Maksimum: Media Akuntansi Universitas Muhammadiyah Semarang, Vol 16 (No.2) 2026, 184-199

https://jurnal.unimus.ac.id/index.php/MAX

Nationally Accredited based on the Decree of the Minister of Higher Education, Science, and Technology of the Republic of Indonesia, Number 0173/C3/DT.05.00/2025

Mapping of Performance Measurement Models in Public Sector Organizations: a Hybrid Review

Nuwun Priyono[1*], **Puji Harto**[2]

[1,2] Department of Accounting, Universitas Diponegoro, Indonesia
*Corresponding Author

Info Article

History Article:
Submitted: February 16, 2026
Revised: March 25, 2026
Accepted: June 05, 2026

Keywords:
Performance Measurement, Public Sector, Balanced Scorecard, Literature Review

Abstract

This study aims to map the various performance measurement models currently in use and their contribution to improving the performance of public sector organizations. This study uses a hybrid review method that combines bibliometric and literature review approaches. The bibliometric review uses Vosviewer visualization and citation counts. The Systematic Literature Review (SLR) uses the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) method, with an observation period from 2005 to 2025. This research focuses on a long-term period, enabling it to capture longitudinal trends in the development of performance measurement models. This research not only maps the models but also identifies the dominant models and analyzes their contribution to improving organizational performance. Using Publish or Perish, 200 articles were obtained from Scopus; however, only 26 articles included the compiled terms. The results of the hybrid review research show that, of the 26 articles, 18 map various performance measurement models. The most widely used model is the study named Balanced Scorecard (BSC). Some other models include the concept of value for money, the Public Sector Scorecard (PSS), and the balanced stakeholder model. The articles that met these criteria included one with the highest number of citations (94) and two with no citations. Then, 26 articles explain how various measurement models contribute to improved performance in public-sector organizations. Performance measurement models have been proven to contribute to improving the effectiveness and efficiency of public sector organizations, supporting performance-based decision-making and enhancing public accountability. This study integrates the principles of bibliometric and structured reviews to map performance measurement models and their contributions to improving the performance of public sector organizations. Theoretical implications: enrich the literature on performance measurement models through an integrative approach and demonstrate that no single model is superior. Strengthens the Balanced Scorecard's position as the dominant model, while still allowing for the development of alternative models. Practical implications: provide guidance for organizations on selecting and adapting performance measurement models that suit their needs and encourage a multi-model approach.

JEL Classification: H83, M41, H11

How to Cite: Priyono, N. & Harto, P. (2026). Mapping of Performance Measurement Models in Public Sector Organizations: A Hybrid Review. *Maksimum: Media Akuntansi Universitas Muhammadiyah Semarang, 16(2), 184-199.*

DOI: 10.26714/MKI.16.2.2026.184-199

Introduction

The increasing complexity of public sector organizations has intensified the need for comprehensive performance measurement models. However, existing studies remain fragmented and tend to focus on specific models without providing an integrative understanding of their development and contributions. Research results show that, overall, the government's performance in Tanzania fell by 39.43% due to poor financial performance compared to non-financial performance (Ngomuo & Wang, 2015). According to Johnston and Jones (2004), as quoted by Hamid et al. (2016) disclose that in three decade Lastly, criticism to performance government has appearing all over the world from various spectrum politics , such as : government no efficient, not effective, too big, too expensive, too bureaucratic , burdened by rules that are not need , no responsive to wants and needs public, full secret, no democratic, violating rights personal citizens, prioritize self alone, and failure in provision quantity and quality decent service accepted by society payer tax.

Measuring the performance of public sector organizations has become a strategic issue as demands for accountability, transparency, and effectiveness in public services increase. Public sector reforms moving toward performance-based management require a performance measurement system capable of evaluating not only financial aspects but also outcomes and public impact. However, various models such as the Balanced Scorecard and Value for Money are still used in diverse ways and have not demonstrated consistent implementation in the public sector (Dooren et al., 2015; Moynihan, 2008).

Furthermore, the complexity of public-sector organizational objectives, which involve multiple stakeholders, makes performance measurement more difficult than in the private sector (Bouckaert & Halligan, 2008). Previous studies have also shown that research on performance measurement models has been partial and has not provided a comprehensive mapping of model development and its contribution to improving organizational performance (Arnaboldi et al., 2015). Existing review studies tend to rely either on bibliometric analysis, which primarily emphasizes publication trends and citation patterns, or on Systematic Literature Reviews (SLR), which focus on qualitative synthesis but often lack a broader mapping of thematic evolution and model dominance. Consequently, the current literature has not yet offered a comprehensive framework that explains how different performance measurement models contribute to organizational effectiveness, accountability, and performance-based governance. To address these limitations, this study adopts a hybrid review approach that integrates bibliometric analysis and a PRISMA-based SLR to generate a more holistic and systematic mapping of performance measurement models in the public sector.

There are various problems with measuring performance, especially in public-sector organizations. Implementation of performance measurement in government areas in Sarawak meets obstacles, namely: lack of knowledge and awareness of employees in applying the framework for performance measurement (ISO 9000, BSC, and KPI), and considering it too complicated and difficult to apply; therefore, a new performance measurement model needs to be created (Hamid et al., 2016).

System measurement performance in the Australian government is only effective with respect to outcome performance, and less effective with respect to staff achievement outcomes. This shows that the Performance Measurement System (PMS) is not as effective as it should be in achieving the desired organizational outcomes Baird et al. (2012) and supports the study by Dollery and Johnson (2005), which states that it is more efficient at providing services to government agencies.

Public sector organizations use management performance and measurement systems to increase efficiency and effectiveness in providing services (Dooren et al., 2015). Many measurement models for current performance have been implemented in public-sector organizations. Measurement models of public sector performance are through a demand and supply approach Dooren (2006); measurement models are applied using 3 models, namely the 3E model (Economy, Efficiency, and Effectiveness), the IOO model (Input, Output, and Outcome), and the Balanced Scorecard (BSC) model Gębczyńska and Brajer-Marczak (2020); and the

AHP (Analytic Hierarchy Process) model in Local Government (Nilasari et al., 2023). Measurement models applied in the public sector improve its performance.

Research on public sector organizational performance measurement has developed using various approaches and models, such as the Balanced Scorecard, Value for Money, Public Sector Scorecard, and the balanced stakeholder model (Betto et al., 2022; Khalid et al., 2019; Meričková et al., 2020; Moullin, 2009, 2017; Zheng et al., 2019). Previous studies generally focused on applying or testing a particular model in a specific organizational context, resulting in a partial understanding. On the other hand, several studies have used bibliometric methods or Systematic Literature Reviews with the PRISMA approach to review the literature, but they tended to be conducted separately and did not integrate quantitative analysis (trend mapping and citations) with qualitative analysis (model contributions). Thus, there is no comprehensive study that can map the development of performance measurement models and explain their contribution to improving the performance of public sector organizations in a structured and comprehensive manner.

The novelty of this study lies in its integration of quantitative bibliometric trends with qualitative evidence from an SLR Bahoo et al. (2020), thereby providing a more comprehensive understanding of the development, dominance, contextual application, and contributions of performance measurement models in public sector organizations. This integrated approach enables the study to explain not only which models dominate the literature, but also why certain models become dominant and how they contribute to organizational effectiveness and public accountability. Furthermore, this study uses a long time span (2005–2025) and a rigorous literature selection process, resulting in a more comprehensive and in-depth synthesis.

This study aims to map the various performance measurement models currently in use and their contribution to improving the performance of public sector organizations. This research makes a theoretical contribution by enriching the literature on public-sector organizational performance measurement through a hybrid review approach that integrates bibliometric analysis with a PRISMA-based Systematic Literature Review. In practice, this research provides guidance for public sector organizations on selecting and developing performance measurement models that suit their characteristics and needs.

Literature Review

Performance measurement is an analytical process for evaluating how well an organization is managed and how well it serves the interests of customers and stakeholders (Choi, 2020; He et al., 2017). Performance measurement focuses on the effectiveness and results management of business and quality goods and services, as well as on satisfying customers, which can increase organizational performance (Balabonienė & Večerskienė, 2015). Measurement and performance management are important for implementing organizational strategy Bititci et al. (2006) and offer flexibility to the organization (Maestrini et al., 2017). In addition, performance measurement and management strive to optimize the distribution of source power and provide effective decisions for organizational management Berrah et al. (2004), which can lead to high organizational performance (Franco-Santos et al., 2012).

System management and performance measurement are more important for public organizations. Development and implementation of effective management systems can drive the creation of value by the public organization (Sole, 2009). A Performance Measurement System (PMS) is designed to implement organizational strategies, signal to employees what is important in the organization, establish accountability for behavior and results, and help increase effective organizational performance (Bae, 2006; Biron et al., 2011). System management performance will serve as a bridging strategy to connect needs and expectations with group interests (Abad et al., 2016). System management performance has three benefits: reducing underperformance, sustaining good performance, and improving performance (Lee, 2005). Therefore, implementation management performance needs improvement (Roh, 2018).

Research on public sector performance measurement encompasses a variety of models, approaches, and organizational contexts, making it difficult to gain a comprehensive understanding without systematic synthesis. SLR allows researchers to identify, evaluate, and synthesize all relevant scientific evidence in a structured and objective manner, thus providing a comprehensive overview of developments, trends, and existing research gaps (Looy & Shafagatova, 2016). Furthermore, in the public sector context, the complexity of organizational goals, the diversity of stakeholders, and the variety of performance indicators lead to heterogeneity in performance measurement approaches, necessitating a systematic review to clarify the concepts, models, and determinants that influence organizational performance (Febriyanti et al., 2024). The use of SLR is also important because it can comprehensively integrate various research findings and identify best practices as well as areas that still require further development, thus providing a strong foundation for the development of public sector performance measurement theory and practice (Pratiwi & Pagalung, 2025).

This study is based on institutional theory. Experts' theory argues that beliefs and rules adhered to in a wide organizational environment often influence structure and behavior, regardless of technology and relationship exchange, as sources of their power (Scott, 1987; Zucker, 1987). Institutional theory posits that organizations are shaped by institutionalized practices and experiences, which historically construct normative models of organizational legitimacy (Oakes et al., 1998). DiMaggio and Powell (1983) identify three mechanism change isomorphic that occurs in institutional, namely: isomorphism coercive happen when a organization adopt practice certain Because pressure applied from other parties who are more tall its authority; isomorphic mimetic happen in condition uncertainty when organization copy other organizations in their field that they consider more legitimate or success; and isomorphism normative especially originate from pressure group professional.

Method

This study uses a hybrid review approach that combines bibliometric and literature reviews (Bahoo et al., 2020). Bibliometric reviews analyze relevant research themes and examine citation counts in articles on public-sector organizational performance measurement models. Literature reviews, on the other hand, are conducted using traditional and systematic methods. The traditional approach is more subjective because there are no clear criteria for selecting articles, and the analysis is limited to a few publications (Ahmad et al., 2020; Tranfield et al., 2003). The systematic method, more commonly known as the Systematic Literature Review (SLR), is carried out in several stages, starting with planning, research, analysis, and reporting (Gabrielsson, 2017). This approach begins with a bibliometric study and ends with an SLR.

This Bibliometric study employs technical stages for using Publish or Perish software and Vosviewer (Husaeni & Nandiyanto, 2022). SLR uses the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) (Liberati et al., 2009; Moher et al., 2009). A comprehensive inspection of existing literature was conducted using the PRISMA work stages framework, with a focus specifically on empirical research (Vo & Simmie, 2024). In this study, the article search was conducted using Publish or Perish software and the Scopus database. The search string employed was: TITLE-ABS-KEY ("performance measurement model" AND "public sector organization"). The search was limited to English-language journal articles published between 2005 and 2025. The selection of this period was based on the consideration that the last two decades represent a significant phase in the development of public sector reforms driven by New Public Management, digital governance, and performance-based governance, which have encouraged the emergence and development of various performance measurement models in public sector organizations. Furthermore, this time span enabled the study to capture the longitudinal evolution of the literature, including changes in research themes, dominant models, and trends in the contributions of performance measurement models. Through the Publish or Perish search process, a total of 200 Scopus-indexed articles were identified. These articles were retrieved on March 24, 2025.

Bibliometric analysis was conducted using VOSviewer through a co-occurrence analysis approach of author keywords and indexed keywords. This analysis aimed to identify relationships among research themes, dominant clusters, and the conceptual interconnections among performance measurement models within public sector organizations. The VOSviewer visualization presented in Figure 2 indicates that the keywords "performance," "model," and "balanced scorecard" exhibit the strongest connections with several other themes, including public organization, quality, leadership, effectiveness, excellence, and public sector performance.

Result and Discussion

Study: This study uses Publish or Perish in a search for articles based on Scopus, which obtained 200 articles from 2005 to 2025, as seen in Figure 1 below:

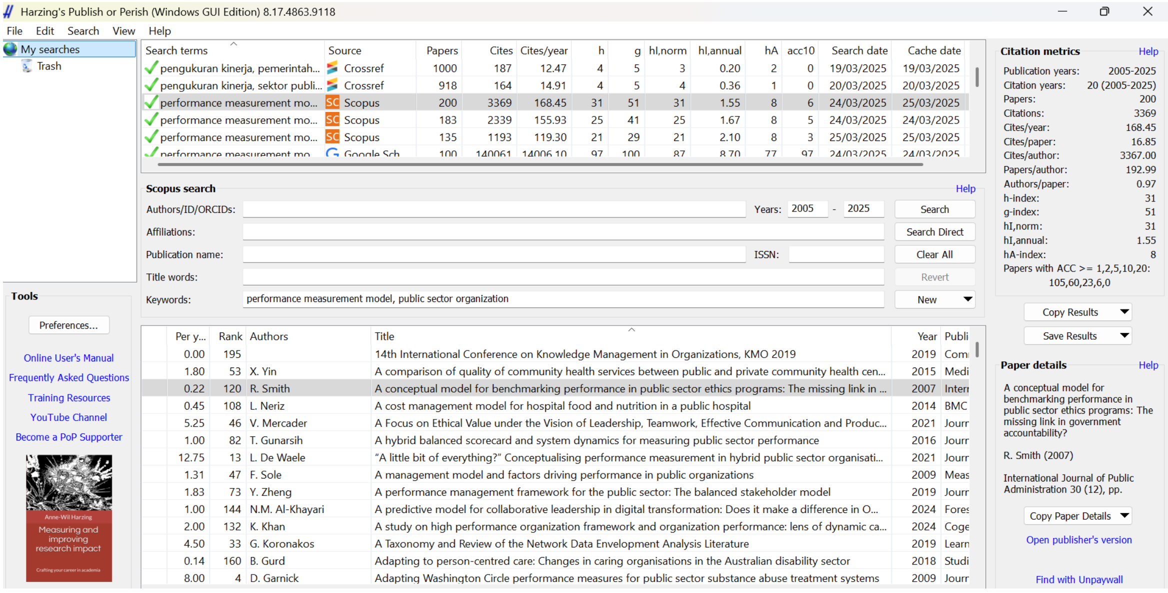

Figure 1. Search Process through Publish or Perish
Source: Publish or Perish, 2025

Based on Figure 1 above, we can see that articles based on Scopus obtained as many as 200 articles from the period 2005-2025. Then, using Vosviewer, we can identify thematic items to develop a measurement model for performance research in public-sector organizations. The theme is still relevant for investigation in the study of the public sector, as seen in image 2 below:

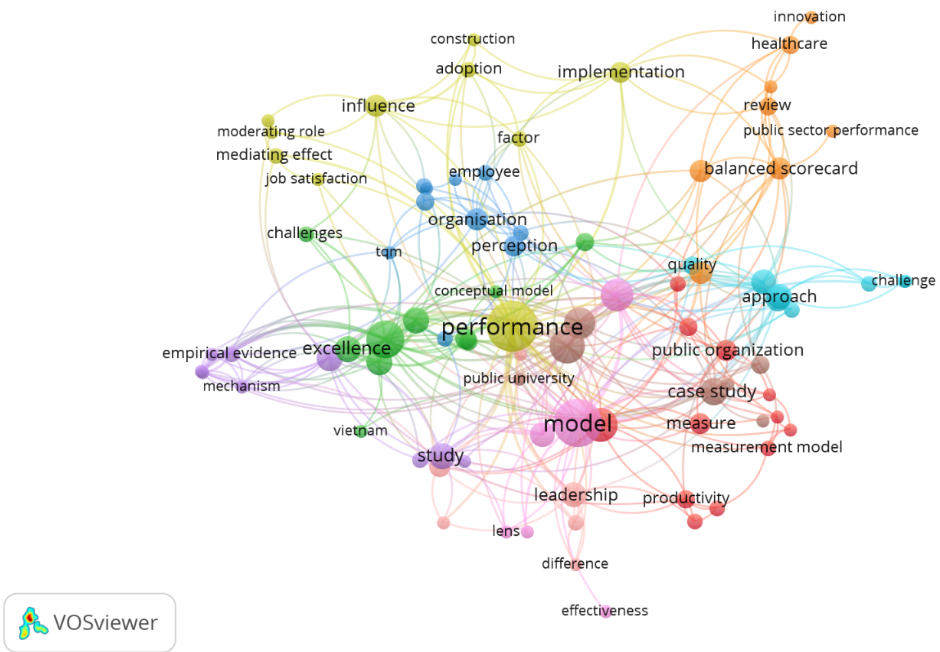

Figure 2. Mapping of Performance Measurement Model Themes
Source: processed with Vosviewer (2025)

Figure 2 above shows that the study on measurement model theme performance remains relevant to research. Themes are also related to other themes, such as BSC, public sector performance, and effectiveness.

Furthermore, with the PRISMA stages framework, the study started with 200 articles selected and obtained 26 articles. The article selection criteria (inclusion) are as follows: language used is English, articles published in international journals between 2005 and 2025, articles that explain measurement model performance in the public sector, and articles available in complete text form. Criteria for articles that do not pass selection (exclusion) are: articles not available in complete text form, articles not discussing the research theme, and articles not using a relevant research method.

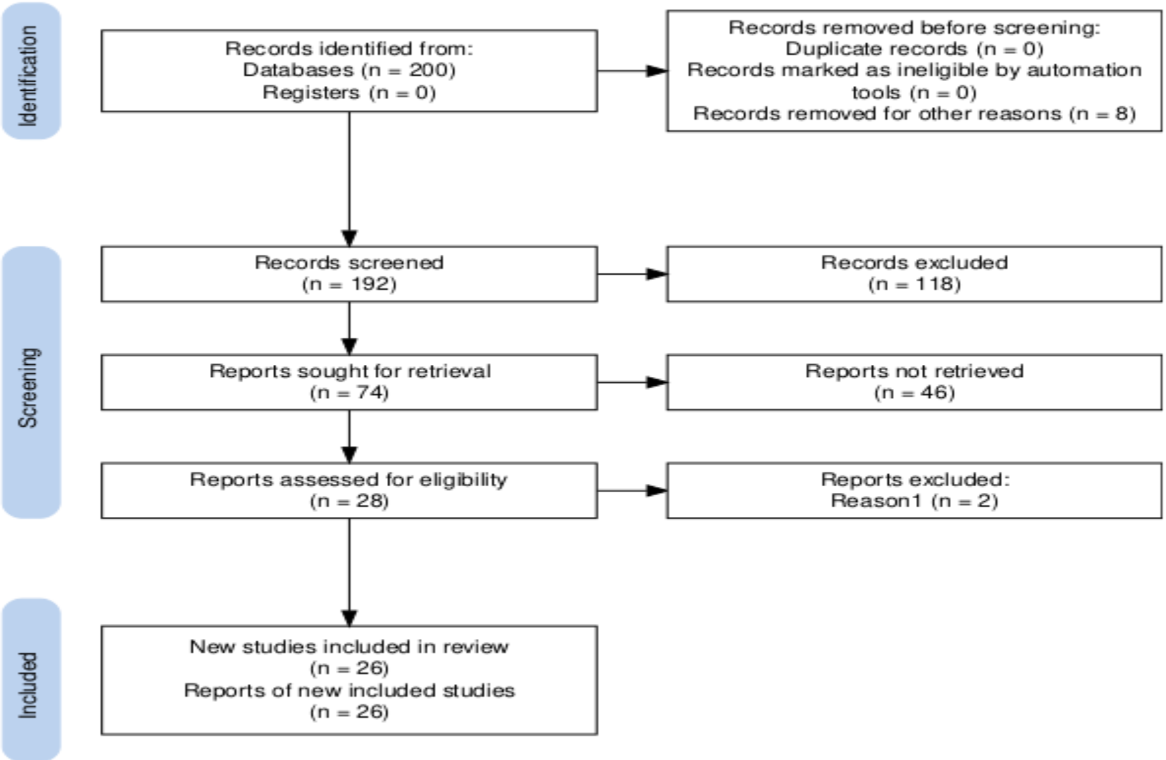

Figure 3. Flow Chart of Inclusion and Exclusion Process based on the PRISMA Framework
Source: Processed by the author 2025, adapted from (Liberati et al., 2009; Moher et al., 2009)

Based on Figure 3, the article selection process began with the identification of 200 Scopus-indexed articles, followed by a selection procedure using the PRISMA framework. During the identification stage, 8 articles were excluded: 7 without author names and 1 with an incomplete title, resulting in a total of 192 articles. In the screening stage, 118 articles were excluded for not aligning with the theme of performance measurement models, leaving 74 articles for further review. Subsequently, among these 74 articles, 46 were excluded because, although they addressed performance measurement models, they were outside the context of public sector organizations, leaving 28 articles. In the final stage, 2 incomplete articles were excluded, resulting in a final sample of 26 articles, which were further analyzed to address the study's research questions. Of the 26 articles that met the criteria, a deep analysis was conducted using SLR. Table 1 below maps the performance of various measurement models reported in the articles.

Table 1. Mapping of Public Sector Organization Performance Measurement Models

No.	Author and Year	Journal Name or proceedings	Amount Citation	Performance Measurement Model
1	Edward et al. (2011)	PLoS Medicine	94	Balanced scorecard
2	Lundberg et al. (2009)	Journal of Cleaner Production	55	Environmental performance measurements Framework

No.	Author and Year	Journal Name or proceedings	Amount Citation	Performance Measurement Model
3	Tomaževič et al., (2016)	Total Quality Management and Business Excellence	33	Common Assessment Framework (CAF)
4	Prybutok et al. (2011)	Socio-Economic Planning Sciences	25	Malcolm Baldrige National Quality Award (MBNQA) Model
5	Tomaževič et al., (2017)	Total Quality Management and Business Excellence	23	Organisation theory-based performance management model
6	Khalid et al. (2019)	Meditari Accountancy Research	22	Balanced scorecard
7	Betto et al. (2022)	International Journal of Environmental Research and Public Health	21	Balanced scorecard
8	Zheng et al., (2019)	Journal of the Operational Research Society	11	Balanced stakeholder model
9	Moullin (2009)	Nursing management (Harrow, London, England: 1994)	11	Public sector scorecard model
10	Gunarsih et al. (2016)	Journal of Engineering Science and Technology	9	A hybrid balanced scorecard (BSC is combined with System Dynamics)
11	Barlage et al. (2014)	Policy Studies	7	Multi-Trait–Multi-Method (MTMM) model
12	Meričková et al. (2020)	Scientific Papers of the University of Pardubice, Series D: Faculty of Economics and Administration	6	Value for money concept
13	Demo et al. (2024)	RAUSP Management Journal	4	Human Resources Management (HRM) practices model
14	Siti-Nabiha and Fuad (2011)	International Journal of Managerial and Financial Accounting	3	BSC; Performance prism; Performance pyramid system; European Foundation for Quality Management (EFQM) excellence model; and Results and determinants matrix
15	Usta (2012)	Amme Idaresi Dergisi	2	Balanced scorecard
16	Sole and Schiuma (2010)	Business Performance Measurement and Management: New Contexts, Themes and Challenges	1	A holistic performance management model
17	Mohamud and Jusoh (2023)	AIP Conference Proceedings	-	Rasch measurement model
18	Barros (2025)	Journal of Public Budgeting, Accounting and Financial Management	-	Balanced scorecard

Of the 26 articles that passed through the PRISMA stages, 18 are shown in Table 1 above, which clearly present various types of measurement models and their performance in public sector organizations, while the rest do not clearly specify a measurement model for the intended performance. Based on the mapping results, performance measurement models in public sector organizations have evolved in a broad and multidimensional manner, with certain models dominant and various complementary and alternative approaches emerging. Among these models, the Balanced Scorecard (BSC) emerged as the most dominant model, appearing in seven articles. The dominance of the BSC can be attributed to its strong theoretical foundation and its ability to integrate financial and non-financial perspectives into a comprehensive strategic management framework. Within the context of public sector organizations, the BSC is considered highly adaptable, as it enables organizations to translate their vision and strategic objectives into measurable performance indicators across multiple dimensions, including service quality, internal processes, stakeholder orientation, and organizational learning. Furthermore, the model supports performance-based decision-making, strategic alignment, and public accountability, which constitute central elements of contemporary public sector governance reforms. Despite its widespread adoption, the literature highlights several limitations of the BSC, including implementation complexity, substantial data and resource requirements, and a limited capacity to comprehensively capture the dimensions of public value, social legitimacy, and the distinctive characteristics of public-sector bureaucracy.

Various other performance measurement models identified in the literature include the Value for Money concept, Public Sector Scorecard, Balanced Stakeholder Model, Environmental Performance Measurement Framework, Common Assessment Framework (CAF), Malcolm Baldrige National Quality Award (MBNQA) Model, organisation theory-based performance management model, hybrid Balanced Scorecard (a combination of BSC and system dynamics), Multi-Trait–Multi-Method (MTMM) model, Human Resources Management (HRM) Practices Model, Performance Prism, Performance Pyramid System, European Foundation for Quality Management (EFQM) Excellence Model, Results and Determinants Matrix, holistic performance management model, and Rasch measurement model. Alternative models such as Value for Money (VfM), Public Sector Scorecard (PSS), and the Balanced Stakeholder Model provide complementary perspectives that address several limitations of the Balanced Scorecard (BSC). The Value for Money approach primarily emphasizes efficiency, effectiveness, and economy in the utilization of public resources, making it particularly relevant for financial accountability and budget performance evaluation. Meanwhile, the Public Sector Scorecard (PSS) extends the strategic orientation of the BSC by incorporating broader dimensions of governance capacity, stakeholder engagement, and public value outcomes that are more closely aligned with the characteristics of public sector organizations. Similarly, the Balanced Stakeholder Model highlights the importance of balancing the interests of multiple stakeholders in evaluating organizational performance.

The hybrid balanced scorecard combines the BSC with a system dynamics approach Gunarsih et al. (2016), indicating a need to improve the model's ability to capture complex system dynamics. Beyond this dominance, there is a group of models oriented towards quality management and organizational excellence, such as the Common Assessment Framework Tomaževič et al. (2016) and the Malcolm Baldrige National Quality Award Prybutok et al. (2011), as well as the European Foundation for Quality Management (EFQM) model, which emerged in the study by (Siti-Nabiha & Fuad, 2011). These models emphasize the importance of improving service quality, continuous evaluation, and achieving excellence in organizational performance. Furthermore, approaches based on organizational theory Tomaževič et al. (2017) and holistic models Sole and Schiuma (2010) seek to understand organizational performance by considering interactions among internal and external factors.

Furthermore, the mapping reveals models that focus on stakeholder interests and the distinctive characteristics of the public sector, such as the Balanced Stakeholder Model Zheng et al. (2019) and the Public Sector Scorecard Moullin (2009), which emphasize the importance of balancing diverse public interests and accountability. On the other hand, efficiency- and economy-based approaches, such as the value-for-money concept Meričková et al. (2020), emphasize optimizing the use of public resources. Other models, such as the environmental performance measurement framework Lundberg et al. (2009), highlight the environmental sustainability dimension, while the Human Resource Management (HRM) practices model Demo et al. (2024) emphasizes HRM's role in achieving organizational performance.

Furthermore, there are more specific methodological approaches, such as the Multi-Trait–Multi-Method (MTMM) Barlage et al. (2014) and the Rasch measurement model Mohamud and Jusoh (2023), which focus on the validity and reliability of performance measurement. This diversity demonstrates that public sector performance measurement evolves not only in conceptual frameworks but also in measurement methods. Overall, the results of this mapping confirm that no single model is universally superior, but rather that various models are used adaptively and contextually. The twelve performance measurement models mentioned above are currently still widely applied in public sector organizations.

The SLR study successfully obtained 26 selected articles, which briefly discuss the contribution of public sector performance measurement models as described in Table 2 below:

Table 2. Literature Review

No.	Author and Year	Journal Name or proceedings	Amount Citation	Contribution of Performance Measurement Models
1	Edward et al. (2011)	PLoS Medicine	94	The BSC has been successfully used to assess and improve health service capacity and service delivery.
2	Lundberg et al. (2009)	Journal of Cleaner Production	55	Framework Pressure-State Response (PSR) and Management-By-Objectives (MBO) is component important in strategy for reach development sustainable in a way ecological.
3	Goh (2012)	Measuring Business Excellence	39	There are three important factors in implementing a performance measurement system in the public sector, namely: managerial policy, organizational culture and stakeholder involvement.
4	Jarrar and Schiuma (2007)	Measuring Business Excellence	36	Need for increase accountability and orientation focus customer has push implementation system measurement performance for increase efficiency and performance.
5	Tomaževič et al., (2016)	Total Quality Management and Business Excellence	33	Common Assessment Framework (CAF) model, as base for develop and increase good factor booster and also results operation, and successful in increase performance organization.
6	Prybutok et al. (2011)	Socio-Economic Planning Sciences	25	Instrument based on criteria The Malcolm Baldrige National Quality Award (MBNQA) provides a viable measure for municipalities to review and measure business processes in making decisions about resource allocation.
7	Tomaževič et al., (2017)	Total Quality Management and Business Excellence	23	Proposed model expand and improve existing models because in a way consistent follow the process of governance management for ensure advantages.
8	Khalid et al. (2019)	Meditari Accountancy Research	22	Findings study show that provider service health realize characteristic important performance environment in create mark for stakeholders internal and external interests.
9	Sole (2009)	Measuring Business Excellence	21	This model emphasize importance connect system measurement performance with system accountability external for ensure transparency organization to stakeholders interests and support taking purposeful decision.
10	Betto et al. (2022)	International Journal of Environmental Research and Public Health	21	The study focused primarily on the process design, rather than implementation, use, or BSC review. In the implementation and use of BSC prioritize leadership, culture and communication.
11	Zheng et al., (2019)	Journal of the Operational Research Society	11	The Balanced Stakeholder Model (BSM) contributes to improved performance by identifying and balancing the interests of various stakeholders and assisting public organizations in developing relevant performance indicators.
12	Moullin (2009)	Nursing management (Harrow, London, England: 1994)	11	PSS offers method best for ensure that improvement services and measurements performance focused on results the important one for user services, and stakeholders interest

No.	Author and Year	Journal Name or proceedings	Amount Citation	Contribution of Performance Measurement Models
13	Carlucci et al. (2015)	Production Planning and Control	10	This study aims to examine the stages involved in the process of utilizing performance measures, namely adoption and implementation, and to investigate the political, cultural, and rational factors that influence this process.
14	Gunarsih et al., (2016)	Journal of Engineering Science and Technology	9	The model provides contribution significant to improvement performance organization with method integrating two different approaches (BSC and system dynamic).
15	Barlage et al. (2014)	Policy Studies	7	The Multi-Trait–Multi-Method Model (MTMM) does not only can determine validity size performance, but also valuable in produce estimate potential bias in methods and properties from size performance subjective this.
16	Meričková et al. (2020)	Scientific Papers of the University of Pardubice, Series D: Faculty of Economics and Administration	6	Implementation system measurement and evaluation performance can push system accountability, ensure utilization source efficient and effective power, and brings provision service education to in accountancy sector public.
17	Demo et al. (2024)	RAUSP Management Journal	4	Management source power man public is valid and reliable measure in a way operational used as tool diagnostic use support manager public in apply practice management source power man in taking decisions.
18	Salvatore and Fanelli (2021)	Global Business and Economics Review	4	Implementation system measurement performance is very important for produce more outcomes good, especially in the sector health public.
19	Siti-Nabiha and Fuad (2011)	International Journal of Managerial and Financial Accounting	3	There are several performance measurement models such as: BSC, Performance Prism Model, Performance Pyramid System Model, EFQM Model, and Results and Determinants Matrix Model which contribute to improving performance with various approaches.
20	Usta (2012)	Amme Idaresi Dergisi	2	Balanced Scorecard Model allows public administrators evaluate activity they from perspective term long, so that institution can managed in structure flexible, transparent, effective and productive organization.
21	Noordiatmoko et al. (2023)	Journal of Governance and Regulation	1	This study find that factor First in build management sustainable performance is dimensions operations which is one of the key management sustainable performance through system evaluation government.
22	Sole and Schiuma (2010)	Business Performance Measurement and Management: New Contexts, Themes and Challenges	1	Management model performance holistic aiming for highlight connection between system measurement and use size effective performance for increase taking decisions, performance and accountability in the sector public.
23	Arnaboldi and Azzone (2005)	International Journal of Business	1	Research this aiming for serve framework theoretical for develop control system comprehensive in institutions public .

No.	Author and Year	Journal Name or proceedings	Amount Citation	Contribution of Performance Measurement Models
		Performance Management		
24	Rimkute et al. (2015)	Public Policy and Administration	1	Study this to study system management performance sector Lithuanian public and the changes, with apply principles management oriented results.
25	Mohamud and Jusoh (2023)	AIP Conference Proceedings	-	The purpose of Rasch model instrument analysis This is for measure six construct studies main, namely: performance organization, practice management talent, practice innovation management, practice management knowledge, commitment management peak, and capability dynamic.
26	Barros (2025)	Journal of Public Budgeting, Accounting and Financial Management	-	Balanced Scorecard (BSC) is one of the models that has been adapted and promoted for used in management measurement performance.

Of the 26 articles in Table 2 above, the number of articles with the most citations totals 94, and there are 2 articles without citations. The articles in Table 2 above explain the contributions of various measurement models to performance improvement in public-sector organizations. Some relevant research with the theme includes Balabonienė and Večerskienė (2015), who disclose that the measurement model performance that combines various methods from the business sector (such as the Balanced Scorecard and output- based models) can help the public sector improve internal processes, motivate employees, and support making better managerial decisions. Research on performance audits suggests they can increase accountability and efficiency, but their implementation is not always appropriate and can lead to negative effects, such as the "performance paradox" and a focus on formality rather than substance (Bawole & Ibrahim, 2016; Marchi & Bertei, 2016).

Information results measurement performance is widely used in public sector organizations, but the objectives of its use vary, and it does not always lead directly to improved performance, highlighting the need for strategic management of the role of direct information (Micheli & Pavlov, 2014). Cross-country studies show that the public-sector context itself (for example, bureaucracy, orientation services) contributes significantly to the effectiveness of the measurement model compared with simply adopting the model from the private sector (Bozeman & Loveless, 1987). Evaluation of model performance using technology and big data is proposed as a modern approach to measuring and improving the performance of public sector agencies in real time (Wei, 2018).

Performance measurement models contribute significantly to improving the performance of public sector organizations through a variety of complementary approaches. The Balanced Scorecard model, the most dominant, has been proven to improve organizational performance by aligning strategic objectives with performance indicators, strengthening data-driven decision-making, and increasing transparency and accountability, particularly in the government sector and other public organizations. Public sector organizational performance measurement has developed broadly and multidimensionally, encompassing financial and non-financial aspects, service quality, environmental sustainability, governance, and human resource management. Performance measurement no longer focuses solely on output, but has shifted toward measuring outcomes and public impact. This is evident in the dominant use of the Balanced Scorecard, which integrates various performance perspectives, both financial and non-financial, as well as the development of other models such as the environmental performance measurement framework, which emphasizes the sustainability dimension, and the value for money approach, which focuses on efficiency, effectiveness, and economy in the use of public resources. Furthermore, models such as the Public Sector

Scorecard (PSS) and the balanced stakeholder model broaden the scope of measurement by emphasizing stakeholder orientation and public value.

The literature reviewed reveals several key patterns. First, a growing body of research focuses on the application and development of classic performance measurement models, such as the balanced scorecard, the common assessment framework, and the Malcolm Baldrige National Quality Award (MBNQA), which have been shown to improve service quality, organizational efficiency, and performance-based decision-making. Second, the development of integrative and hybrid approaches, such as combining the Balanced Scorecard with system dynamics, demonstrates an effort to overcome the limitations of conventional models in capturing the complexity of public sector systems. Third, research emphasizes contextual factors and determinants of implementation success, such as organizational culture, leadership, political aspects, and stakeholder involvement, which significantly influence the effectiveness of performance measurement systems. Fourth, the emergence of more robust methodological approaches, such as the Multi-Trait–Multi-Method (MTMM) and the Rasch measurement model, which focus on improving the validity and reliability of performance measurement instruments. Furthermore, several studies also highlight sector-based approaches, such as health, education, and public administration, which demonstrate that performance measurement is strongly influenced by sector characteristics and institutional contexts.

The implications of this literature review indicate that there is no single, universal performance measurement model for all public sector organizations. Rather, the effectiveness of performance measurement depends heavily on an organization's ability to adapt and combine various models according to its needs and context. Therefore, public sector organizations are advised to adopt a more integrative or hybrid approach to accommodate the complexity of their objectives, actors, and the environment they face.

Conclusions and Recommendations

Based on the previous explanation, there are 200 Scopus-indexed articles on the performance of measurement models in public sector organizations; after applying the PRISMA method, only 26 articles met the criteria. Of the 26 articles, the article by Edward et al. (2011) had the most citations (94), and the fewest was the study by Barros (2025), followed by (Mohamud & Jusoh, 2023). There are 18 articles that present various models for measuring the performance of public-sector organizations. The most popular model investigated is the BSC, with as many as 7 articles on it. Various types of measurement models have significantly improved the performance of public sector organizations.

This research has important theoretical implications for the development of performance measurement literature in public sector organizations. Through a hybrid review approach that integrates bibliometric analysis and a PRISMA-based Systematic Literature Review, this study provides a more comprehensive synthesis of the development of various performance measurement models. The finding that the Balanced Scorecard is the dominant model and has undergone various adaptations indicates that it has high flexibility but is not universal. Practically, this research has implications for public sector organizations and policymakers in designing and implementing more effective performance measurement systems. The mapping results indicate that no single model can be applied in isolation to an organizational context, so an approach that combines multiple models tailored to the organization's needs and characteristics is needed. This study has several limitations. First, the relatively limited number of articles analyzed (26 articles) from the screening results does not fully represent the overall development of performance measurement models in public sector organizations globally. Second, this study used only Scopus-indexed sources for the period 2005–2025, potentially overlooking relevant studies from other databases or recent publications outside that period. Third, the hybrid review approach, which combines bibliometric analysis and a PRISMA-based Systematic Literature Review, still focuses on literature synthesis and thus does not empirically test the effectiveness of each performance measurement model in a specific organizational context.

Based on these limitations, further research is recommended to expand data coverage by including additional databases and a longer time period, and to increase the number of article samples to make the mapping results more comprehensive. Furthermore, future research can conduct empirical studies to test the effectiveness of performance measurement models, such as the balanced scorecard and other hybrid models, across various public-sector organizational contexts.

References

Abad, J., Cabrera, H. R., & Medina, A. (2016). An analysis of the perceived difficulties arising during the process of integrating management systems. Journal of Industrial Engineering and Management, 9(3), 860–878. https://doi.org/10.3926/jiem.1989

Ahmad, N., Naveed, A., Ahmad, S., & Butt, I. (2020). Banking sector performance, profitability, and efficiency: A citation-based systematic literature review. Journal of Economic Surveys, 34(1), 185–218. https://doi.org/10.1111/joes.12346

Arnaboldi, M., & Azzone, G. (2005). Performance measurement and change: the case of Italian new public administration. Int. J. Business Performance Management, 7(1), 1–15. https://doi.org/10.1504/IJBPM.2005.006240

Arnaboldi, M., Lapsley, I., & Steccolini, I. (2015). Performance Management in the Public Sector: The Ultimate Challenge. Financial Accountability & Management, 31(1), 1–22. https://doi.org/10.1111/faam.12049

Bae, E. (2006). Major elements and issues in performance management system: a literature review. Academy of Human Resource Development International Conference (AHRD), Columbus, 1430–1437. https://eric.ed.gov/?id=ED492860

Bahoo, S., Alon, I., & Paltrinieri, A. (2020). Corruption in international business: A review and research agenda. International Business Review, 29. https://doi.org/10.1016/j.ibusrev.2019.101660

Baird, K., Schoch, H., & Chen, Q. (James). (2012). Performance management system effectiveness in Australian local government. Pacific Accounting Review, 24(2), 161–185. https://doi.org/10.1108/01140581211258461

Balabonienė, I., & Večerskienė, G. (2015). The Aspects of Performance Measurement in Public Sector Organization. Procedia - Social and Behavioral Sciences, 213, 314–320. https://doi.org/10.1016/j.sbspro.2015.11.544

Barlage, M., van den Born, A., van Witteloostuijn, A., & Graham, L. (2014). Estimating public performance bias through an MTMM model: the case of police performance in 26 European countries. Policy Studies, 35(4), 377–396. https://doi.org/10.1080/01442872.2013.875154

Barros, R. S. (2025). Research on the balanced scorecard for government entities: a literature review. In Journal of Public Budgeting, Accounting and Financial Management. Emerald Publishing, 37(3), 415-440. https://doi.org/10.1108/JPBAFM-10-2022-0162

Bawole, J. N., & Ibrahim, M. (2016). Contesting Claims on Measuring Performance in the Public Sector Using Performance Audits: Evidence from the Literature. Public Organization Review, 16(3), 285–299. https://doi.org/10.1007/s11115-015-0312-4

Berrah, L., G. Mauris, & F. Vernadat. (2004). Information aggregation in industrial performance measurement: Rationales, issues and definitions. International Journal of Production Research, 42, 4271–4293. https://doi.org/10.1080/00207540410001716534

Betto, F., Sardi, H., Garengo, P., & Sorano, E. (2022). The evolution of balanced scorecard in healthcare: A systematic review of its design, implementation, use, and review. International Journal of Environmental Research and Public Health, 19(16). https://doi.org/10.3390/ijerph191610291

Biron, M., Farndale, E., & Paauwe, J. (2011). Performance management effectiveness: lessons from world-leading firms. The International Journal of Human Resource Management, 22(6), 1294–1311. https://doi.org/10.1080/09585192.2011.559100

Bititci, U. S., Kepa Mendibil, Sai Nudurupati, Patrizia Garengo, & Trevor Turner. (2006). Dynamics of performance measurement and organizational culture. International Journal of Operations & Production Management, 26, 1325–1350. https://doi.org/10.1108/01443570610710579

Bouckaert, G., & Halligan, J. (2008). Managing Performance: International Comparisons. Routledge, New York.

Bozeman, B., & Loveless, S. (1987). Sector Context and Performance: A Comparison of Industrial and Government Research Units. Administration & Society, 19(2). https://doi.org/10.1177/009539978701900204

Carlucci, D., Schiuma, G., & Sole, F. (2015). The adoption and implementation of performance measurement process in Italian public organizations: the influence of political, cultural and rational factors. Production Planning and Control, 26(5), 363-376. https://doi.org/10.1080/09537287.2014.906678.

Choi, I. (2020). Moving beyond mandates: Organizational learning culture, empowerment, and performance. International Journal of Public Administration, 43, 724–735. https://doi.org/10.1080/01900692.2019.1645690

Demo, G., Costa, A. C. R., & Coura, K. V. (2024). HRM practices in the public service: a measurement model. RAUSP Management Journal, 59(1), 45–61. https://doi.org/10.1108/RAUSP-01-2023-0005

DiMaggio, P., & Powell, W. W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. American Sociological Review, 48(2), 147–160. https://doi.org/10.17323/1726-3247-2010-1-34-56

Dollery, B., & Johnson, A. (2005). Enhancing efficiency in Australian local government: an evaluation of alternative models of municipal governance. Urban Policy and Research, 23(1), 73–85. https://doi.org/10.1080/0811114042000335278

Dooren, W. Van. (2006). Performance Measurement in the Flemish Public Sector: A Supply and Demand Approach. Katholieke Universiteit Leuven.

Dooren, W. van, Bouckaert, G., & Halligan, J. (2015). Performance management in the public sector. Routledge, New York.

Edward, A., Kumar, B., Kakar, F., Salehi, A. S., Burnham, G., & Peters, D. H. (2011). Configuring balanced scorecards for measuring health system performance: Evidence from 5 years' evaluation in Afghanistan. PLoS Medicine, 8(7). https://doi.org/10.1371/journal.pmed.1001066

Febriyanti, D., Widianingsih, I., Sumaryana, A., & Buchari, R. A. (2024). The typology and determinant of performance measurement for public sector organizations–a literature review. Cogent Business and Management, 11(1), 1-20. https://doi.org/10.1080/23311975.2024.2315681

Franco-Santos, M., Lucianetti, L., & Bourne, M. (2012). Contemporary performance measurement systems: A review of their consequences and a framework for research. Management Accounting Research, 23, 79–119. https://doi.org/10.1016/j.mar.2012.04.001

Gabrielsson, J. (2017). Corporate governance and entrepreneurship: current states and future directions. Edward Elgar Publishing, 1-26. https://www.elgaronline.com

Gębczyńska, A., & Brajer-Marczak, R. (2020). Review of selected performance measurement models used in public administration. Administrative Sciences, 10(4), 1-20. https://doi.org/10.3390/admsci10040099

Goh, S. C. (2012). Making performance measurement systems more effective in public sector organizations. Measuring Business Excellence, 16(1), 31–42. https://doi.org/10.1108/13683041211204653

Gunarsih, T., Saleh, C., Syukron, N., & Deros, M. D. (2016). A hybrid balanced scorecard and system dynamics for measuring public sector performance. In Journal of Engineering Science and Technology Special Issue on ICE & ICIE (Vol. 11), 65-86. https://www-scopus-com.proxy.undip.ac.id/pages/publications/84965147273?origin=resultslist

Hamid, S. M. B. A., Hamali, J. B. H., & Abdullah, F. (2016). Performance Measurement for Local Authorities in Sarawak. Procedia - Social and Behavioral Sciences, 224, 437–444. https://doi.org/10.1016/j.sbspro.2016.05.416

He, Z., Peng Chen, Haitao Liu, & Zhaoxia Guo. (2017). Performance measurement system and strategies for developing low-carbon logistics: A case study in China. Journal of Cleaner Production, 156, 395–405. https://doi.org/10.1016/j.jclepro.2017.04.071

Husaeni, D. F. L., & Nandiyanto, A. B. D. (2022). Bibliometric Using Vosviewer with Publish or Perish (using Google Scholar data): From Step-by-step Processing for Users to the Practical Examples in the Analysis of Digital Learning Articles in Pre and Post Covid-19 Pandemic. ASEAN Journal of Science and Engineering, 2, 19–46. https://doi.org/10.17509/ijost.v6ix

Jarrar, Y., & Schiuma, G. (2007). Measuring performance in the public sector: Challenges and trends. Measuring Business Excellence, 11(4), 4–8. https://doi.org/10.1108/13683040710837883

Johnston, R., & Jones, P. (2004). Service productivity: towards understanding the relationship between operational and customer productivity. International Journal of Productivity and Performance Management, 53(3), 201–213. https://doi.org/10.1108/17410400410523756

Khalid, S., Beattie, C., Sands, J., & Hampson, V. (2019). Incorporating the environmental dimension into the balanced scorecard: A case study in health care. Meditari Accountancy Research, 27(4), 652–674. https://doi.org/10.1108/MEDAR-06-2018-0360

Lee, C. D. (2005). Rethinking the goals of your performance–management system. Employment Relations Today, 32(3), 53–60. https://doi.org/10.1002/ert.20075

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P. A., Clarke, M., Devereaux, P. J., Kleijnen, J., & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: explanation and elaboration. BMJ (Clinical Research Ed.), 339. https://doi.org/10.1136/bmj.b2700

Looy, A. Van, & Shafagatova, A. (2016). Business process performance measurement: a structured literature review of indicators, measures and metrics. SpringerPlus, 5(1797), 1–24. https://doi.org/DOI 10.1186/s40064-016-3498-1

Lundberg, K., Balfors, B., & Folkeson, L. (2009). Framework for environmental performance measurement in a Swedish public sector organization. Journal of Cleaner Production, 17(11), 1017–1024. https://doi.org/10.1016/j.jclepro.2009.01.011

Maestrini, V., Davide Luzzini, Paolo Maccarrone, & Federico Caniato. (2017). Supply chain performance measurement systems: A systematic review and research agenda. International Journal of Production Economics, 183, 299–315. https://doi.org/10.1016/j.ijpe.2016.11.005

Marchi, L., & Bertei, M. (2016). Performance Audit in the Public Sector. What is the contribution to the Performance Management? MANAGEMENT CONTROL, 3, 49–63. https://doi.org/10.3280/maco2016-003004

Meričková, B. M., Štrangfeldová, J., Muthová, N. J., & Štefanišinová, N. (2020). Performance measurement in public education services based on the value-for-money concept. Scientific Papers of the University of Pardubice, Series D: Faculty of Economics and Administration, 28(3), 1-11. https://doi.org/10.46585/sp28031099

Micheli, P., & Pavlov, A. (2014). The Use of Performance Information in Public Sector Organizations: How Much or What For? Academy of Management, Vol. 2014 (1). https://doi.org/10.5465/ambpp.2014.10553abstract

Mohamud, M., & Jusoh, M. (2023). Management practices and organization performance in Malaysian public sector: Construct validity using Rasch measurement model. AIP Conference Proceedings, Vol. 2544 (1). https://doi.org/10.1063/5.0132797

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. Journal of Clinical Epidemiology, 62(10), 1006–1012. https://doi.org/10.1016/j.jclinepi.2009.06.005

Moullin, M. (2009). Public Sector Scorecard. Nursing Management, 16 (5), 26-31. https://doi.org/10.7748/nm2009.09.16.5.26.c7220

Moullin, M. (2017). Improving and evaluating performance with the Public Sector Scorecard. International Journal of Productivity and Performance Management, 66(4), 442–458. https://doi.org/10.1108/IJPPM-06-2015-0092

Moynihan, D. P. (2008). The Dynamics of Performance Management: Constructing Information and Reform. Georgetown University Press.

Ngomuo, S. I., & Wang, P. M. (2015). Measuring Performance in Public Sector Organizations: Evidence from Local Government Authorities in Tanzania. In the European Journal of Business and Management (www.iiste.org), ISSN (Vol. 7, Issue 9), 184-195. ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online). www.iiste.org

Nilasari, A. P., Prihastiwi, D. A., Nurcahya, Y. A., & Retnosari. (2023). Integration of the balanced scorecard framework and analytical hierarchical procedure to determine the performance assessment model of public sector organizations. Jurnal Manajemen Dan Pemasaran Jasa, 16(1), 29–44. https://doi.org/10.25105/jmpj.v16i1.15389

Noordiatmoko, D., Anggriawan, T., & Saputra, A. E. (2023). Assessing Measurement Model Of Performance Management In Government Agencies Using SEM-PLS Analysis. Journal of Governance and Regulation, 12(4), 227–235. http://dx.doi.org/10.22495/jgrv12i4siart2

Oakes, L. S., Townley, B., & Cooper, D. J. (1998). Business planning as pedagogy: language and control in a changing institutional field. Administrative Science Quarterly, 43 (2), 257–292. https://doi.org/10.2307/2393853

Pratiwi, D. D., & Pagalung, G. (2025). Audit Quality Study of Public Sector Performance: Systematic Literature Review. Proceedings of the 9th International Conference on Accounting, Management, and Economics 2024 (ICAME 2024), Advances in Economics, Business and Management Research 331, 34-47. https://doi.org/https://doi.org/10.2991/978-94-6463-758-8_4

Prybutok, V., Zhang, X., & Peak, D. (2011). Assessing the effectiveness of the Malcolm Baldrige National Quality Award model with municipal government. Socio-Economic Planning Sciences, 45(3), 118–129. https://doi.org/10.1016/j.seps.2010.12.003

Rimkute, E., Kirstukaite, I., & Šiugždiniene, J. (2015). Public sector performance management in Lithuania: Progress and challenges implementing results-based management. Public Policy and Administration, 14(1), 9–24. https://doi.org/10.5755/j01.ppaa.14.1.11412

Roh, J. (2018). Improving the government performance management system in South Korea: Focusing on central government agencies. Asian Education and Development Studies, 7(3), 266–278. https://doi.org/10.1108/AEDS-11-2017-0112

Salvatore, F., & Fanelli, S. (2021). Indicators and criteria for efficiency and quality in public hospitals: a performance evaluation model. Global Business and Economics Review, 25(3–4), 212–230.

https://doi.org/10.1504/GBER.2021.118700
Scott, W. R. (1987). The Adolescence of Institutional Theory. In Administrative Science Quarterly (Vol. 32, Issue 4), 493-511, https://doi.org/10.2307/2392880, http://www.jstor.org/about/terms.html
Siti-Nabiha, A. K., & Fuad. (2011). An analysis of the performance measurement frameworks for the public sector. Int. J. Managerial and Financial Accounting, 3(2), 127–139. https://doi.org/10.1504/IJMFA.2011.039493
Sole, F. (2009). A management model and factors driving performance in public organizations. Measuring Business Excellence, 13(4), 3–11. https://doi.org/10.1108/13683040911006747
Sole, F., & Schiuma, G. (2010). How to use different measures for different purposes: A holistic performance management model for public organizations. In Business Performance Measurement and Management: New Contexts, Themes and Challenges (pp. 103–112). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-04800-5_7
Tomaževič, N., Seljak, J., & Aristovnik, A. (2016). TQM in public administration organizations: an application of data envelopment analysis in the police service. Total Quality Management and Business Excellence, 27(11–12), 1396–1412. https://doi.org/10.1080/14783363.2015.1007861
Tomaževič, N., Tekavčič, M., & Peljhan, D. (2017). Towards excellence in public administration: organization theory-based performance management model. Total Quality Management and Business Excellence, 28(5–6), 578–599. https://doi.org/10.1080/14783363.2015.1102048
Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic. British Journal of Management, 14(3), 207–222. https://doi.org/10.1111/1467-8551.00375
Usta, A. (2012). Performance management in public organizations with Balanced Scorecard: Dimensions and indicators. Amme Idaresi Dergisi, 45(1), 99–120, EID 2-s2.0-84878486256,ISSN 13001795. https://www-scopus-com.proxy.undip.ac.id/pages/publications/84878486256?origin=resultslist
Vo, D. Van, & Simmie, G. M. (2024). Assessing Scientific Inquiry: A Systematic Literature Review of Tasks, Tools and Techniques. International Journal of Science and Mathematics Education. https://doi.org/10.1007/s10763-024-10498-8
Wei, Y. (2018). Research on Performance Evaluation of Human Resources Management in Public Sector. Proceedings of the 2018 2nd International Conference on Education Science and Economic Management (ICESEM 2018), Vol.184, 814-816. https://doi.org/10.2991/icesem-18.2018.189
Zheng, Y., Wang, W., Liu, W., & Mingers, J. (2019). A performance management framework for the public sector: The balanced stakeholder model. Journal of the Operational Research Society, 70(4), 568–580. https://doi.org/10.1080/01605682.2018.1448247
Zucker, L. G. (1987). Institutional theories of organization. Annual Review of Sociology, 13, 443–464. https://www.jstor.org/stable/2083256