

Performance Measurement: A Systematic Review Approach

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Abstract. Performance measurement is an integral part of the Management Control System and plays a role in preventing financial losses, reputational damage or even organizational failure. The purpose of this study is to provide a mapping of articles discussing performance measurement from 2000 to October 2022. Researchers use publish or perish software to get articles from Scopus with subject areas business, management, and accounting, and subject category accounting. The keyword used is performance measurement. The search found 370 articles. Data is processed using Mendeley Desktop and VOSviewer software. The results showed that the most cited was 851 obtained by Robert S Kaplan with a cite score per year of 40.52.

Keywords: Performance Measurement, Performance Measurement System, Systematic Review.

1 Introduction

The constantly changing needs and demands of consumers [2] and the changing environment make performance measurement a crucial factor for companies [3]. The company strives for survival through competition and achieving the company's vision. It is common knowledge that performance measurement is critical for company effectiveness and efficiency [4]. Companies need measurements that can monitor and know the company's performance and compare it with the targets that have been set [5]. This is in line with the phrase "what you measure is what get" which is often expressed in management control systems [1].

The company needs to achieve performance and report it to stakeholders [6]. Literature studies on performance measurement and management control have grown significantly in the last few decades [7]. There are a number of terms that use performance measurement, including performance measurement and management [5][4], performance measurement system [8], contemporary performance measurement [9], strategic performance measurement [10]. This diversity encourages researcher to map out articles on performance measurement published between 2000 and October 2022. Research question in this study are as follows:

- (1) What are the citations to performance measurement articles in 2000-2022?
- (2) What is the trend of publication of performance measurement articles in 2000-2022?
- (3) How is the author's collaboration on performance measurement articles in 2000-2022?
- (4) What is the trend of title term in performance measurement articles in 2000-2022?
- (5) What are the publisher on performance measurement articles in 2000-2022?

This paper could contribute to the management accounting literature through mapping topics related to performance measurement and future research directions.

2 Literature Review

Performance measurement can be defined as the process of quantifying the efficiency and effectiveness of an action [11]. Performance measurement is a measuring tool, representing management and control systems that produce information to be shared with internal and external parties [12]. The concept of performance measurement has evolved, from being previously based on financial measurement indicators and as a component of the planning and control cycle to a more holistic approach based on various non-financial measurement indicators and acting as an independent process integrated with various activities.

Traditionally, performance measurement is seen as an element of planning and control mechanism that displays performance data, functions as feedback control that influences work behavior and monitors strategy implementation. In a holistic view, performance measurement plays an important role in developing a strategic plan, evaluating the achievement of organizational goals and acting as a signal and learning tool.

Performance measurement system can be defined in three different levels, that is (1) individual performance measurement (2) the set of performance measurement, performance measurement system as one entity and (3) the relationship between performance measurement systems and the environment in which the company operates [11]. Performance management system is a set of measuring tools that measure company performance [13], consists of various system dimensions, including financial and non-financial, internal and external that have an impact on the environment in which the company operates [14]. The purpose of a performance measurement system is to convert data into information to assess the effectiveness and efficiency of an action [11].

Performance Measurement and Management (PMM) is a system that consists of various aspects of measurement and perspective to provide a complete picture of the organization. PMM continuously monitors the company's internal and external conditions, evaluates company goals and priorities that can support decision making by describing and analyzing available information [5]. The PMM system consists of two components [4]. The first component is the performance measurement system, while the second component is the performance management system. Performance measurement system includes the process of setting goals, collecting, analyzing and interpreting data. Performance management system includes the process of assessing differences in achievement and expected targets, identifying and giving priority if the differences are critical, then take corrective actions to minimize performance differences [4].

Cotemporary Performance Measurement (CPM) is defined with a focus on the needs and conditions that surround it, this system exists if there are measurements with financial and non-financial indicators that are used to operationalize strategic objectives [9]. This definition is based on three assumptions, namely (1) the role of CPM is to evaluate performance for both information and motivation purposes, (2) has a clear information system that is facilitated by the company in the form of enterprise resources planning or business intelligence solutions and (3) the CMP system is involved in specific processes or information, measure the data, and process it.

Strategic Performance Measurement (SPM) is defined as a system that translates the company's strategy into results that can be obtained. SPM is a combination of measuring aspects of financial, strategic and business processes to measure how well the company is performing in achieving the targets that have been set [10]. The approach used in strategic performance measurement is to complement traditional financial measurements so that it can measure key strategic performance from other dimensions that have not been accurately reflected in short-term accounting measurements. SPM can provide information that will help companies identify strategies that have the highest potential in achieving company goals and align management processes such as target setting, decision making with achievements obtained through the chosen strategy [10].

In general, the measures used in measuring performance are divided into three categories, namely [1]:

1. Market measure, which is reflected in share price or shareholder level
2. Accounting measures, can use ratios, such as return on investment, return on equity, or residual value, such as net income after tax, operating profit
3. Combined measures, using another measure besides market measure or accounting measures as additional information for management.

The two measures mentioned earlier are included in the category of financial measures because they use currency, ratios in financial numbers, or changes in financial numbers [1]. The use of traditional accounting measures as the only source of performance measurement has begun to be abandoned, and is replaced by key performance indicators which in addition to focusing on financial aspects also focus on non-financial aspects [15]. The development of the use of other measures to complement financial measures began to increase dramatically in the early 1990s [14].

3 Research Method

This study uses bibliometrics, namely research that tries to map clearly on a theme that has been discussed in publications, bibliographic citations, and surrogate for them [16]. The term bibliometric was first used in the journal of documentation, in December 1969. There are two articles using the word bibliometric in that journal. The first article was written by RA Fairhorne with entitled Empirical Hyperbolic Distribution (Bradford-Zipf-Mandelbrot) for Bibliometric Description and Prediction, the second article that became very famous was Statistical Bibliography or Bibliometrics? Written by A Pritchard [16].

Systematic review is special literature review that confers added advantage, characterized by being methodical, comprehensive, transparent, and replicable [17]. There are several advantages of systematic reviews, namely, firstly, they tend to be of higher quality, more comprehensive and less biased, secondly, they are relatively safe with academic markers and peer review journals [17]. Literature review is needed for new research to expand the existing knowledge and provide a better framework for understanding performance measurement.

Researchers use publish or perish software to get articles related to performance measurement. Search using database from Scopus with subject areas business, management, and accounting, and subject category accounting. The title word used for filtering is performance measurement.

The obtained file is opened by the Mendeley Reference Manager and the Mendeley Desktop. Researchers use Mendeley desktop as a complement to Mendeley Reference Manager because author keyword updates can only be done on Mendeley Desktop. The author keyword feature does not exist in the Mendeley reference manager, whereas the information

generated by this field is needed by Vosviewer to analyze co-occurrence. Furthermore, the file is exported to Vosviewer for analysis.

4 Result and Discussion

4.1 Citation Analysis

What is generally accepted in research is that the researcher refers to previous research in the same field and includes the name of the previous researcher in his report. This will document previous research where the concepts, theories, methods or tools used have inspired researchers in conducting their research [18]. Citation analysis provides a representation of data by selecting and reconstructing objects based on a citation index, so it is often seen as a type of data-driven study [19].

Table 1 shows the five authors whose articles were cited the most. The total number of citations from 370 articles on performance measurement since 2000 to 2022 is 12.518. Total cites per year is 1.205,56. There are 54 articles that have never been cited, and 23 articles that have only been cited once.

Table 1. Top Five Highly Cited Articles
Source processed secondary data, 2022

No	Author	Title	Year	Cites	Cite Per Year
1	R, Kaplan	Transforming the balance scorecard from performance measurement to strategic management: Part I	2001	851	40,52
2	C. Ittner	Performance implication of strategic performance measurement in financial service firm	2003	614	32,32
3	R. Chenhall	Integrative strategic performance measurement system, strategic alignment of manufacturing, learning and strategic outcome: An exploratory study	2005	511	30,06
4	S. Brignall	An institutional perspective on performance measurement and management in the 'new public sector'	2000	454	20,64
5	M. Franco-Santos	Cotemporary performance measurement systems: A review of their consequences and a framework for research	2012	373	37,30

4.2 Trend of Publication of Performance Measurement

The trend of publishing articles with the title performance measurement is shown in Figure 1. On average, 16 journals on performance measurement are published every year from 2000 to 2022. The most published articles occurred in 2014 with 27 articles, while the least number of articles published in one year occurred in 2002 with 5 articles. Articles published between

2011 and 2022 reached 63%, while from 2000 to 2010 it reached 37%. This shows that the interest in writing on the theme of performance management is still quite high.

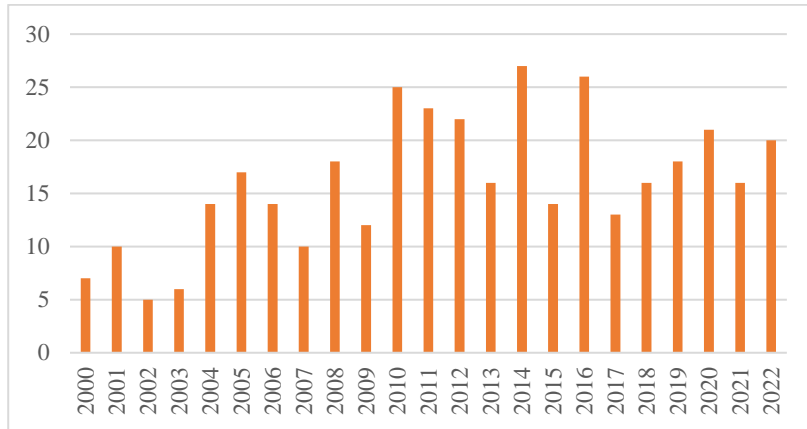


Figure 1 Publication of Performance Measurement Article From 2000 – 2022
Source Processed Secondary Data, 2022

4.3 Author Collaboration Analysis

The selection criteria for a minimum of 3 articles resulted in 23 authors from 659 authors who surpass the threshold and formed 19 clusters. 4 of the clusters consist of 2 authors while the remaining 1 author of the clusters consist of 2 authors while the remaining 1 author. The 4 clusters are Suresh Cuganesan and James Guthrie, Robert H Chenhall and Matthew Hall, Peter Harris and Marco Mongiello, Marko Javenpaa and Antti Rautianinen

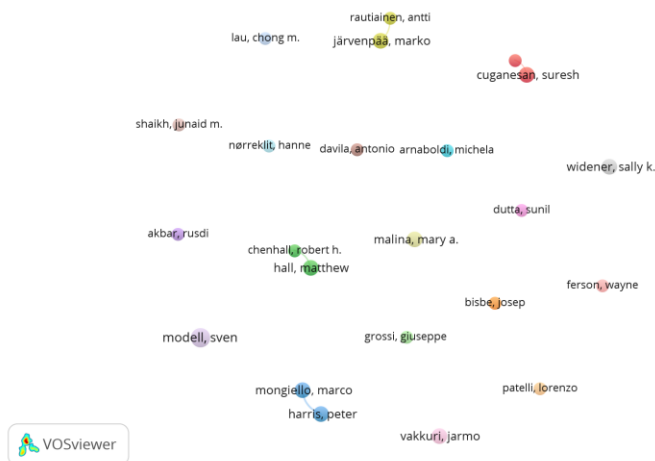


Figure 2 Author Collaboration Visualization
Source Processed Secondary Data, 2022

4.4 Title Word Analysis

The selection of the minimum 5 occurrence criteria resulted in 20 keywords from 816 keywords that surpass the threshold. The keywords that have the strongest total link strength are performance measurement with a total link strength of 48 out of 84 occurrences, followed by balanced scorecard total link strength 23 out of 18 occurrences, performance management total link strength 22 out of 15 occurrences, institutional theory total link strength 19 out of 11 occurrence and performance measurement systems total link strength 17 of 27 occurrences.

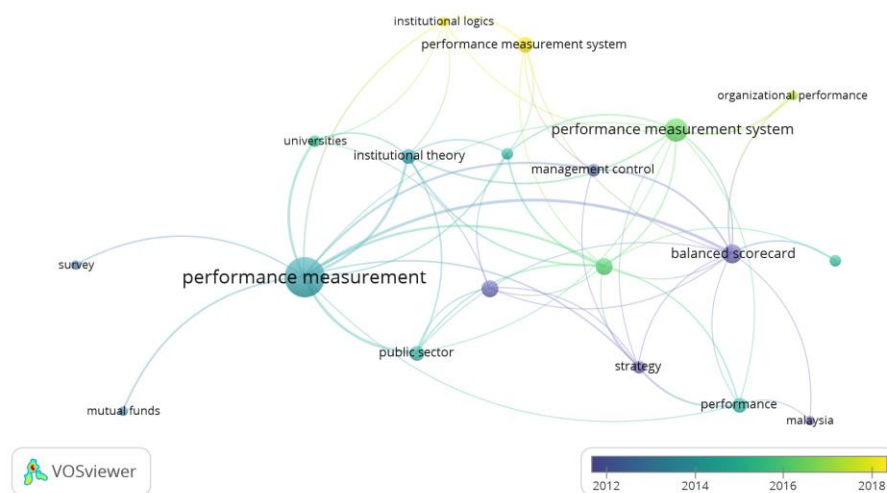


Figure 2 Title Word Visualization and Connection
Source Processed Secondary Data, 2022

4.5 Publisher Analysis

Table 2 shows the 10 journals that contributed the highest in publishing articles related to performance measurement from 2000 to 2022. Journal Management Accounting Research contributed the most with the number of articles 28. There are 2 journals in the table that do not have Scimago Quartile and Scopus SJR 2021, because they are not published in 2021. Studies in Managerial and Financial Accounting was published from 2008 to 2018, while Advances in Management Accounting was published from 2003 to 2008, and from 2010 to 2019.

In total there are 117 journals that contribute to the publication of articles related to performance measurement. There are 58 journals contributing 1 article, and 23 journals contributing 2 articles.

Table 2. Top Ten Distribution of Article by Journal Rank, Impact Factor, and Citations Source Processed Secondary Data, 2022

Journals	Number of Documents	Journal Rank			Citations
		Scimago Quartile	H Index	Scopus SJR 2021	
Management Accounting Research	28	Q1	H-91	1,07	3.042
Studies in Managerial and Financial Accounting	21	-	H-9	-	55
Accounting, Organizations and Society	19	Q1	H-140	2,20	3.173
Advances in Management Accounting	17	-	H-14	-	81
Financial Accountability and Management	15	Q1	H-46	0,73	517
Accounting, Auditing and Accountability Journal	13	Q1	H-105	1,47	384
Qualitative Research in Accounting and Management	12	Q2	H-30	0,48	172
Journal of Accounting and Organizational Change	11	Q2	H-29	0,46	131
British Accounting Review	9	Q1	H-72	1,32	291
Managerial Auditing Journal	8	Q2	H-61	0,45	113

5 Conclusion

A systematic review of the title word performance measurement in the Scopus database in the category subject areas of business, management, and accounting, and subject category accounting between 2000 and 2022 found 370 articles. The article written by Robert S Kaplan on transforming the balanced scorecard into strategic management was the article that received the most citations, followed by Christopher D. Ittner's article which discussed the implications of implementing strategic performance measurement on performance. The third most cited article is Robert H. Chenhall's article which discusses the integration of strategic performance measurement systems, strategic alignment and strategic outcomes.

There are similarities between the three articles. The three discussed the need for additional indicators to complement financial indicators as a measurement of company performance. The performance measurement tool is designed to provide information on financial and non-financial measurement which includes several different perspectives that will combine to translate strategies into various performance measurement indicators [20].

Most articles, namely 63%, were published between 2011 and 2022. This indicates that the interest of researchers to discuss performance measurement is still quite high. Moreover, environmental conditions that continue to change will also affect the performance measurement system used [13], so that research opportunities on performance measurement in the future are still open.

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