrics and Finance were listed as a top choice of publication area. The volume of literature in IA showed a significant increase since 2009. The study contributes to the existing literature recapped above by demonstrating the scientific bibliometric landscape of IA research and underline pertinent subject areas bestowed through the lens of the research and publication community. In addition, the study may assist future researchers to portray a direction and potential opportunities for future research. Despite the contribution made, the study had few limitations that are inherent to the database used and to search query developed by the authors. Even though the Scopus is one of the largest databases, it also subject to unindexed journals that might have been overlooked as a publication. In addition, the standing of authors and affiliate institutions presented in the study might have or used more than one name or different name spelling. This might lead to inaccurate data in the productivity of these institutions or authors.

## REFERENCES

- Arena, M., & Azzone, G. (2009), Identifying organizational drivers of internal audit effectiveness, *International Journal of Auditing*, Vol. 13, No. 1, pp. 43-60.
- Falagas, M. E., Pitsouni, E. I., Malietzis, G. A., & Pappas, G. (2008). Comparison of PubMed, Scopus, Web of Science, and Google Scholar: strengths and weaknesses. *The FASEB Journal*, 22(2), 338-342. <https://doi.org/10.1096/fj.07-9492LSF>
- Gramling, A. A., Maletta, M. J., Schneider, A., & Church, B. K. (2004), 'The role of the internal audit function in corporate governance: a synthesis of the extant internal auditing literature and directions for future research', *Journal of Accounting Literature*, Vol. 23, pp. 192-244.
- The Institute of Internal Auditors (The IIA) (1999). *International Standards for the Professional Practice of Internal Auditing*, Altamonte Springs, FL.
- IIA (2013), *Rethinking the Future of Audit - Internal Audit is at a Crossroads*, The Institute of Internal Auditors, The Austin Chapter Research Committee, March.
- Lenz, R., & Hahn, U. (2015). A synthesis of empirical internal audit effectiveness literature pointing to new research opportunities. *Managerial Auditing Journal*, 30, 5-33.
- Lenz, R., & Sarens, G. (2012), Reflections on the Internal Auditing Profession: What might have gone wrong? *Managerial Auditing Journal*, Vol. 27, No. 6, pp. 532-549.
- Prawitt, D. F., Smith, J. L., & Wood, D. A. (2009). Internal audit quality and earnings management, *The accounting review*, Vol. 84, No. 4, pp. 1255-1280.

Stewart, J., & Subramaniam, N. (2010). Internal audit independence and objectivity: emerging research opportunities. *Managerial Auditing Journal*, 25, 328-360.