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Article in *Asian Journal of Scientific Research* · February 2019

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Asian Journal of Scientific Research

ISSN 1992-1454

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Review Article

A Bibliometric Study of Accounting Information Systems Research from 1975-2017

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Abstract

Accounting Information Systems automates accounting information. In prior literature, there is no consensus as to research areas to be included or excluded from AIS researches, coupled with the relatively scarce literature on AIS. The objective of this paper was to quantitatively analyze the volume and impact of AIS literature. Research documents retrieved from the Scopus database were based on defined search terms relating to Accounting Information System (AIS). A bibliometric approach was employed to quantitatively analyze the volume and impact of 727 publications in the AIS research domain, this study focussed on determining the yearly distribution, national contributions, authorship patterns, leading prolific authors, productive institutions, publication outlets, documents types, key issues, citation trends of AIS research publication from 1975-2017. Key findings in this work indicated that there was no steady growth in volume of AIS research publication, Malaysia was the only developing country that featured as one of the top 10 national contributors to AIS research with China and Indonesia being the only emerging economies, also only 159 authors contribute to the 727 publications on AIS research, double authored publications had the highest number of publication as against others, only 5 of the top 10 outlets of AIS research were core accounting outlets, besides the obvious keywords of 'accounting information system', 'information system' keywords such as Internal Controls, Auditing, Regulatory Compliance, Management Control were the most dominant. While AIS adoption is becoming the mainstream in most developed countries, more investments in ICTs deployment and education will enable developing countries to reap the benefits of these innovations.

Key words: Accounting information system, AIS, bibliometrics, scientometrics, citation analysis

Received: October 31, 2018

Accepted: November 15, 2018

Published: March 15, 2019

Citation: Omotola Ezenwoke, Azubuikwe Ezenwoke, Damilola Eluyela and Olamide Olusanmi, 2019. A bibliometric study of accounting information systems research from 1975-2017. Asian J. Sci. Res., 12: 167-178.

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Competing Interest: The authors have declared that no competing interest exists.

Data Availability: All relevant data are within the paper and its supporting information files.

INTRODUCTION

Accounting Information Systems automates accounting information. The accounting information of an organization forms the basis on which financial reports are produced^{1,2}. Financial reporting is not limited to the mere recording of transactions or a conventional bookkeeping activity³ but actually delivers information about the entity to a variety of users to foster qualitative economic and financial decisions^{4,5}. Also, it can be manual or electronically generated⁶. However, with the advent of computers, financial reports are now mostly generated electronically.

The phenomenon 'Accounting Information System', is wide and multidisciplinary in nature. This largely accounts for the variety of influences received from disciplines such as management information system, computer science, psychology, economics and organizational behavior⁷. Computer science was identified to be the most predominant stream of AIS research theory⁸. Though, in recent times this no longer holds, as psychology and economics play significant roles in inspiring AIS research.

In prior literature, there is no consensus as to research areas to be included or excluded from AIS researches⁸, coupled with the relatively scarce literature on AIS, as a distinct domain from core information system discipline⁹. Thus, there is a growing motivation for accounting professionals to be abreast of the key issues, volume and impact of accounting information system research. This is also activated by swift changes in Information and Communication Technologies (ICTs) and tremendous interest of corporate entities to recruit individuals who are both accounting and ICT-savvy¹⁰.

Given the importance of a literature to clearly articulate the key issues, volume and impact of AIS research, it is surprising to find certain concerns associated with the current state of literature in this area. First, there are scanty and not up-to-date bibliometric studies on AIS. Scientometric, webometric, altmetric or bibliometric techniques are employed to provide an overview of the growth of scholarly knowledge^{11,12}. Bibliometrics analysis can also be seen as the science of the application of mathematical and statistical methods to quantitatively measure the volume and impact of scientific publications, thereby providing insight into the dimensions of any scholarly subject which in turn can be useful for the formulation of research policies¹². A bibliometric analysis of AIS research is useful in quantifying and articulating the overall perception of the AIS research domain. It is

employed to identify the pattern of publication, authorship, productive author, author affiliation, year-wise growth, citations and behaviour of a subject over a period of time and thereby offering insight into the dynamics of the area under study which in turn may help to formulate science policy. The second concern relates to the narrow scope considerations given to the scanty bibliometric studies on AIS research outputs. This is evident in scope limitation to specific journals in prior literature, e.g., Ferguson and Seow¹³, as well as, Poston and Grabski⁸. By increasing the scope of researches in AIS to other quality and impactful journals will help discover research gaps which are influential in informing new research areas.

To address concerns noted with prior literature, the objective of this study was to employ a bibliometric technique to quantitatively analyse the volume and impact of publications in the AIS research domain. For this study, the following research objectives were formulated: (1) To determine the yearly distribution of AIS publications since 1975-2017, (2) To study the profile national contributions to AIS research domain based on volume of scholarly works, (3) To reveal the authorship patterns and identify leading prolific authors in the field, (4) To identify the most productive institutions contributing to AIS research literature, (5) To outline the publication outlets of AIS research works, (6) To identify the varieties of documents types published by AIS researchers, (7) To identify the key issues addressed in AIS research and (8) To analyze the citation trends of AIS research publication over the period under review.

This study provides a perspective in understanding the state of AIS research and forms a basis to identify influential researchers, discover research gaps and opportunities, identify under-explored topics and study methodological issues in the subject domain. Consequently, the outcome of this study would, in turn, contribute to forming research agendas, guidelines and standards¹⁴.

The seminal work of Poston and Grabski⁸ provides the first visible literature on the analysis of AIS literature. The work reviewed research articles published between 1982 and 1998 in 17 leading journals in the following fields: Accounting, Accounting Information Systems, Management Information Systems and Computer Science. In their work, Poston and Grabski⁸ assessed the underlying theories and research methods used in AIS research. They concluded that AIS research is in its balanced phase of research progression as computer science dominates the AIS research theory, with a substantial growth in AIS research

that is psychology based. Subsequently, other works emerged in analyzing trends in AIS research^{7,13,15-17}.

To properly establish this study, a summary of the prior literature on the review and analysis of AIS researches was presented. Worrell *et al.*¹⁶ studied how the Delphi method is being used in accounting information research. The Delphi method is conceptualized as a way to scientifically evaluate opinions on a complex subject matter with the aim to reach a consensus where possible from a board of anonymous professionals¹⁸. Indications from AIS literature show that the Delphi method has not been used considerably, despite its enormous benefits and advantage over focus groups. Additionally, Hutchison *et al.*¹⁵ identify other eight research methods in other of prominence used in prior literature in core AIS journals to include; experiment, modelling, prescriptive, archival, descriptive, survey, case study and literature review. Similarly, Ardianto and Anridho¹⁷ conducted a bibliometric analysis of scholarly articles published between 2001-2015 in the journal, international journal of Digital Accounting Research. A conclusion from the study revealed that the survey research method was mostly employed by authors, institutions from USA, Spain and Australia largely contributes to the journal.

In furtherance to Poston and Grabski⁸ seminal work, Ferguson and Seow¹³ reviewed 395 articles in 18 leading AIS related journal between 1999 and 2009. Submissions from the review indicate that economics and psychology are prominent fields in AIS-related research, with experimental and empirical/archival research methods. While the role of computer science in theoretically motivating AIS research diminishes. Distinctively in the review, is the 43% increase in AIS related articles in top-ranked journals within 1999-2009? Hutchison *et al.*¹⁵ evaluated published articles in the first 10 volumes of the journals, *Advances in Accounting Information Systems (AiAIS)* and the *International Journal of Accounting Information Systems (IJ AIS)*. The result of the study revealed an increasing growth in the number of articles published annually, also, a substantial amount of citations within and outside the journal which was consistent over recent years of review.

BIBLIOMETRIC STUDY OF AIS

The data used to attend to the objectives outlined for this study was sourced from the Scopus Database. The Scopus database, launched in 2004, is the largest collection of scholarly published works with over 39,000 titles¹⁹. Specific

keywords that contained "Accounting", "Information" and "System" were formulated to retrieve relevant documents from the Scopus database. The search query used is framed thus: TITLE-ABS-KEY ("Accounting Information System*") AND (EXCLUDE (PUBYEAR, 2019) OR EXCLUDE (PUBYEAR, 2018)). The years, "2018" and "2019", were excluded because of the possibility of non-completeness of records as the time when the search was performed (October 11, 2018, 11:22 AM). The asterisk (*) used together with the system (as in system*) is a wildcard that allows for all variants of the term to be returned in the search results. The search returned documents that contain the search term in any of its Title, Keyword and Abstract.

A total of 727 documents met the search criteria and formed the Scopus used for the analysis performed in this study. The bibliometric data for the 727 documents included the following fields Author, Title and Year of publication, Source title (publication outlet), Citation count, Institutional Affiliations and territories, Abstract, Author Keywords, Publisher and Document Type. The extracted data were exported as a Comma Separated Version (CSV) file format for convenience and was accessed through the MS Excel application for further analysis; meanwhile, the data was also available at [<http://bit.ly/>].

Authors employed Google sheets and MS Excel for visualization and relevant statistical analysis of the dataset in line with the objectives set out for this study. To further unveil the trends of AIS research domain, a content analysis on the top 20 most cited publications was performed in this regards.

Yearly publication distribution: Based on the Scopus database used for this study, the first two research publications related to AIS research were published in 1975. The articles are titled "Conceptual Levels and the Design of Accounting Information Systems", authored by Miller and Gordon²⁰ and "The development and evaluation of a uniform hospital cost accounting information system", authored by Fane²¹. As shown in Fig. 1, there had been a nearly steady growth in the number of publications on the subject since 1975 and the highest number of publications yet was in 2017. It was also observed that there was a sharp decline from 79 publications in 2011 to 50 publications in 2012, then to 46 in 2013. Consistent with the study by Hutchison *et al.*¹⁵ the upward trend in AIS research before the crash in 2012 signal the continued interest of researchers to disseminate their work. However, despite the crash in 2012, there was still that continued increase in the volume of publication following:

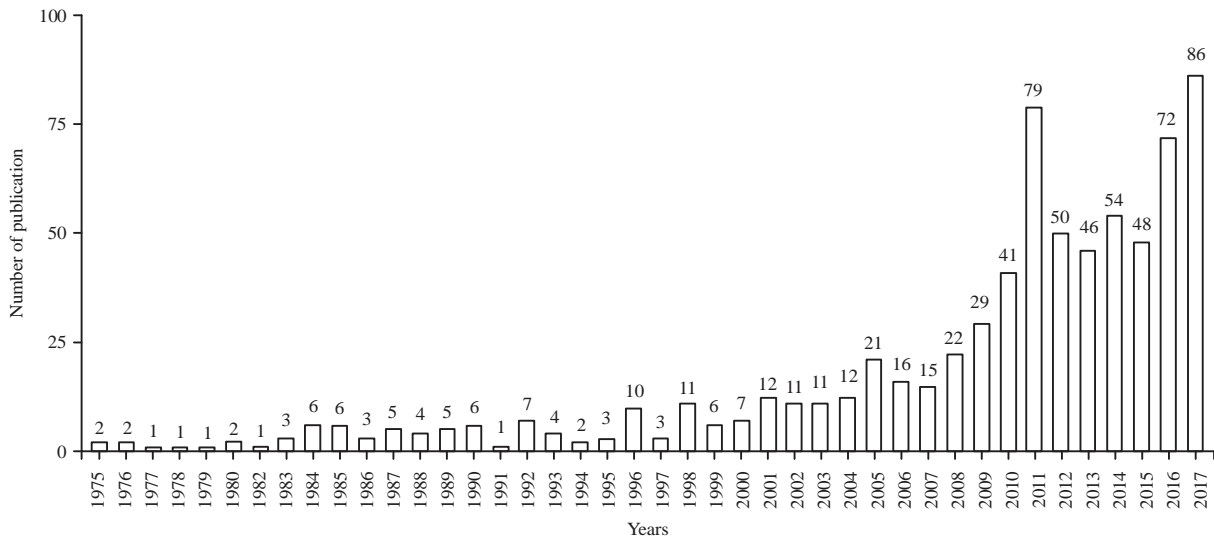


Fig. 1: Yearly distribution of AIS research since 1975

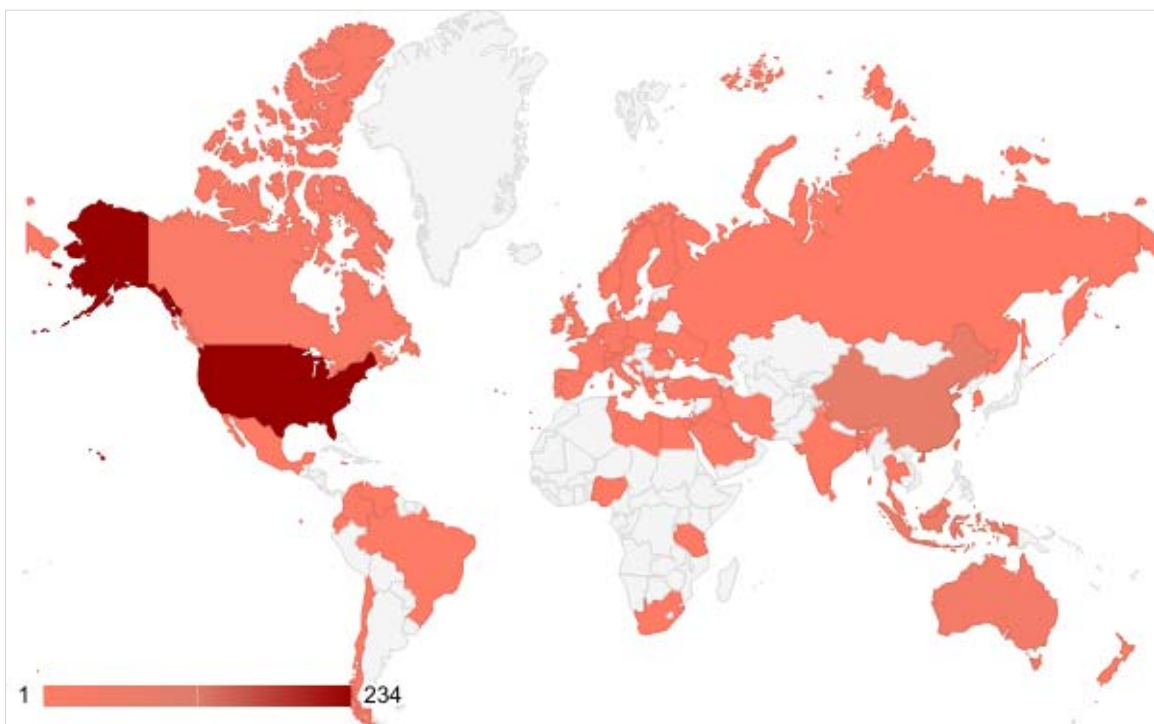


Fig. 2: Global distribution of AIS research outputs

Country distribution: From the analysis of the corpus, about 67 countries have contributed at least one scholarly publication to AIS research. Figure 2 showed the geographical map of national contributions of the 67 countries to AIS research according to the volume of research documents.

Table 1 highlighted the top 10 countries with the highest scholarly works on AIS. The list was topped by the United

States of America with 234 documents, amounting to 32.19%. These documents had been cited 3568 times, with h-index of 28. USA was followed by China, then Indonesia, Australia, United Kingdom, Italy, Malaysia, Canada, Germany and finally Netherlands. Seven of the top ten national contributors to AIS research were from developed countries, two from emerging economies and only one from developing countries. Similarly,

Table 1: Top 10 national contributors to AIS research

Country	No. of publications	Percentage	Citations	h-index
United States	234	32.19	3568	28
China	80	11.00	66	3
Indonesia	60	8.25	126	5
Australia	40	5.50	373	9
United Kingdom	34	4.68	662	8
Italy	32	4.40	313	3
Malaysia	19	2.61	75	5
Canada	17	2.34	118	5
Germany	17	2.34	54	4
Netherlands	13	1.79	305	5

Table 2: Author-publication frequency

Number of authors	Publication frequency
98	2
30	3
19	4
4	5
4	6
3	7
1	15
Total: 159	

Table 3: Analysis of authorship count per publication

Number of authors	No. of publications	Percentage	Rank
Single author	244	33.56	2
Two authors	261	35.90	1
Three authors	147	20.22	3
Four authors	59	8.12	4
Five authors	11	1.51	5
Six authors	2	0.28	7
Seven authors	3	0.41	6
Total	727		

Ardianto and Anridho¹⁷ identified the United States and Australia as a major contributor to AIS related research. From the top ten analyses, there was no African representation. Nigeria came 35th being the first Africa country with only three publications. A national commitment to research and development will engender development. Also, cloud computing was being proposed as a way developing countries can benefit from the ICT infrastructure in developed countries²².

Authorship analysis: Prolificness and number of authors per publication were important bibliometric markers in understanding the authorship trends in AIS research domain. In the preceding sections, the results of these analyses are presented.

Author-publication frequency: About 159 authors had contributed to AIS research since 1975 with 727 documents as at 2017. Table 2 showed that the 159 authors identified had published between 2 and 15 scholarly works. More specifically,

98 authors produced 2 documents each, 30 authors produced 3 documents each and 19 authors produced 4 documents. Four authors produced 5 and 6 documents relating to AIS, while 3 authors produced 7 documents each. Only one author had contributed an outstanding 15 scholarly works to the AIS body of knowledge.

Authorship pattern: The authorship pattern of the 727 documents that formed the basis of this study was also performed. The corpus showed that the authorship patterned ranged from 1-7 authors. Table 3 showed that publication frequencies attributed to the seven authorship patterns identified in this study. Single authors produced 244 scholarly documents (33.56%); meanwhile, more publications had two authors, with 261 publications (35.90%).

Most prolific authors in AIS research: The analysis of the top 12 most prolific authors in the AIS research domain in terms of volume of scholarly outputs revealed that Azhar Susanto, affiliated with Universitas Padjadjaran, Indonesia, emerged as the most published author in the domain with 15 publications until 2017 (Table 4). This volume of published works accounted for about 2.06% of total publications under review. These 15 documents had been cited 20 times and had an h-index of 2.

Most productive institutions: The analysis of the top 12 most productive institutions in terms of volume of research publications in the AIS research domain showed that Universitas Padjadjaran in Indonesia was the leading institution on the subject domain with 29 publications over the period covered in this study (Fig. 3). This was followed by Univerisita degli Studi di Napoli Parthenope, Italy, with 10 publications. Other institutions had below 10 publications. An interesting observation from Fig. 3 was that four out of the top 12 institutions on the subject were in the United States and two institutions were from Italy.

Source outlets: An analysis of the outlets where AIS research had been published as presented in Table 5 showed that the highest number of scholarly works had been published in the International Journal of Accounting Information Systems, published by Elsevier, with 48 publications, that had been cited 890 times (h-index = 18). The Journal of Information Systems, published by the American Accounting Association emerged the second top ranking outlet with 24 publications that had been cited 531 times (h-index = 9).

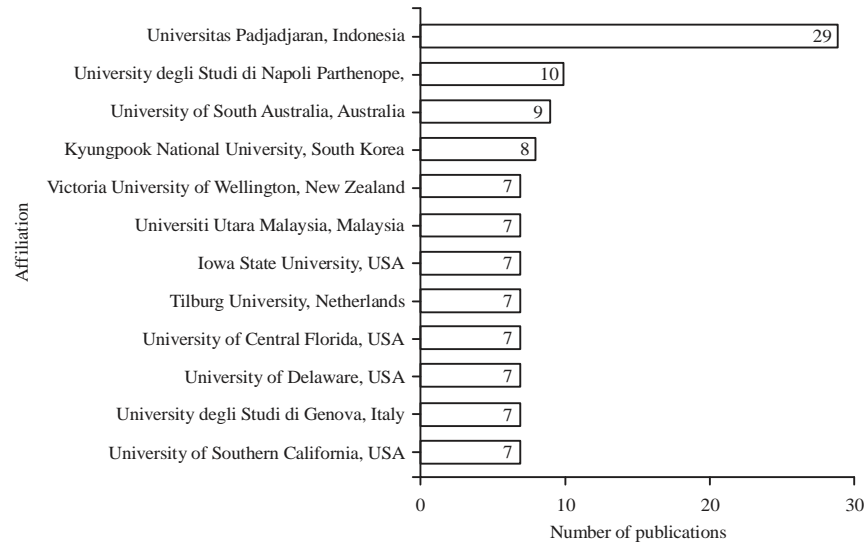


Fig. 3: Top 12 most productive institutions on AIS research

Table 4: Top 12 most published authors in AIS research since 1975

Name	Institutional affiliation	Publications	Percentage	Citations	h-index
Susanto, Azhar	Universitas Padjadjaran, Indonesia	15	2.06	20	2
Choe, Jong Min	Kyungpook National University, South Korea	7	0.96	209	5
Mancini, Daniela	Parthenope University, Italy	7	0.96	9	2
Wongsim, Manirath	Mahasarakham University, Thailand	7	0.96	1	1
Janvrin, Diane	Iowa State University, USA	6	0.83	81	3
Mulyani, Sri	Universitas Padjadjaran, Indonesia	6	0.83	17	2
O'Leary, Daniel	University of Southern California, USA	6	0.83	112	3
Rushinek, Avi	University of Miami School of Business Administration, USA	6	0.83	2	1
Bonollo, Elisa	Universita degli Studi di Genova, Italy	5	0.69	5	1
Dillard, Jesse	Victoria University of Wellington, New Zealand	5	0.69	72	4
Gao, Jing	University of South Australia, Australia	5	0.69	1	1
Swanson, G. A.	Tennessee Technological University, USA	5	0.69	19	2

Table 5: Top 10 outlet of AIS research (1975-2017)

Source title	Publisher	Publications	Citations	h-index
International Journal of Accounting Information Systems	Elsevier	48	890	18
Journal of Information Systems	American Accounting Association	24	531	9
Journal of Accounting Education	Elsevier	21	118	6
Lecture Notes in Information Systems and Organisation	Springer Heidelberg	17	13	2
International Journal of Applied Business and Economic Research	Serials Publications	15	80	2
Issues in Accounting Education	American Accounting Association	15	121	6
Routledge Companion to Accounting Information Systems	Taylor and Francis	14	0	0
Accounting, Organizations and Society	Elsevier	12	1073	10
Journal of Engineering and Applied Sciences	Medwell Journals	12	8	1
Advanced Materials Research	Trans Tech Publications Ltd	10	1	1

Document type: The exploration of the variety of the 727 AIS scholarly document types published between 1975 and 2017 showed that these documents were classified as follows (Fig. 4): Articles formed the largest share of document types with 420 documents (57.8%), followed by Conference Paper (216 documents, 29.7%). The percentage of Book chapters amounted to 5.09% with 37 documents classified as such. The count of Review documents was 23 (3.2%), meanwhile,

other document types include Conference Review, Editorial, Note, Book and Article in Press.

Keyword analysis: An analysis of the keywords used in AIS literature was performed to determine the trend of research in the domain. In other to perform the analysis, firstly, obvious keywords such as "Accounting", "Accounting Information Systems", "AIS", etc. were removed. Next, keywords referring

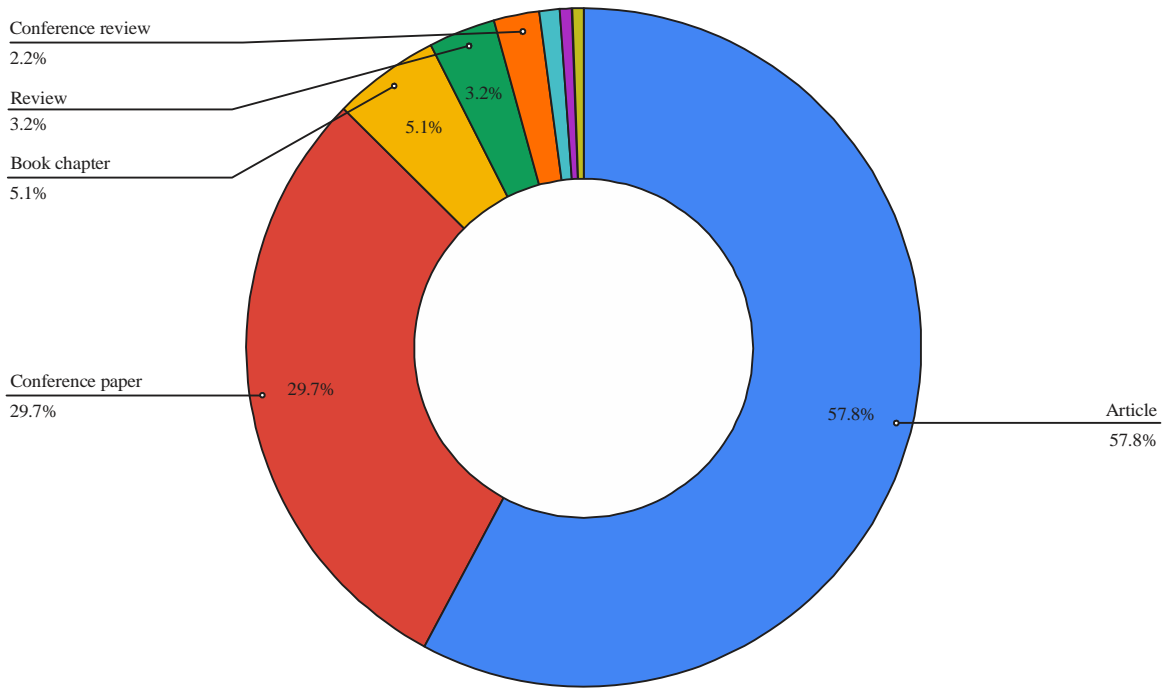


Fig. 4: Variety of documents in AIS research

Table 6: Keyword trends in AIS research

Keyword group	Sample keywords	Publication count
Audit and Control	Internal Controls, Auditing, Regulatory Compliance, Management Control	92
Enterprise Information Systems	Enterprise Resource Planning, Enterprise Information Systems	52
Decision Making	Decision Making, Decision Support Systems	48
Accounting Education	Accounting Education, Students, Curricula, Teaching	44
Management Accounting	Management Accounting, Corporate Governance, Management, Governance	43
Finance	Finance	41
Financial Accounting	Financial Accounting, Financial Reporting Financial Statements, Accounting Standards	40
Cost Accounting	Cost Accounting, Costs	38
Electronic Commerce	Electronic Commerce, e-commerce	33
Risk Assessment	Risk Assessment, Risks	31

to the same concepts were grouped together; for example, "ERP" was grouped along with "Enterprise Resource Planning", Meanwhile, keywords that belong to the same family of concepts where also grouped together; for example, Internal Controls was grouped alongside "Auditing", "Management Control" and "Regulatory compliance". Table 6 contained the top 10 regrouped keywords and the number of publications relevant to keywords.

From the presentation in Table 6, Audit and Internal controls had the highest number of publications with 92 documents representing 12.65% of the 727 documents used in this analysis.

Citation analysis: The general citation analysis showed that the 727 documents had been cited 5644 times with an h-index of 37. The citation trends based on yearly

distribution, authorship patterns and most cited publications were presented as follows.

Yearly citation trends: There was a steady rise in the citation trends from 1976-2018 and beyond (Fig. 5). In the last six years (2012-2018), the highest citation for AIS research had been in 2017 with 649 citations. In 2012 AIS publications were cited 354 times. 2013 and 2014 had an equal number of citations of 471 citations. The number of citation increased to 495 in the year 2015, 578 in 2016, whereas the citation count for 2018 is still on-going.

Citation trends based on authorship patterns: Authors performed the analysis of the citation trend based on the authorship pattern, i.e., the number of authors for each publication (Table 7). Publications originating from single

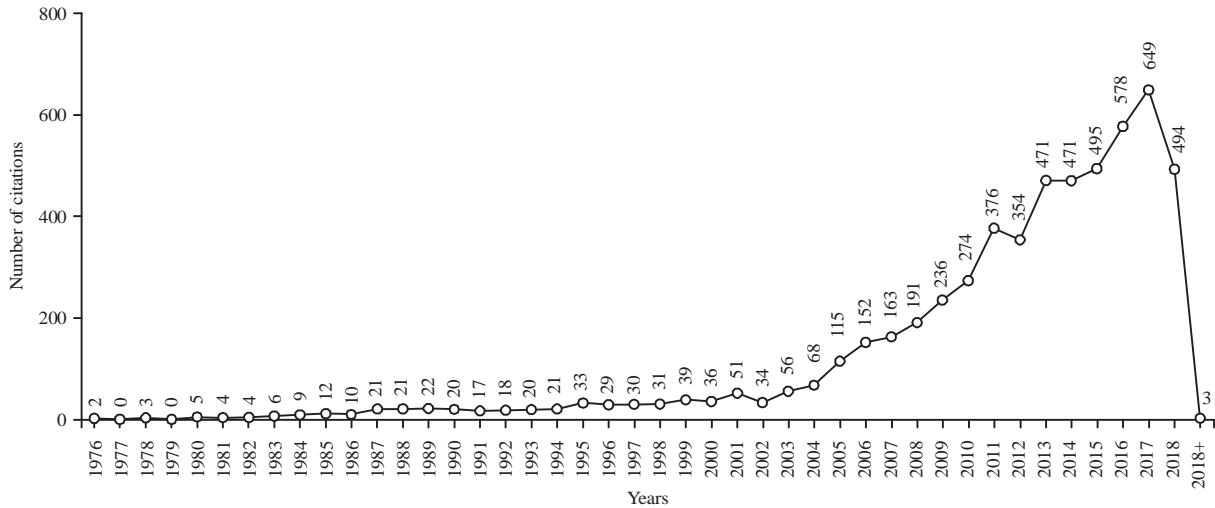


Fig. 5: Citation trends for AIS research publications, 1976-2018+

Table 7: Number of authors: publication volume vs. citation count

Number of authors	Citations	
	Count	Percentage
Single author	1348	23.88
Two authors	2482	43.98
Three authors	1063	18.83
Four authors	484	8.58
Five authors	238	4.22
Six authors	26	0.46
Seven authors	3	0.05
Grand total	5644	

authors were cited 1348 times (23.88%), while those publications from two authors were cited 2482, amount to 43.98%, which was the highest number of citation based on authorship pattern. However contrary to some studies, e.g., Fox *et al.*²³, the number of citations did not increase with a number of authors. The analysis in Table 7 showed that lower the number of authors, the higher the citation, except in the case of publications with two authors.

Most cited publications: An analysis of the top 20 most cited publications in the AIS research domain was performed; this was based on all scholarly documents published from 1975-2017 (Table 8). The most cited document from the top 20 AIS publication is titled, "Accounting systems and systems of accountability-understanding accounting practices in their organizational contexts" and was authored by Roberts and Scapens²⁴. The aim of the study was to present a theoretical framework for analyzing the operation of systems of accountability in organizations and the authors found that the use of information by researchers

and practitioners leads to increase in the effectiveness of accounting practice. The publication had 410 citations, followed by a 1976 publication titled, "A contingency framework for the design of accounting information systems"²⁵, which had 217 citations. The 20th most cited publication was published in 2010 and it was titled "The effects of information presentation format on judgment and decision making: A review of the information systems research"²⁶. It was worthy of note that the article by Wier *et al.*²⁷ titled "Enterprise resource planning systems and non-financial performance incentives: The joint impact on corporate performance" was retracted in 2015 by the International Journal of Accounting Information Systems.

Key findings of this study include the following: First, there was no steady growth in the volume of AIS research publication, a sharp decline occurred in 2012 from 79 publications in 2011 to 50 publications in 2012 then, 2017 contributing the highest number of publication yet with 86 publications. It was observed that Malaysia is the only developing country that features as one of the top 10 national contributors to AIS research while China and Indonesia are the only emerging economies featured as one of top 10 national contributors. The results also show that Only 159 authors contribute to the 727 publications on AIS research. Fourth, double authored publications have the highest number of publication as against others. Based on the outlets where AIS research has been published, the results of this study shows that only 5 of the top 10 outlets of AIS research are core accounting outlets. Besides the obvious keywords of 'accounting information system', 'information system'

Table 8: Top 20 most cited AIS publications

Source	Title	Aim of study	Method	Key findings	Publication outlet	Citations
Roberts and Scapens ²⁴	Accounting systems and systems of accountability-understanding accounting practices in their organisational contexts	To present a theoretical framework for analyzing the operation of systems of accountability in organizations	Modelling	The actual use of information provides researchers and practitioners with the effectiveness of accounting practice.	Accounting, Organizations and Society	410
Gordon and Miller ²⁵	A contingency framework for the design of accounting information systems	To provide a broader and more adaptive framework for designing accounting information systems	Modelling	Accounting information system could act as an agent of change to facilitate organizational performance	Accounting, Organizations and Society	217
Tayf and Ballou ²⁶	Examining data quality	To address data quality concerns	Nil	Data is a key organizational resource and should be managed accordingly	Communications of the ACM	191
Pacini <i>et al.</i> ²⁹	Evaluation of sustainability of organic, integrated and conventional farming systems: A farm and field-scale analysis	To evaluate the financial and environmental aspects of sustainability of organic, integrated and conventional farming systems at the farm level and on more detailed spatial scales	Case Study	The gross margins of steady-state organic farming systems were found to be higher than the corresponding conventional farming systems gross Margin	Agriculture, Ecosystems and Environment	179
Grabski <i>et al.</i> ³⁰	A review of ERP research: A future agenda for accounting information systems	To review research on Enterprise Resource Planning from an extensive examination of ERP-related literature	Literature Review	The overall scope of ERP-related literature is already quite broad, however, ERP research needs a greater focus on theoretical support and theory development	Journal of Information Systems	168
Otley and Berry ³¹	Control, organisation and accounting	To explore the role of accounting information systems in the applicability of a cybernetic model of control to the control of human organizations	Modelling	The role of accounting information in organizational control is limited due to the lack of variety in the accounting system	Accounting, Organizations and Society	166
Butler ²²	Security attribute evaluation method: A cost-benefit approach	To use a cost-benefit analysis method called security attribute evaluation method (SAEM) to compare alternative security designs in a financial and accounting information system	Case Study-Structured Interview	SAEM provides a structured cost-benefit analysis technique that helps security practitioners evaluate the selection of security technologies	Proceedings-International Conference on Software Engineering	132
Choe ³³	The relationships among performance of accounting information systems, influence factors and evolution level of information systems	To examine the direct relationships between influence factors and performance of accounting information systems	Interviews based on structured questionnaires	There are significant positive correlations between the performance of an AIS and the influence factors such as user involvement, the capability of IS personnel and organization size	Journal of Management Information Systems	98
Wilkin and Chenhall ³⁴	A review of IT governance: A taxonomy to inform accounting information systems	To review Information Systems (IS) literature that is relevant to Information Technology Governance (ITG) and to examine how it informs Accounting Information Systems (AIS)	Literature Review	Lack of integration between focus areas, with little about information Technology Governance as a whole	Journal of Information Systems	91
Abemethy and Vagnoni ³⁵	Power, organization design and managerial behaviour	To examine empirically the impact of authority structures on the use of accounting information systems (AISs) for decision control and decision management	Survey-Questionnaires	A delegation of formal authority to physician managers not only has a direct impact on the use of accounting for decision control and decision management it also has an important effect on cost consciousness	Accounting, Organizations and Society	89
Nicolaou ³⁶	A contingency model of perceived effectiveness in accounting information systems: Organizational coordination and control effects	To empirically examine the relationship between AIS integration and perceptions of system effectiveness	Archival-Cross-sectional Samples	System fit is significant in explaining the variations in decision makers' perceived satisfaction with the accuracy and monitoring effectiveness of output information	International Journal of Accounting Information Systems	81

Table 8: Continue

Source	Title	Aim of study	Method	Key findings	Publication outlet	Citations
Lubis <i>et al.</i> ²⁷	The role of Enterprise Resource Plan (ERP) configuration to the timeliness of the financial statement presentation	To describe the role of Accounting Information System of Enterprise Resource Plan (ERP) of the Regency Government in North Sumatra	Survey	The system implementation of the ERP module including the support from management support is effective in processing the transaction data and presenting the financial statement information	International Journal of Applied Business and Economic Research	77
Kobelsky <i>et al.</i> ²⁸	Determinants and consequences of firm information technology budgets	To examine the extent to which IT budgets are affected by environmental, organizational and technological circumstances	Archival-Panel data	The cross-sectional model explains substantial variance in IT budgets, IT budget levels are positively associated with subsequent firm performance and shareholder returns	Accounting Review	71
*Wier <i>et al.</i> ²⁷	Enterprise resource planning systems and non-financial performance incentives: The joint impact on corporate performance	To determine if the joint adoption of ERP and the use of non-financial performance incentives (NFP) will yield greater corporate performance than either ERP or non-financial performance incentives alone	Archival data	Firms with both NFP and ERP obtain significantly higher short-term and long-term ROA and SR than either ERP-only or NFP-only firms	International Journal of Accounting Information Systems	70
Wiersma ³⁹	For which purposes do managers use Balanced Scorecards? An empirical study	To examine the purposes for which managers use the Balanced Scorecard	Survey	Managers use the balance scorecard for coordination, self-monitoring decision-making and decision-rationalizing	Management Accounting Research	65
Ezzamel and Bourm ⁴⁰	The roles of accounting information systems in an organization experiencing financial crisis	To explore the roles of Accounting Information Systems (AIS) in organizations facing financial crises	Case study	AIS did not appear to possess the requisite qualities for effective pro-active and nor responsive crisis management during the early phases of the crisis	Accounting, Organizations and Society	58
Aptel and Pourjalal ⁴¹	Improving activities and decreasing costs of logistics in hospitals: A comparison of U.S. and French hospitals	To investigate the logistic (or supply-chain management) differences between large hospitals in the U.S. and France	Survey-Questionnaire	U.S. hospitals have a lower supplies inventory level than France hospitals. Both hospitals support current and future partnerships with other hospitals and suppliers of goods and services	International Journal of Accounting	56
Masli <i>et al.</i> ⁴²	The business value of IT: A synthesis and framework of archival research	To synthesizes recent empirical archival research investigating the link between information technology investment and business value	Literature Review	IT spending must first affect IT and business capabilities and be combined with complementary business investments to influence firm performance	Journal of Information Systems	55
Granlund ⁴³	Extending AIS research to management accounting and control issues: A research note	To initiate discussion on the status of research on the interface between management control, especially management accounting and information technology	Literature Review	The mainstream tradition accounting researchers tend to largely ignore the design and implementation processes in information technology	International Journal of Accounting Information Systems	54
Kelton <i>et al.</i> ²⁶	The effects of information presentation format on judgment and decision making: A review of the information systems research	To review the information systems and accounting information systems research on the effects of information presentation format on judgment and decision making	Literature Review	Information presentation format effects are pervasive and affect individual decision making in a variety of contexts	Journal of Information Systems	54

*Study has been retracted by the International Journal of Accounting Information Systems in 2015

keywords such as Internal Controls, Auditing, Regulatory Compliance, Management Control are the most dominant.

An analysis of the research design and methods employed in the top most cited publications include; literature review (25%), survey (20%), case study (15%), archival (10%), modelling (15%), interview (5%) and experiment (5%). This classification was consistent with an earlier review by Poston and Grabski⁸. Literature-based and survey-based research method seemed to be of particular interest to AIS researcher. In line with a recent prior review, survey research method tend to have the highest usage¹⁷. Survey-based research required the research work to be carefully planned and properly executed for any meaningful results and conclusions to be made⁴⁴.

There are a number of implications consequent on the findings of this study; at the theoretical level, the study adds to the limited body of bibliometric analysis which examines trends in AIS research^{8,13}. In doing so, it provided an extended scope in years (1975-2017) and to other quality and impactful outlets such as journals, conference proceedings, book series, book and trade publications index in Scopus database. At the practical level, there is a dire need for AIS researchers in developing countries to join the international conversation on AIS varied topics. With the current adoption of information communication technologies, developing countries stand a chance to reap the benefits of these innovations if adequate funding is directed to research and development.

CONCLUSION

This paper specifically employs a bibliometric approach to quantitatively analyze the volume and impact of 727 publications in the AIS research domain. The study focused on determining the yearly distribution, national contributions, authorship patterns, leading prolific authors, productive institutions, publication outlets, documents types, key issues, citation trends of AIS research publication from 1975-2017. Research documents retrieved from the Scopus database were based on defined search terms relating to AIS. While AIS adoption is becoming the mainstream in most developed countries, more investments in ICTs deployment and education will enable developing countries to reap the benefits of these innovations.

SIGNIFICANCE STATEMENT

This study provides a perspective in understanding the state of AIS research and forms a basis to identify influential

researchers, discover research gaps and opportunities, identify under-explored topics and study methodological issues in the subject domain. Consequently, the outcome of this study would, in turn, contribute to forming research agendas, guidelines and standards.

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