

# Risk in Accounting Research: Findings from Trend Analysis

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This article aims to present the use and applications of 'risk' in accounting research during last five years (2015-19). This study has extracted 598 journal articles from 66 dedicated 'accounting' journals having 'risk' mentioned as a keyword having cumulative citations of 2407. These articles were extracted from Scopus indexing services. Analyses were made using Microsoft Excel and SPSS. Many trends can be witnessed from the data; (1) The trend of articles published on 'risk' in dedicated accounting journals is increasing over the last five years; (2) Three publishers Elsevier, Emerald and the American Accounting Association emerged as the highest number of publication and citations on this issue; (3) The USA emerged as a major source country for publications and citations on this subject area. The paper provides a research guideline for early stage researchers to choose the topic, select the keywords, and select the co-authors. It also cites the work of individual researchers and universities for collaboration purposes.

**Key words:** *Accounting, Management Accounting, Auditing, Risk, Risk Management*

## Introduction

During the last two decades the world has witnessed mega corporate scandals including *Enron* – 2001 (Bratton, 2001; Moffett, 2004), *Worldcom* – 2002 (Kaplan & Kiron, 2004; Scharff, 2005; Gollakota, & Gupta, 2009), *Tyco* – 2002 (Pillmore, 2003), *Healthsouth* – 2003 (Smith, 2013; Daigle, Louwers, & Morris, 2013), *Freddie Mac* – 2003 (Duffie & Yurday, 2004; Jickling, 2005), *American International Group (AIG)* – 2005 (Lynch, & Hawkins, 2011), *Lehman Brothers* – 2008 (Harris, 2012; Maedler & Etten, 2013), *Bernie Madoff* – 2008 (Pozen, 2009), and *Satyam* – 2009 (Vishwanath, & Narapareddy, 2014). Two important observations can be made here; (a) all of them were linked to the accounting and auditing profession; and (b) poor risk management practices were the major source of all issues. The situation was also fueled by the *world financial crisis – 2008* (Nelson, & Katzenstein, 2014)

and attracted more attention towards 'risk' in accounting profession and research. Since then, 'risk' has gathered more attention in accounting research academic and practice.

For the last two decades events have intensified the interest in risk; particularly it focuses on the 'Risk Ecosystem' that operate to manage risk and the outcomes of risk management (Scheytt, Soin, Sahlin-Andersson, & Power, 2006). Nevertheless, the interest in risk response and risk mitigating strategies are growing, and organizational 'Risk Ecosystems' are better equipped. Many factors may be attributed to the growing interest of academics in the 'Risk' and 'Risk Ecosystem' in accounting research and these factors may be classified into three broad categories; (a) Legal; (b) Organizational; (c) Performance. There is a growing trend towards world-wide government legal regulations utilizing risk based regulatory approaches that focus on tighter internal control mechanisms and the adoption of ISO31000 as the international risk management standard (Soin, & Collier, 2013). Secondly, great emphasis has been laid down by the senior management in every organization on identifying, assessing, treating and monitoring risks as well as evaluating the effectiveness of management controls to manage risk (Ismail, & Rahman, 2011). Thirdly and probably most importantly, organizations have realized that accounting, risk management and organizational performance are linked together (Bowden, Lane, & Martin, 2002; Charkhab, Eslami, & Dehnavi, 2014).

## Literature Review

There is no universally accepted definition of 'Risk'; different researchers have defined risk in view of the application of risk. However, the concept of risk is used as an expected value, a probability distribution, as uncertainty and as an event (Aven, & Renn, 2009). The international risk management standard ISO31000 (ISO, 2009) defines risk as 'the effect of uncertainty on achieving objectives; with risk management being the set of principles, frameworks and processes for managing risk'. It further shifted the focus to a more holistic appreciation of risk in the form of Enterprise Risk Management (COSO, 2004). This has serious implications for accounting researchers and practitioners, especially those concerned with management control.

Literature suggest that Risk can defined in two ways (Aven, & Renn, 2009). Firstly "Risk is expressed by means of probabilities and expected values". It includes "... equals the expected loss" (Willis, 2007); "... equals the expected disutility" (Campbell, 2005); "... is the probability of an adverse outcome (Graham & Weiner, 1995); "... is the combination of probability of an event and its consequences" (ISO, 2002); and "... as a set of scenarios, each of which has a probability, and a consequence (Kaplan, 1991). Secondly, "Risk is expressed through events/consequences and uncertainties". It includes "... is equal to the two-dimensional combination of consequences and associated uncertainties" (Aven, 2007); "... refers to uncertainty of outcome, of actions and events" (Cabinet Office 2002); "... is a situation or event where something of value is at stake and where the outcome is uncertain" (Rosa, 1998).

## Methodology

The purpose of this bibliometric study is to analyze and present major trends in ‘risk management’ practices exhibited by accounting journals during the last five years. To fulfill the aim, a multi-tier, multi-stage data collection and data analysis approach has been adopted in this research. Firstly, a list of dedicated accounting journals was generated from Scopus indexing services. The search was limited to journal article publications in the English language having ‘Risk’ as the keyword and published during last five years (2014-19). The search has resulted 66 journals which published 598 articles during the same period (Table 1). In order to capture the most relevant information content analysis was used by carefully examining the published articles. Although various facts were recorded for each article, for the purpose of this research, most important are the subject area, the author’s profile and the institution where the research has been conducted. Data analysis was divided into five parts. First of all, number of researches produced each year were analyzed with cumulative citations (Table 1). Secondly most cited articles were identified (Table 3). Thirdly and fourth most frequent and cited countries (Table 4) and universities (Table 5) were identified. For countries and universities contributions were analyzed instead of publications. Contribution may be defined as the share of individual author for each publication. Rationale for using contributions instead of publications is due to different affiliations of authors in terms of different universities or different countries in case of multiple authors. Finally, most cited authors contributing the most to the research area were identified. Statistical software SPSS and Microsoft Excel were extensively used in the analysis phase.

**Table 1: List of ‘Accounting’ journals published articles on ‘Risk’ (2015-2019)**

No.	Title of Journal	Number of Publications						Total citations
		2015	2016	2017	2018	2019	Total	
1	Review of Quantitative Finance & Accounting	6	8	12	14	25	65	210
2	Accounting & Finance	4	4	7	9	14	38	144
3	Journal of Business Finance & Accounting	6	7	8	4	7	32	104
4	Accounting Review	12	3	6	5	2	28	378
5	Journal of Accounting & Economics	6	6	2	3	3	20	296
6	Academy of Accounting & Financial Studies Journal	0	0	1	10	9	20	9
7	Asia-Pacific Journal of Accounting & Economics	1	2	2	3	11	19	28
8	Review of Accounting Studies	2	4	7	1	4	18	97
9	Journal of Accounting Research	2	3	5	2	5	17	149
10	Journal of Applied Accounting Research	3	3	2	5	4	17	58
11	Review of Accounting & Finance	2	4	2	4	4	16	37
12	Journal of Accounting, Auditing & Finance	3	3	2	2	6	16	33
13	British Accounting Review	1	1	9	1	3	15	123
14	Accounting Horizons	3	4	4	2	2	15	71
15	Advances in Accounting	1	3	3	4	1	12	28
16	Journal of Contemporary Accounting & Economics	0	1	3	5	2	11	19

17	Journal of Islamic Accounting & Business Research	1	1	3	3	3	11	15
18	Accounting & Business Research	1	1	2	2	3	9	23
19	Journal of Management Accounting Research	1	3	1	2	2	9	20
20	International Journal of Accounting & Information Management	2	3	1	0	2	8	41
21	Accounting Forum	2	0	1	1	4	8	37
22	Afro-Asian Journal of Finance & Accounting	1	2	3	0	2	8	10
23	Journal of Accounting & Public Policy	0	0	1	3	4	8	7
24	Asian Academy of Management Journal of Accounting & Finance	1	2	1	2	2	8	6
25	Issues in Accounting Education	0	3	1	2	2	8	6
26	International Journal of Banking, Accounting & Finance	1	2	2	1	2	8	5
27	Accounting Research Journal	1	1	3	2	1	8	4
28	Accounting, Organisations & Society	1	1	1	4	0	7	38
29	Intelligent Systems in Accounting, Finance & Management	0	3	2	2	0	7	21
30	Australasian Accounting, Business & Finance Journal	1	1	4	1	0	7	18
31	Asian Review of Accounting	1	1	2	2	1	7	6
32	International Journal of Accounting	1	4	0	0	1	6	46
33	International Journal of Accounting Information Systems	2	1	0	2	1	6	46
34	Journal of Emerging Technologies in Accounting	0	2	2	2	0	6	9
35	China Journal of Accounting Studies	0	0	2	1	3	6	1
36	Journal of Accounting Education	1	1	0	1	3	6	1
37	Management Accounting Research	1	1	2	1	0	5	41

**Table 1: List of ‘Accounting’ journals published articles on ‘Risk’ (2015-2019) (Continued)**

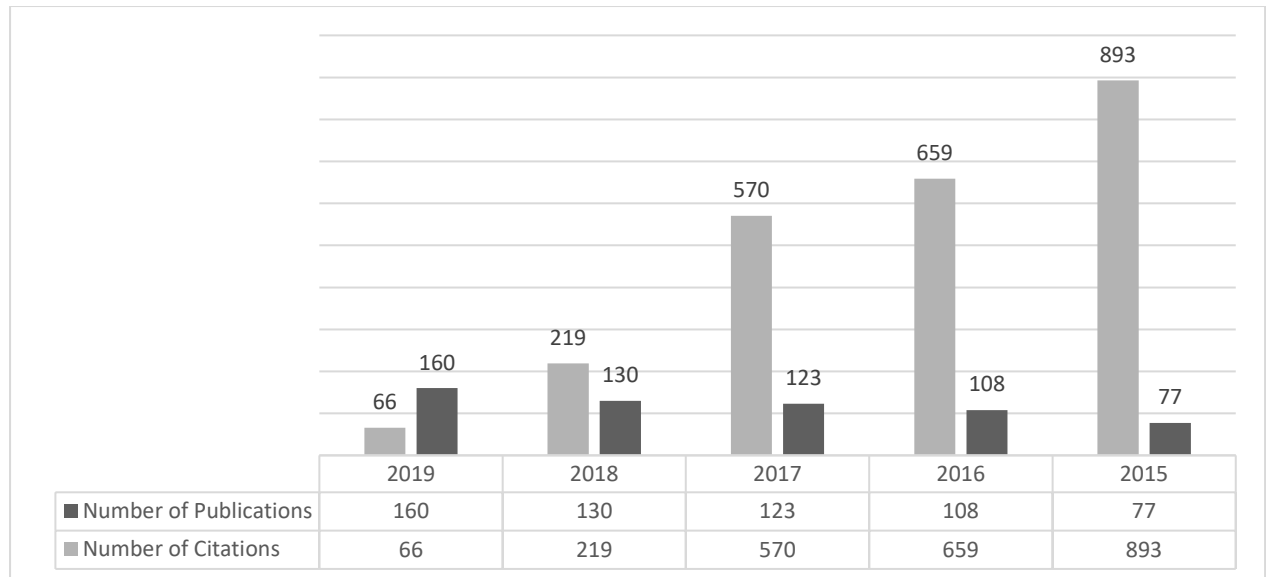
No.	Title of Journal	Number of Publications					Total	Total citations
		2015	2016	2017	2018	2019		
38	Critical Perspectives on Accounting	1	0	1	2	1	5	30
39	Pacific Accounting Review	0	2	0	1	2	5	9
40	Asian Journal of Business & Accounting	1	2	0	1	1	5	6
41	Journal of International Financial Management & Accounting	0	0	0	2	3	5	4
42	European Accounting Review	0	0	0	0	5	5	1
43	International Journal of Accounting, Auditing & Performance Evaluation	0	0	0	2	3	5	0
44	Accounting, Auditing & Accountability Journal	0	0	4	0	0	4	47
45	Sustainability Accounting, Management & Policy Journal	0	3	0	0	1	4	36
46	China Journal of Accounting Research	1	1	0	1	1	4	15
47	Journal of Accounting Literature	0	1	0	2	1	4	9
48	Accounting Perspectives	0	1	2	1	0	4	8
49	Behavioural Research in Accounting	0	2	1	1	0	4	8
50	Accounting in Europe	0	1	0	2	1	4	2
51	Journal of International Accounting Research	0	0	1	2	0	3	7
52	Journal of International Accounting, Auditing & Taxation	1	0	1	1	0	3	7

53	International Journal of Managerial & Financial Accounting	0	0	2	0	1	3	3
54	Contemporary Accounting Research	1	0	1	0	0	2	10
55	Journal of Accounting & Organizational Change	0	2	0	0	0	2	9
56	Journal of Environmental Accounting & Management	0	0	0	1	1	2	0
57	Accounting History Review	0	1	0	0	0	1	4
58	Qualitative Research in Accounting & Management	0	1	0	0	0	1	2
59	Research in Accounting Regulation	1	0	0	0	0	1	2
60	Revista de Contabilidad-Spanish Accounting Review	0	1	0	0	0	1	2
61	Journal of Financial Reporting & Accounting	0	0	0	1	0	1	1
62	Advances in Accounting Education: Teaching & Curriculum Innovations	0	1	0	0	0	1	0
63	Advances in Public Interest Accounting	0	0	1	0	0	1	0
64	International Journal of Digital Accounting Research	0	0	0	1	0	1	0
65	Journal of Accounting in Emerging Economies	0	0	0	0	1	1	0
66	Journal of Accounting Review	0	0	0	1	0	1	0
	Total	77	108	123	130	160	598	2407

## Findings and Discussion

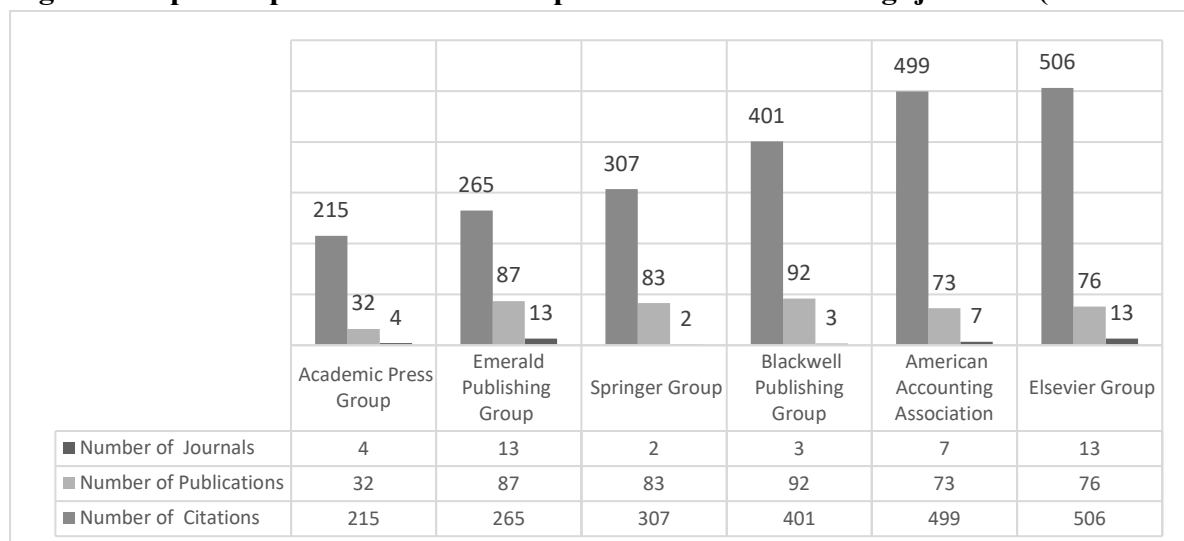
The first analysis was focused on the yearly publication trend over the selected period. Figure 1 indicates the number of publications and number of citations for journal articles published in dedicated accounting journals with at least one keyword as ‘Risk’. A total of 598 articles were published during the period with a cumulative citation of 2407. There is continuous increasing trend for the number of publications during the period; it rose from 77 in 2015 to 170 in 2019; approximately more than doubled in just five years. This shows an increase in interest towards research ‘risk’ related issue in accounting and auditing domain. Secondly, the graph shows that the highest citations were made from journal articles published in 2015 and then it gradually decreased. This is more meaningful as it takes some time to get citations even for very good article publications.

**Figure 1 Year-wise summary of published articles on ‘Risk’ in ‘Accounting’ journals (2015-2019)**



Publishers play an important role in academic research and different publishers have different strategies to pursue their selected academic interests. To expedite the role of publishers in current research, a publisher-wise analysis was made (Figure 2). Elsevier and Emerald groups published the highest number of journals on Accounting research i.e., 13 journals from each publisher. For number of citations Elsevier and American Accounting Association topped the list with 506 and 499 citations on the subject area. Here it is worth mentioning the focus of Black-well publishing and Springer publishing groups; with only 2 and 3 journals they were able to manage 82 and 93 publications respectively on the subject area while securing 302 and 401 citations as well.

**Figure 2 Top cited publishers on ‘Risk’ published in ‘Accounting’ journals (2015-2019)**



In order to provide a further detailed picture of the country of origin for such research, a country-wise analysis of these researches was made (Table 2). Overall, the USA is the country contributing with the highest number of contributions and the highest number of citations are attributed towards publications/contributions originated from USA. More than half of the contributions are alone originated from USA. In terms of percentage no other country is competing with the USA for publishing researches in the selected journals. Countries like the UK, Australia, Canada and China are the main countries contributing to these researches. The other countries like Italy, Hing Kong Canada, Taiwan, Malaysia, Germany are also publishing the researches in the domain of Risk and Accounting. There are several other countries in the list like Pakistan, Spain, Korea, Hong Kong and Italy etc. Although these countries are publishing less in the areas of risk and accounting, their presence indicates that the research domains of risk and insurance are quite popular around the globe.

**Table 2: List of top cited countries with articles on ‘Risk’ in ‘Accounting’ journals (2015-2019)**

No.	Country	Year-wise number of contributions					Number of contributions	Number of citations for contributions
		2015	2016	2017	2018	2019		
1	<b>USA</b>	78	86	83	91	109	447	2647
2	<b>UK</b>	15	10	27	32	32	116	541
4	<b>Australia</b>	14	21	18	22	17	92	512
5	<b>Canada</b>	1	7	13	19	9	49	215
8	<b>Hong Kong</b>	3	4	6	3	14	30	202
3	<b>China</b>	6	4	15	23	61	109	159
9	<b>Italy</b>	1	7	9	8	3	28	101
6	<b>Taiwan</b>	10	2	11	10	10	43	94
7	<b>Malaysia</b>	7	4	5	12	9	37	48
10	<b>Germany</b>	1	3	6	4	11	25	42

Further analyses were made to determine the contribution of various universities and institutions in publishing the selected research area. Since it is normal to have several researchers from different universities co-authoring an article, a raw count by the author’s affiliation would result in multiple counts and therefore, ‘contributions’ were used instead of publications. Table 3 provides the list of top 10 universities/institutions contributing to the nexus of risk and accounting from 2015 to 2019. A total of 750 universities and institutions published articles on this issue. Top publishing universities on this issue include City University of Hong Kong (11) and California state University (10), but the University of Southern California (6) and New York University (5) had the highest citations 97 and 92 citations respectively.

**Table 3: List of top cited universities on ‘Risk’ published in ‘Accounting’ journals (2015-2019)**

No.	University	Country	Number of contributions	Number of citations for contributions
1	University of Southern California	USA	6	97
2	New York University	USA	5	92
3	University of Chicago	USA	3	89
4	University of North Carolina	USA	2	85
5	University of Michigan	USA	5	84
6	Arizona State University	USA	3	81
7	City University of Hong Kong	Hong Kong	11	72
8	Hong Kong University of Science & Technology	Hong Kong	1	72
9	Santa Clara University	USA	1	72
10	University of Illinois	USA	6	72

Historically, authors form the backbone of the research institutions and hence always considered as the jewels of any university. Further analyses were made to present the contribution of various authors in publishing risk related research in accounting research journals. Table 4 enlists the top authors based on the number of citations for the specified research area. For the purpose of reporting, we only selected authors with 3 or more publications in the selected years. Dr Mark DeFond from the University of Southern California is at the top of list with a single publication with 92 citations. According to Scopus indexing service, Dr. Defond has more than 43 publications with 7200+ citations over 27 years of an illustrious academic career. Other top cited authors in the list include Dr Christopher Williams, University of Michigan, USA (82 citations) and Dr Siqi Li, Santa Clara University, USA (74 citations). In terms of number of publications on the subject areas in the specified time frame (2015-2019), Dr Jeong-Bon Kim had 8 publications with 61 citations.

**Table 4: List of top cited authors on ‘Risk’ published in ‘Accounting’ journals (2015-2019)**

No.	Authors	Affiliation	Number of Publications	Number of Citations
1	DeFond M.	University of Southern California, USA	2	93
2	Williams C.	University of Michigan, USA	3	82
3	Li S.	Santa Clara University, USA	3	74
4	Hung M.	Hong Kong University of Science and Technology, Hong	1	72
5	Li Y.	Arizona State University, USA	4	72
6	Gallemore	University of Chicago, USA	1	68
7	Labro E.	University of North Carolina, USA	1	68
8	Judd J. S.	University of Illinois at Chicago, USA	2	64



9	<b>Bushman</b>	University of North Carolina-Chapel Hill, USA	3	61
10	<b>Kim J.- B.</b>	University of Waterloo, Canada	8	61

Analyses also include top cited articles on the subject area (Table 5). It includes an article titled as “Does mandatory IFRS adoption affect crash risk?”; “The importance of the internal information environment for tax avoidance”; Audit fees and social capital”. All three articles were published in 2015 and secured 72, 68 and 58 citations respectively.

**Table 5: List of top cited articles on ‘Risk’ published in ‘Accounting’ journals (2015-2019)**

No.	Title	Author's Name & Affiliation	Source title	Year	Citations
1	<b>Does mandatory IFRS adoption affect crash risk?</b>	DeFond M.L., University of Southern California, USA	Accounting Review	2015	72
		Hung M., Hong Kong University of Science and Technology, Hong Kong			
		Li S., Santa Clara University, USA			
		Li Y., Arizona State University, USA			
2	<b>The importance of the internal information environment for tax avoidance</b>	Gallemore J., University of North Carolina, USA	Journal of Accounting and Economics	2015	68
		Labro E., University of Chicago, USA			
3	<b>Audit fees and social capital</b>	Jha A., Texas A&M International University, USA	Accounting Review	2015	58
		Chen Y., Texas A&M International University, USA			
4	<b>Customer concentration risk and the cost of equity capital</b>	Dhaliwal D., Korea University Business School, South Korea	Journal of Accounting and Economics	2016	56
		Judd J.S., University of Arizona, USA			
		Serfling M., University of Illinois at Chicago, USA			
		Shaikh S., University of Tennessee, USA			
5	<b>Financial statement comparability and expected crash risk</b>	Kim J.-B., University of New South Wales, Australia	Journal of Accounting and Economics	2016	42
		Li L., University of Waterloo, Canada			
		Lu L.Y., Australian National University, Australia			
		Yu Y., City University of Hong Kong, Hong Kong			
6	<b>Delayed Expected Loss Recognition and the Risk Profile of Banks</b>	Bushman R.M., University of Michigan, USA	Journal of Accounting Research	2015	40
		Williams C.D., University of North Carolina-Chapel Hill, USA			
7	<b>Abnormal real operations, real earnings management, and subsequent crashes in stock prices</b>	Francis B., Fordham University, New York, USA	Review of Quantitative Finance and Accounting	2016	37
		Hasan I., Rensselaer Polytechnic Institute, New York, USA			
		Li L., State University of New York-Old Westbury, USA			
8	<b>Rating agency adjustments to GAAP financial statements and their effect on ratings and credit spreads</b>	Kraft P., New York University, USA	Accounting Review	2015	37
9	<b>Is tax avoidance related to firm risk?</b>	Guenther D.A., Indiana University Bloomington, USA	Accounting Review	2017	35
		Matsunaga S.R., University of Oregon, USA			

		Williams B.M., Indiana University Bloomington, USA			
10	<b>What drives mandatory and voluntary risk reporting variations across Germany, UK and US?</b>	Elshandidy T., The University of Stirling, UK	British Accounting Review	2015	34
		Fraser I., The University of Bristol, UK			
		Hussainey K., The University of Plymouth, UK			

Table 6 indicates frequencies of the keyword categories and in each category, the top three keywords with frequencies. Eight keyword categories emerged as major contributors and include (a) Financial (640); (b) Accounting (196); (c) Technological (61); (d) Regulatory (56); (e) Legal (71); (f) Organizational (139); (g) Business Process (219); (h) Risk Process (114).

**Table 6: List of top keyword categories and keywords with frequencies related to ‘Risk’ published in ‘Accounting’ journals (2015-2019)**

Keyword Category	Frequency	Keyword	Frequency
<b>Financial</b>	640	Credit Rating	34
		Reporting	88
		Stock Crash	47
<b>Accounting</b>	196	Audit Risk	74
		Tax Risk	11
		Internal Control	8
<b>Technological</b>	61	Cybersecurity	17
		Information Disclosure	4
		IT Governance	5
<b>Regulatory</b>	56	Compliance	14
		Disclosure	6
		Policy	3
<b>Legal</b>	71	Litigation & Liability	14
		Labour Risk	6
		Contract Risk	4
<b>Organizational</b>	139	CEO Risks	18
		Board Of Directors	13
		Strategic Risks	9
<b>Business Process</b>	219	ERM	22
		BP Control	14
		Operational Performance	12
<b>Risk Process</b>	114	Risk Aversion	9
		Risk Taking	7
		Risk Assessment	8

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## Summary and Conclusions

The purpose of this bibliographic study is to present the nexus of ‘risk’ and ‘accounting’ research for last five years (2015-19). This study has extracted journal articles from dedicated ‘accounting’ journals having ‘risk’ mentioned as the keyword. As a result, 598 journal article publications from 66 journals having cumulative citations of 2407, were extracted from the Scopus indexing services. Analyses were made using Microsoft Excel and SPSS. Many trends can be witnessed from the data. Firstly, the number of articles having focus on ‘Risk’ published in dedicated accounting journals are increasing; highest citations were made from journal articles published in 2015. Thirdly two publishing groups namely Elsevier and Emerald groups published the highest number of journals on Accounting research. Fourth, two publishing groups Elsevier and American Accounting Association secured the highest citations on the subject area. Fifth, the USA is the country contributing the highest number of contributions and the highest number of citations for this subject area. More than half of the contributions and citations were originated from USA alone. Sixth, credit for highest number of contributions goes to the City University of Hong Kong and California state University but the University of Southern California and New York University had the highest number of citations. Seventh, Dr Mark DeFond emerged as the highest citable author for the subject area and Dr Jeong-Bon Kim had the highest number of publications for the area under research. Eight, keywords titled as ‘Crash Risk’, ‘Risk’, ‘Risk Management’, ‘Credit Risk’ and ‘Enterprise Risk Management’ emerged as top citable keywords. The paper provides research guideline for early stage researchers to choose the topic, select the keywords, and select the co-authors. It also cites the work of individual researchers and universities for collaboration purposes.

## Managerial Implications

The role of accounting practitioners needs to shift towards a more strategic and proactive role rather than a reactive and passive traditional accounting role. This is only possible by embracing consideration of ‘risk’ in their professional responsibilities. This may require educational institutions teaching accounting to include risk management in their curriculum. This will improve the contributions by accounting graduates more significantly to their organizations for risk management.

As highlighted earlier nearly all big accounting and auditing scandals reported during last two decades were due to poor risk management practices. Even the world financial crisis – 2008 was also linked to poor risk application of accounting practices. This has attracted more attention towards ‘risk’ in the accounting profession and research. Since then ‘risk’ gets its center stage among accounting academicians and practitioners. Even ISO 31000, Risk management was announced in 2009 to provide a framework and a process for managing risk; AACSB has included Risk Assessment as an essential component for their accreditation process in Accounting programs. But IFRS still failed to provide a conceptual or practical

framework for risk management. Now practitioners and accounting academicians should focus on an accounting model that will enable investors to understand a company's dynamic risk management activities and to evaluate the effectiveness of those activities.

### **Need for further research**

Many items are listed on the need for further research. Firstly, the accounting profession has been changed over last few decades due to information technology and other compelling issues. This changing role of accounting research and practice is an important factor in establishing the context for their role in risk management and wider views of management control. Probably accounting professionals and practitioners are better equipped to identify, analyze, avoid, or mitigate the risks in organizations than any other group in organizations. Accounting research should take this case and link the risk management actions with different hierarchies of the organization without excluding accounting professionals. Secondly, a purely academic exercise is the development of 'standard constructs to measure risk in Accounting' and categorization of accounting risk factors into a limited number of areas. Thirdly, assignment of weights to these standard constructs for different industry sectors, as different industries might need to assign different weights to different risk categories or sub-categories. For example, (a) Information Technology sector might need relatively larger weight for 'Technical Risk' sub-category; (b) Unstable companies might need higher weightage for 'Business Continuity Risk'; (c) Food and beverages companies might need higher weights on 'Social & Cultural Risks'. Finally, and probably most importantly, the development of a standard measurement model for Risk assessment in Accounting research. This could be similar to the standard conceptual models of the Big-Five in Personality research or SERVQUAL in Service quality research etc.

### **Limitations**

It is worth mentioning here that these results should be considered as indicative; it does not represent the complete university research profile, since most of these universities have specialized risk and insurance units investigating mostly in these areas. Moreover, it is very likely that several universities have niches of research expertise that are not reflected in our results. Thus, caution should be exercised in interpreting these results. Another limitation is its dynamic nature of data. Daily publications and citations are increasing, and databases and indices are updated routinely on daily basis, so this research has data as on December 31, 2019.



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