# Management Accounting Practices: A Bibliometric Analysis

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#### **ABSTRACT**

The study of management accounting practices began 40 years ago, and regarded as an important issue in management accounting. Management accounting strategies have evolved to meet the need to adapt to changes in the industrial and macroeconomic climate. Theoretical and realistic aspects of management accounting approaches were built to meet the needs of timely and effective decision-making. In this study, journals publish management accounting research and most cited sources in these journals were explored by performing a bibliometric analysis on scientific literature published in the field of management accounting practices. The Scopus database was used to gather literature related on management accounting practices. Apart from employing SPSS and Microsoft Excel software, Publish or Perish software was also utilized to integrate the data and perform simple analysis before using the VOSviewer to perform data visualisation. Publication's growth, the productivity of research and citation analysis were reported via standard bibliometric analysis. A total of 321 documents were retrieved based on the keyword search results. Most articles were written in English and published in journals and conferences articles. The bibliometric analysis presents the advancement of the scientific literature on management accounting practices and highlights the areas of interest where future researchers could explore.

**Keywords:** Management Accounting Practices, bibliometric analysis, PRISMA, VOSviewer

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## INTRODUCTION

Management accounting practices (hereafter MAPs) implemented in firms may aid in the availability of meaningful and effective information to managers, particularly in the maintenance of firms' sustainability in today's world of global competition (Sunarni, 2013). Furthermore, Pavlatos and Kostakis (2015) indicated that the latest global economy, primarily affected by the climate of financial downturn, enforced the need for MAP implementation in order to continuously improve and be profitable in order to meet market dynamics (Sunarni, 2013). Furthermore, Abdel Al. and McLellan (2013) asserted that MAPs have a substantial impact on a company's performance. Thus, MAPs are thought to cover a variety of aspects in an organisation, such as cost control, strategic planning, resources, and operational activities, and are thought to supplement approaches in managing numerous components of a company's performance.

Islam and Kantor (2005) defined MAPs as practices by management accountants that use existing methods and techniques to help them in delivering management accounting information to managers in conducting their managerial functions. Over the last 40 years, there has been numerous studies conducted in management accounting. Looking back the last 50 years, some functions may have barely changed, but the difference is that management accounting has progressed from a functional responsibility to a professional one. The evolution of management accounting is concerned with the professionalisation of the function.

Hence, the purpose of this study was to quantitatively investigate the boundaries of the scholarly field in MAPs represented by conference articles and journals and to determine whether MAPs research appears to be lacking. Also, the goal was to boost understanding of the use of citation data from the Scopus database, and highlight the areas of interest where future researchers could explore.

Furthermore, a significant proportion of management accounting research based on journals has seen the light of day. Therefore, the study is aware of the significant advancement of MAPs in the field of research and practice, which prompted us to conduct this bibliometric review. Thus, this study aimed to examine MAPs studies in the past 40 years and explore

how this bibliometric analysis will shape future research. By applying a bibliometric review, the study addressed the research questions listed below:

- 1. What is the current trend in the publication of Management Accounting Practices?
- 2. Which are the most influential articles on Management Accounting Practices?
- 3. Which are the most popular themes of Management Accounting Practices among scholars?
- 4. Who are the most influential authors of Management Accounting Practices?
- 5. What is the current state of collaboration involving Management Accounting Practices?
- 6. What is the intellectual structure of current research on Management Accounting Practices?

In two ways, this study adds to the existing body of knowledge about MAPs: First, this paper provides better enlightenment to deal with the issues affecting MAPs quality based on past and recent literature review. Second, an in-depth review of methods of assessment on MAPs quality which seeks to extend the body of literature that concerns the MAPs dimension from the period of 1980 to 2020. On top of that, the researchers anticipated that the analysis of this study would provide a better understanding on this topic and where other researchers could explore in future.

The organisation of this study covers five key sections: Introduction, Literature Review, Data and Methods, Results and Discussion, and Conclusion and Limitation. The Results and Discussion part are supported using a comprehensive descriptive analysis through evolution of publications in the past 40 years, types of documents, sources and access, languages use in publications, geographic publication and affiliation distribution, authorship analysis, citation analysis, keywords analysis and the trend in its fundamental intellectual structure. Lastly, this study highlights the conclusions, limitations, and suggest areas future researchers that could explore further.

## LITERATURE REVIEW

Most research on MAPs in developed countries has been conducted in Europe, the United States, and the Asia Pacific region. On the contrary, researchers categorized the use of management accounting in the less developed countries as unnoticed, and research in this field is still considered scarce in the literary works. Specifically, research on MAP focused the adoption level of the practices particular in manufacturing sector. Besides, factors of study undertaken may differ due to the economies and business administration status in the less developed countries. Even so, following the rapid economic growth in the less developed countries, the demands of management-oriented accounting information relatively increased and influenced the promotion of adoption management accounting in business management.

The application of management accounting in less developed countries (LDCs) has been categorized as unsatisfactory by researchers, and studies in this area are still considered scarce in the literature. Because of the relatively underdeveloped economies and business administration status in LDCs, some variables may differ. Nevertheless, the demands for management-oriented accounting information are relatively increasing following the rapid economic growth in LDCs and have influenced the promotion of management accounting usage in business management.

Management accounting itself has been criticized for not being able to innovate (Johnson & Kaplan, 1987), and lag in its development (Kaplan, 1986) or considered by many as 'slow' and 'ill-defined' (Noordin, Zainuddin, Fuad & Mail, 2014), in which some called it as the crisis in management accounting (Scapens & Bromwich, 2010; Bromwich & Bhimani, 1994). Among others, these advocates claimed that management accounting information was less relevant and short-termism in determining an organization's direction. According to Dilts and Russell (1985), Brimson (1986), Johnson and Kaplan (1987), and Lee (1987), accountants in Western countries, particularly the United States, were already sharply criticised for failing to adapt their MAPs to adjusting technology and methods of production in competitive manufacturing enterprises. However, Askarany (2004) witnessed that a majority of the cost and management accounting practices were introduced to Australian practitioners via professional journals, workshops, and conferences.

Ironically, in response to the criticism of traditional management accounting, management accounting has seen a change in focus, techniques, functions, and roles that have failed to adapt to business and economic changes. Since the changes in the requirements of the competitive market, the management accountant's role has evolved.

A study of management accounting in the Asia Pacific is highlighted based on Nishimura (2002), who classified Asian management accounting into four historical developmental stages: "drifting" management accounting, traditional management accounting, mathematical management accounting, and integrated management accounting. In Singapore, two longitudinal studies on the development of management accounting were published by Ghosh, Chung, and Wan (1987) and Ghosh and Chan (1997). These two studies identified that in the adoption of MAPs by local companies from 1980 to the mid-1990s there were no changes in the ratings given to the five most commonly used management accounting tools, which are long-term planning, cash budgeting, capital budgeting, budget planning, and periodic income statement reviews ranked accordingly.

Nandan's (2010) study of management accounting requirements in companies showed that management accounting information is very important for managers, particularly in managing resources and making resource allocation decisions. Rattanaporn et al. (2000), who concluded that Malaysian firms continued to prefer to use traditional management accounting to meet their needs for external and internal reporting reasons, agreeing with Loo, Nor Aziah and Badriyah (1996), Chun, Kassim and Minai (1994), and Ahmad (2014). Specifically, Malaysian small and medium enterprises (SMEs) in the manufacturing sector have widely adopted MAPs such as budgeting and traditional costing, as well as significant numbers of SMEs that have adopted MAPs, for instance, financial and non-financial measures to assist in management decision making (Ahmad, 2014). Nair and Nian (2017) concluded in their study that the adoption of management accounting practices in Malaysia is affected by organization size and advanced production technology.

In Vietnam, management accounting has been taught in universities since 1995 and is used by the majority of Vietnamese businesses. However, the use of management accounting in Vietnam remains at a low level and

also with low effectiveness. (Nagirikandalage, Binsardi, Kooli & Anh, 2016; Hung, 2016). Consequently, the advocates discovered that the field of management accounting had developed substantially. Specifically, the emphasis has shifted from cost accounting to management accounting practices for example activity-based costing, performance measurement and target costing. Thus, this study aimed at examining the trend and development of management accounting in the last 40 years.

## **METHODOLOGY**

Bibliometric analysis is gaining popularity as a method for revealing research trends (Ahmi & Mohammad, 2019), and has been used widely in the management field in recent years (Ferreira, Li, Reis, & Serra, 2014). It is seen as an alternative to the study of conventional literature. A quantitative study of physical written units, or bibliographic units, or proxies of each (Broadus, 1987) consists of bibliometrics. Furthermore, through a methodological approach in the execution of a bibliometric analysis, more precise information about the articles, such as authors, keyword frequency, and citations, could be discovered (Rusly, Ahmi, Abdul Talib & Rosli, 2019). For publications, bibliometric analysis could provide descriptive patterns based on a domain, field, country, and time period. Different metrics, such as the publishing outlet, modes of publication, authorship, affiliations, country, h-index, and g-index, are among the most frequently examined aspects of bibliographic research (Ahmi & Mohammad, 2019).

Scopus is the largest archive of scholarly work (Burnham, 2006) and the most comprehensive searchable citation and source for abstract search literature (Chadegani, et. al., 2013). This database was used as the platform for extracting previous web accessibility works. The database provides details of the publication that include the type of access, year, author name, area topic, type of text, title of source, keyword, affiliation, country, type of source and language.

This study narrowed the search for web accessibility studies based on titles in order to specify important academic work in the research domain examined. Due to the large number of studies on management accounting, this review concentrated only on documents relevant to MAPs based on the title of the articles (Bromwich & Scapens, 2016). As such, the following search in the Scopus database was carried out: TITLE-ABS-KEY ("management accounting practices").

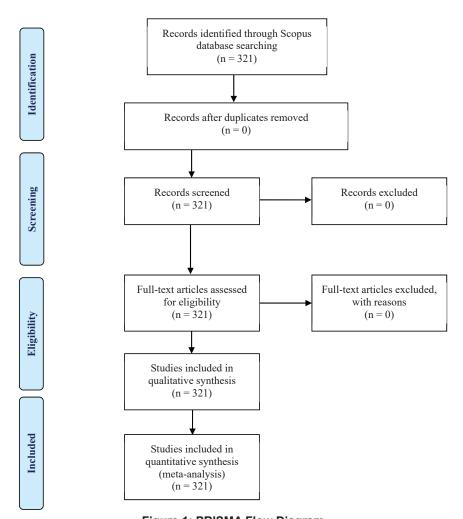


Figure 1: PRISMA Flow Diagram (Source: Moher, Liberati, Tetzlaff, Altman, The PRISMA Group, 2009)

## RESULTS AND DISCUSSION

The analysis of the extracted scholarly works covered document types and source types, annual growth, document language, subject area, analysis of keywords, productivity of the country, analysis of authorship and citation. The bulk of the results were interpreted in terms of frequency and percentage. Meanwhile, as some documents were retrieved each year, the study present annual growth data, including frequency, percentage, and cumulative percentage until November 2020. This study publishes citation analysis and reveal 321 of the most cited papers in web accessibility as citation metrics.

#### **Evolution of Publication**

As shown in Figure 2, the growth of the related publications had risen gradually with a two-digit number of publications especially since 2001. However, these number drastically decreased in 2012 with only 9 publications from 21 publications in 2011 before picking up its momentum to 15 publications in 2013. The year with the most publications was 2019, with a total of 27 publications. Although the year is still in progress in 2020, some publications have already been scheduled and indexed in the Scopus database. McNally and Eng (1980) published the first study on MAPs in their paper titled "Management Accounting Practices and Company Characteristics."

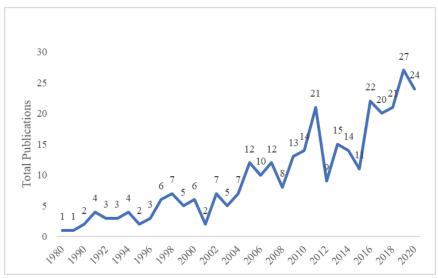


Figure 2: Management Accounting Practices Publications, 1998-2020 (n=321)

## **Document and Source Types**

This study retrieved 321 different types of research papers related to MAPs, namely conference papers, conference reviews, articles, book chapters, review and retracted form the Scopus database since 1980 to November 11, 2020 as exhibited in Table 1. Widely held of the publications were articles, which accounted for 83.2%, followed by review papers (6.5%), book chapters (5.3%), conference papers (5.3%), and books (0.9%). Five types of sources are also presented in Table 1. Journals represented 86.3% and were the highest category, followed by books with 5.9%, book series with 4.4%, conference proceedings with 3.1%, and trade journals with 0.3% number of publications. Other types of access contributed the most for number of publications with 91.3% and only about 8.7% came from open access source.

**Table 1: Document and Source Types** 

Document Type	NP	%	Source Type	NP	%	Access Type	NP	%
Article	267	83.2	Journal	277	86.3	Open Access	28	8.7
Review	21	6.5	Book	19	5.9	Other	293	91.3
Book Chapter	17	5.3	Book Series	14	4.4			
Conference Paper	13	4.0	Conference Proceeding	10	3.1			
Book	3	0.9	Trade Journal	1	0.3			
Total	321	100.00	Total	321	100.0	Total	321	100.0

NP=No. of Publication/s

# **Languages of Documents**

Most papers were written in English as it has been recognised universally as scholarly language. Table 2 shows that most of the documents retrieved from Scopus database were written in English (96.9%). 6 articles were written in Portuguese and 1 essay was written in Malay, Moldovan, and Romanian.

Table 2: Languages

Language	NP	%
English	316	96.9
Portuguese	6	1.8
Malay	1	0.3
Moldavian	1	0.3
Moldovan	1	0.3
Romanian	1	0.3

NP=No. of Publication/s

# Subject Area

As exhibited in Table 3, almost half of MAPs were written on business, management and accounting topics representing 46.3% of the total reports, followed by Economics, Econometrics and Finance (23.1%), Decision Sciences (9.9%), Social Sciences (8.8%), Engineering (3.4%), and Computer Science (2.1%). Table 3 also includes the other subject areas covered in the research on MAPs from Environmental Science to Psychology.

Table 3: Subject Area

	Subject Area	NP	%
1	Business, Management and Accounting	284	46.3
2	Economics, Econometrics and Finance	142	23.1
3	Decision Sciences	61	9.9
4	Social Sciences	54	8.8
5	Engineering	21	3.4
6	Computer Science	13	2.1
7	Environmental Science	9	1.5
8	Agricultural and Biological Sciences	7	1.1
9	Arts and Humanities	7	1.1
10	Energy	4	0.7
11	Medicine	4	0.7
12	Mathematics	3	0.5
13	Pharmacology, Toxicology and Pharmaceutics	2	0.3
14	Health Professions	1	0.2
15	Nursing	1	0.2
16	Psychology	1	0.2

NP=No. of Publication/s

## Geographic Distribution of Publication and Affiliation

The retrieved documents were published with the contribution of researchers from 58 different countries. The top 8 countries contributing to the publications in MAPs are listed in Table 4 and shown in Figure 3. United Kingdom (UK) was ranked first with a total of 70 documents, followed by Australia (38), the United States (US) (29) and Malaysia (28). In relation to the total number of citations by country, United Kingdom (UK) was ranked first with a total of 2,700 citations, followed by Australia (1,180), the United States (US) (827), Canada (267), Malaysia with 231 of total citations, and Sweden (222).

	Country	TP	NCP	TC	СР	C/CP	h-Index	g-Index
1	United Kingdom	70	63	2700	38.6	42.9	25	51
2	Australia	38	35	1180	31.1	33.7	13	34
3	United States	29	26	827	28.5	31.8	12	28
4	Malaysia	28	16	231	8.3	14.4	7	15
5	Germany	13	11	75	5.8	6.8	5	8
6	Canada	12	10	267	22.3	26.7	9	12
7	Indonesia	12	4	13	1.1	3.3	2	3
8	Sweden	10	10	222	22.2	22.2	6	10

Table 4: Top 8 Countries Contributed to the Publications

Notes: TP=Total number of publications; NCP=Number of Cited Publications; TC=Total Citations; C/P=Average Citations per Publication; C/CP=Average Citations per Cited Publication; h = h-index; and g = g-index

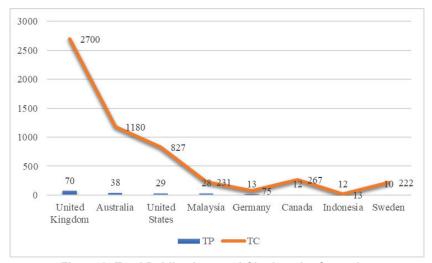


Figure 3: Total Publications and Citations by Countries

# **Authorship Analysis**

This paper also analyzed the most active authors in publishing documents on MAPs. Table 5 shows the most active authors with at least five publications. Based on the table, Scapens, R.W., Drury, C., Tayles, M., Habidin, N.F., Janudin, S.E., and Shields, M.D. were among the top authors in this field of research with more than five publications on MAPs. The total citation counts the how often articles on MAPs have been cited by other Scopus articles. Scapens, R.W. who contributed the most articles was also the highest cited author on this topic, thus, demonstrating that the number of publications was related to the number of citations. Meanwhile,

Habidin, N.F. and Janudin, S.E. had the lowest total publications and total citations among all the 5 productive authors on MAPs.

**Table 5: Top 6 Productive Authors** 

	Author	TP	NCP	TC	СР	C/CP	h-Index	g-Index
1	Scapens, R.W.	7	6	870	124.3	145.0	6	7
2	Drury, C.	6	6	148	24.7	24.7	6	6
3	Tayles, M.	6	6	337	56.2	56.2	5	6
4	Habidin, N.F.	5	3	10	2.0	3.3	2	3
5	Janudin, S.E.	5	3	10	2.0	3.3	2	3
6	Shields, M.D.	5	5	178	35.6	35.6	4	5

Notes: TP=Total number of publications; NCP=Number of Cited Publications; TC=Total Citations; C/P=Average Citations per Publication; C/CP=Average Citations per Cited Publication; h = h-index; and g = g-index

## **Citation Analysis**

To obtain the citation metrics for the retrieved data, this study used the Harzing's Publish or Perish programme. Data from the Scopus database was imported into this programme to generate the citation metrics. As of November 11, 2020, Table 6 summarises the citation metrics for recovered documentation. The summary includes the total number of citations per year, citations per article, and citations per author.

**Table 6: Citations Metrics** 

Metrics	Data
Publication years	1980-2020
Citation years	40 (1980-2020)
Papers	321
Authors	307
Citations	7,103
Citations/year	177.58
Citations/paper	22.13
Citations/author	23.14
Papers/author	1.05
Authors/paper	0.96
h-index	46
g-index	77

## **Keywords Analysis**

The authors' keywords were mapped with the VOSviewer, a software tool for constructing and visualizing bibliometric networks. Figure 4 presents a network visualization of the authors' keywords, whereby colour, square size, font size, and thickness of connecting lines were used to indicate the relationships among the keywords. For example, keywords with the same colour were commonly listed together. Thus, in this study, for instance, management accounting and MAPs and management accounting change shared a similar colour (green), suggesting these keywords are closely linked and usually co-occurred as exhibit in Network visualisation map of the author keywords in Figure 4.

Meanwhile, after removing the core keywords specified in the search query, management accounting, management accounting change, accounting, cost accounting, and management accounting practice are among the keywords with the highest occurrences. The top 14 keywords used in MAPs research are shown in top keywords in Table 7.

Table 7: Top Keywords

	Keyword	Total Publicati	ions %
1	Management Accounting	88	35.5
2	Management Accounting Practices	33	13.3
3	Management Accounting Change	14	5.6
4	Accounting	13	5.2
5	Cost Accounting	13	5.2
6	Management Accounting Practice	13	5.2
7	Contingency Theory	11	4.4
8	Strategic Management Accounting	11	4.4
9	Institutional Theory	10	4.0
10	Activity-based Costing	9	3.6
11	Malaysia	9	3.6
12	Balanced Scorecard	8	3.2
13	Change	8	3.2
14	Environmental Management Accounting	8	3.2

## Visualisation Map

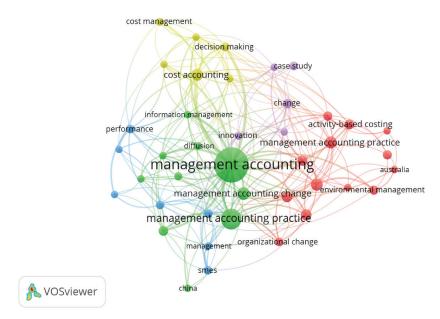


Figure 4: Network Visualisation Map of the Author Keywords

There has been a long debate about how accounting has seemingly struggled for years to find its identity and directions for future research. As concerned by Lukka (2010), Malmi (2010) and Merchant (2010) accounting research is becoming increasingly narrow in terms of its philosophical assumptions, methodological approaches, and theoretical underpinnings. This could be because of accounting sub-groups such as financial accounting, management accounting, or taxation. However, the journals defined as MAPs in this setting and their cited sources are evolving to the point where the researched topics change, reflecting that the field is not constant. Then, with utmost caution, it should be concluded that MAPs is a struggling discipline.

Therefore, in this study, bibliometric indicators of management accounting practices were examined to explore what have been known so far and what directions other researchers could seek in future on this particular topic. This study revealed that the English language remained

the language used in MAPs field with more than 96.9 percent of retrieved documents were written in English. 6 articles were written in Portuguese and 1 essay was written in Malay, Moldovan, and Romanian. The UK ranked first in total number of publications and total citations, but contributions from Australia and US were also prominent. Literatures in management accounting covered a variety of aspects including management accounting change, environmental management, performance, management accounting practices, organizational change, cost accounting, decision making, information management and several other aspects related to management accounting.

Literature in management accounting were dominated by multiauthored publications. The study indicated that Scapens, R.W. contributed the most articles published and was also the highest cited author on this topic followed with Tayles M. It was not surprising that Scapens, R.W was the top productive author for publishing documents in management accounting because of the challenge to define management accounting. As Scapens, R.W stated in his final editorial in management accounting research: (1) "We deliberately avoid defining management accounting as this could restrict the development of the journal". (2) "I have taken the view that the scope of management accounting is defined by the papers which are in the journal." (Scapens, 2014: 246).

## CONCLUSION

This paper was partly motivated by the fact that journals were used for different types of analysis. Thus, to make an empirical contribution, the Scopus database was used to gather all related literature on MAPs, and a total of 321 documents were retrieved based on the keyword search results. Hence, by doing so, this study can paint a picture of the journals that published and the most influential research that falls under the umbrella of management accounting. Furthermore, expanding knowledge in the field of MAPs as represented by journals.

Recently, the rapid changes of the business environment into a global, competitive and uncertain environment have a significant impact on how people do their business in any type of corporation, either manufacturing

or service, large, medium, or small and non-profit oriented corporations. According to Waweru (2010), the market economy, intense competition, globalisation, scarce resources, change and complexity in the business environment, and accelerating technological changes cause companies to recognise the need for more objective information and awareness of the need for more detailed cost information (Waweru, Houge, and Uliana, 2005). Besides, Garg, Ghosh, Hudick, and Nowacki (2003) emphasised that increasing market competition and uncertainty in the corporate world has placed a great impact on managers to make timely and informed business decisions. Managers must be equipped with multiple skills and seek more rigorous support from all aspects of organisational management to confront the challenges in today's economy.

As a result, the wider role for management accounting in an organization has been argued by many, especially on its contribution to enhancing firms' performance. Though much research has been conducted in management accounting, the majority of it has focused on traditional methods of cost control instead of advanced techniques for measuring financial and non-financial objectives. Hence, this paper provides an in-depth review of methods of assessment on the quality of MAPs quality which seeks to extend the body of literature that concerns the MAPs dimension from the period of 1980 to 2020. On top of that, the researchers anticipated that the analysis of this study would provide better enlightenment to deal with the issues that affect MAPs quality based on a past and recent literature review.

This paper provides a bibliometric review to gain a deeper understanding of the the trends in MAPs literature, historical analysis, forecasts, and contributions. Since 1980, research on this topic has steadily increased every year. Notably, articles related to MAPs were written by various authors. Based on the keywords used by the authors, this study also revealed that the areas of interest in MAPs research are mostly related to management accounting. Other potential topics worth exploring include management accounting and MAPs and management accounting change, organisational change, activity-based costing, decision making, and information management.

The geographic distribution of the literature showed that the United Kingdom (UK) has the most significant number of publications and influence

based on the number of citations as compared to other developed countries, such as Australia and the United States (US). This study proposes that MAPs research be conducted in other Asian countries, such as Thailand, Malaysia, the Philippines, Brunei, Cambodia, Laos, Vietnam, Myanmar, and Indonesia, because the impact of the rapidly changing economic and political landscape is worldwide. So far, there were only 28 published papers on management accounting practices in Malaysia suggesting the need to conduct more research especially in the context of tourism, hospitality, manufacturing and agriculture.

The citation metric disclosed in this paper demonstrates the impact of publications on MAPs. For documents gathered from the Scopus database on management accounting practices, a total of 321 documents were published with 7,103 citations recorded over a 40-year period (1980-2020), resulting in 177.58 citations per year, 22.13 citations per paper, and 0.96 authors per paper.

#### LIMITATION AND STUDY FORWARD

There are a few flaws in the analysis that are inherent in the database used. As a result, while Scopus is one of the largest databases, it should be noted that there are still unindexed journals, and as a result, publications in these journals may have gone unnoticed. In addition, this analysis concentrated only on the subject of MAPs on the basis of the title of the papers. Therefore, other literature relating to accounting practices in management, although not specifically using the word in the title, was also overlooked. It is also worth noting that there is no such thing as a perfect search question, as well as false positive and false negative results. The search query could be expanded to other accessible databases, such as the Web of Science, Google Scholar, and Dimensions, in future studies. It will eventually lead to more exciting and invaluable outcomes by integrating all of these databases.

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