

Measurement of the Operating Results in the Public Sector: A Systematic Revaluation and Academic Interpretation of the Performance Aspect

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With the recognition of the limitation of low numbers of related papers focused on literature review in public sector accounting in the world as well as in Vietnam in the academic works, this research sets an aim to identify and analyse the emerging literature on performance measurement (PM) in the public sector (PS) and shed a light for other research in the future. The systematic literature review (SLR) methodology proposed by Denyer and Tranfield (2009) was applied with a total of 80 papers published in 38 scientific journals that were systematically reviewed for evaluating and to establish the current trends. Apart from indicating an increasing demand on a better understanding of PM in PS in spite of regionally heterogeneous vision and mission for improving performance, the results also reveal gaps stemming from the choice of number as well as type of keywords and journals through 7 categories in those trends of research. Taking these results into account, the academics can keep on exploring this type of subject area on their own accord, while the practitioners and policy makers can employ the research in their empirical work.

Key words: *performance measurement, public management, public sector, systematic literature review, accounting public, accounting public sector.*

JEL Classification: *H83-M41-M48*

Introduction

All the PS entities are nowadays functioning in the dynamical environment that imposes the organisations to align to the consecutively variable environmental conditions. In order to measure performance of public sector organisations (PSOs), the application of suitable PM methods is worth important attention (Balabonienė & Večerskienė, 2015). For this reason, interest in PM in recent years has grown exponentially and has been capturing growing attention in PSOs, international audiences and substantial academic researchers (Alach, 2016).

It is obvious that there is abundant research carried out toward the PM in PS whose subjects conventionally focused on enumerating the performance measurement system (PMS) design and implementation (e.g. Langham & Paulsen, 2018), factors which significantly affect PM in PS (e.g. Barbato & Turri, 2017) and the improvement of PM in PS (Buathong & Bangchokdee, 2017). Additionally, to sparse extent have been the studies on specific topics about PMS which are based predominantly on enumerating the different situation of the research context. Owing to the mentioned above, systematization of the knowledge regarding to performance measurement in public sector (PMPS) seems to be hardly looked at.

In corresponding to this requirement, our study has made the inductive examination through SLR approach to determine what divergent researchers implied when they spoke about PM in PS. Our contribution is to delineate how previous research have conducted the topic under inspection through employing a multidimensional configuration to categorize the studies, synthesizing the principal themes inquired into until now and resolving new research questions. As a consequence, the value of our study depends on galvanizing an alternative from primarily descriptive research into the advancement and integration in study on PSPM. Hence, to a better degree, this study has set a goal for addressing these ensuing research questions:

RQ1. How is the literature of PMPS developing during the period of time?

RQ2. What is focused on within the PMPS literature?

RQ3. What are the implications to shed light on for future research?

In order to clarify our consideration, the rest of this paper is configured as follows: The primary theoretical inputs in this study were introduced in Section 2. This is followed by a discussion of the methods employed in our study depicting at length how our systematic review was performed and the systematic process was applied in the literature analysis. Our main bulk of research is accentuated in Section 4 in which we lay out the result and comment on the gaps to shed a light for further research on PSPM. The final section draws on some concluding thoughts and implications.

Literature Review and Methods

Literature Review

According to Kaplan (1990), PM is the prerequisite of performance improvement. On the other hand, it can be defined as “the process of quantifying the efficiency and effectiveness of action” (Neely et al., 2005). By the 1980s, owing to the increasingly competitive markets and limitation of sole financial measures, organisations had to respond more to external activities and long-term success so as to satisfy customers’ increasing demands and maintain market share (Parker, 2000). However, due to lacking of focus on long-term success and insight into how an organization’s performance is achieved and improved (Kaplan, 1986) as well as failing to indicate a set of intangible critical factors (e.g., customer satisfaction and strategy) (Parker, 2000), a plethora of general PMSs had been devised over the last 20 years.

In the mid-1930s, Ridley and Simon (1938) stressed the importance on measurement, and discussed what, why, and how municipal activities should be measured, and pointed out steps for improvement of the PM. However, the research on PM has not gained more than modest attention until the last 2–3 decades (Streib & Poister, 1999). Starting from the New Public Management (NPM) movement, government was expected to show its efficiency in expending public resources as well as to prove that outcomes related to a program have been generated effectively (Carlucci et al., 2014). Although there have been attempts to develop measurement and assessment systems for PS during a long period, fundamental weaknesses still persisted in the quality and use of performance information. In parallel with practical developments, the body of literature seeking to document, explain and improve public sector performance measurement (PSPM) has also grown (Carlucci et al., 2014).

Research Method

A literature review can be carried out through a narrative review (as was the case for many years in management science), or SLR and meta-analysis (as was the case for many years in medicine) (Tranfield et al., 2003). Moreover, traditional narrative literature review has been criticized by experts as it can be heavily influenced by research bias. Using the SLR framework, the bias and systematic error can be explicitly minimized (Petticrew & Roberts, 2006). Following Denyer and Tranfield (2009), a five-step procedure of content analysis was followed: 1) question formulation, 2) relevant studies location and selection, 3) study selection and evaluation, 4) analysis and synthesis, and 5) dissemination of review findings.

First, question formulation; the formation of review questions was considered specifically important in case the literature is sparse (Denyer & Tranfield, 2009). In this study, the Context-Intervention-Mechanism-Output framework reformulated from the work of Pawson (2006) by Denyer and Tranfield (2009) was employed with the purpose of more specifically focusing the review question. Thus, the explicit research questions are presented as follows:

- RQ1. Which immense systems are under investigation?
 RQ2. The impacts of what system are being explored?
 RQ3. Under what conditions are these apparatuses operated or not operated?
 RQ4. What are the planned and unplanned effects?

Second, relevant studies location and selection; five databases were employed in this study including Emerald plus, Sage, ScienceDirect journals, Taylor and Francis Online, and Wiley Online Library because of their tremendous depositories of business research and a mass of publishing outlets of highest impact on the research community (Sandberg & Aarikka-Stenroos, 2014) and bias lessening. Besides, the timeframe of our literature review was stretched from 1990 to 2019 because PMSs have been widely adopted among PSOs since the 1990s (Jääskeläinen & Sillanpää, 2013). Following the process of Tranfield et al. (2003), a search string by pointing out all synonyms for “public sector measurement performance” was developed and broadened. In this regard, the set of keywords shaped a search string in that all synonyms for “performance measurement” were coordinated with all the cognates for “public sector”.

Table 1: Keywords or key terms used in the literature search.

Public sector	And	Performance measurement
Public Administration, Public sector bank, Public Education sector, Government, Federal university, Public Health sector, Public High school, Public Hospital, Public Library, Local government, Ministry, Public Service sector, Public University		Evaluation performance, Measurement Method, Measuring Method, Measurement Technique, Measuring Technique, Performance Indicator, Performance assessment

Source: Researchers’ elaboration, 2019

For each database, the search string first had to be adjusted according to the specific search guidelines, and was then applied in the search field offering the most relevant results. In total, all the related articles were identified: 58,388 from Science Direct, and 40,766 from Emerald, 5,380 articles from Wiley Online Library and 130,168 Taylor and Francis Online. The search process produced 234,720 documents comprising journal articles and conference papers. The searches also generated a large number of duplicate articles. The differences in the number of articles found were attributable to the scope of each respective repository.

Third, study selection and evaluation; the timeframe limitation of our literature review was between January 1990 and January 2019. The investigation was limited to peer-reviewed journals (Denyer & Tranfield, 2009) in order to ensure that only high-quality manuscripts

were considered. Subsequently, the inclusion/exclusions criteria list was developed and agreed on by all the authors and was shown in Table 2.

Table 2: The Inclusion and Exclusion criteria

Inclusion criteria	Exclusion criteria
Articles must be obtainable as full-text, recorded in English, published during the period between 1990 and 2019, relevant to the research questions; belong to selected digital databases, and focused on the PM only in PS.	Articles are not obtainable as full-text, external search timeframe, non-English manuscript, not concerned to the research questions, duplicated studies, not only concentrated on PS, and the type of literature review.

Source: Researchers' elaboration, 2019

Eliminating duplicate articles and analyzing the abstracts according to the predefined inclusion and exclusion criteria was carried out by the authors. The inclusion/exclusion decisions were based solely on analysis of the abstracts, without any additional information and with the tendency to be inclusive rather than exclusive. Conference proceedings were not included, and, for that reason, some papers identified in our search were excluded with the final sample of 80 articles shown in Table 3.

Table 3: Overview of search result and study selection.

S. No.	Database	Period of search	After automated and manual search	After reading complete study and quality assessment
1	Emeraldinsight.com	1990-2019	40,766	30
2	ScienceDirect	1995-2019	58,388	12
3	Taylor & Francis Online	1990-2019	130,168	39
4	Wiley Online	1990-2019	5,380	3
Total			234,702	80

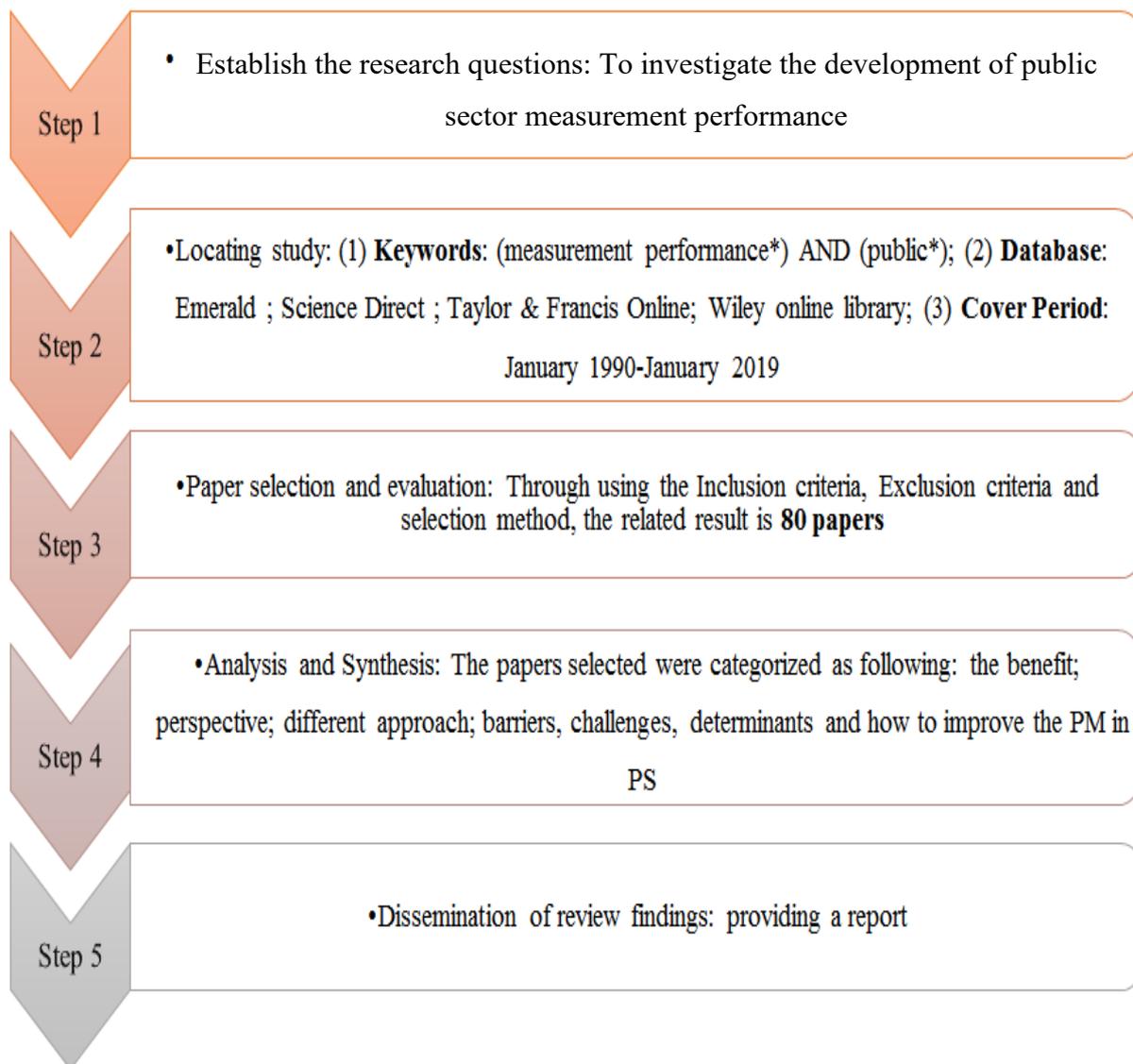
Source: Researchers' calculation, 2019

Fourth, analysis and synthesis; owing to the fact that analysis and synthesis themes were colligated with related data isolation, tabulation, paradigm tracking down, and common ideas aggregation (Ghadge et al., 2012), in this study, the thematic analysis was employed to systematically classify the content of the papers and determine relationships (Lane et al., 2006) between PM with other relating domains of operation in the PS. Simultaneously, an interpretative synthesis method was conducted through encrypting due to the heterogeneous nature of and the majority of qualitative studies contented in the sample. The codes were also

verified by the two researchers in order to wipe out unhomogeneity and reinforce the internal validity and credibility of the data (Elliott et al., 1999).

Fifth, dissemination of review findings; in the SLR paper the final step was to provide a report which illustrated comprehensively the review process and the overall results (Denyer & Tranfield, 2009).

Figure 1. Defining the search process for the systematic literature review.



Source: Adapted by the authors from Denyer and Tranfield, 2009

Results Review

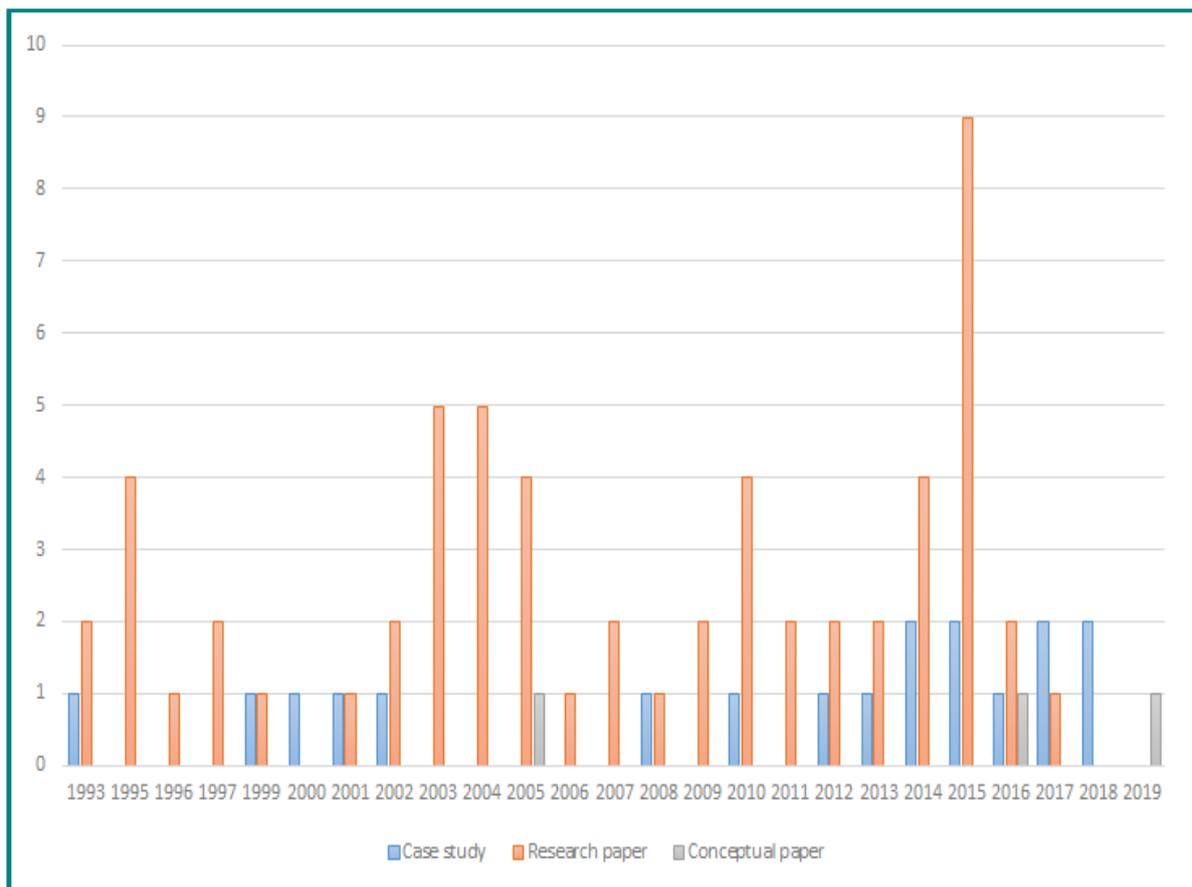
The systematic review identified 80 scholarly journal articles. We further reviewed these articles and classified them under various categories. The descriptive analyses and categories that defined the articles were selected, such as the year of publication, journal, and countries focused on in studies and the classification of papers and finding.

Descriptive analysis of the reviewed articles

Year wise insight of selected journals;

The chart provided an insight into the development and research to the topic year-wise. Although the number of the published articles on the topic at hand was still very limited throughout the considered period, it was possible to note a relatively positive trend from 2003 to 2005. The highest number of publications was recorded in 2015 and then slightly down in the number of papers from 2016 to 2019. There was a drastic boost in the number of research type publications in comparison with case study and conceptual paper.

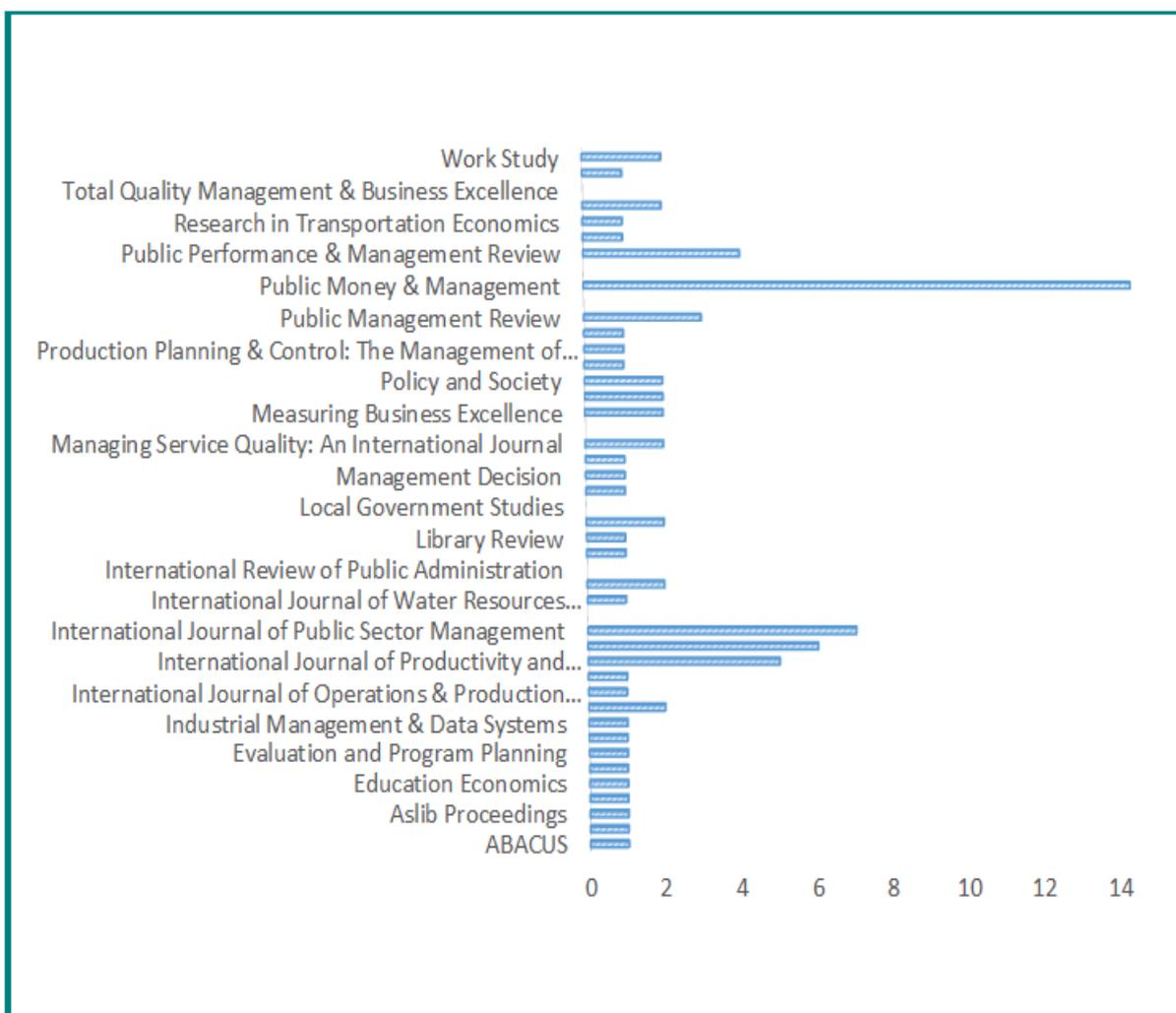
Figure 2. Year-wise related papers in selected journal



Academic Journals;

The top contributor was the Public Money & Management (14 papers), followed by the International Journal of Public Sector Management (7 papers); International Journal of Productivity and Performance Management (5 papers) and International Journal of Public Administration (6 papers). The remaining identified journal was published according to the results shown in Figure 3. On the other hand, PSPM had a more diverse spread. Each journal article available on the topic was published in different journals, illustrating that no journal has yet made a focus on this niche area of research.

Figure 3. Number of academic journals



Source: Researchers' calculation, 2019

Country-wise distribution of articles;

The descriptive analysis also highlighted that the studies in this research focused on diverse countries from almost all continents. It was interesting to observe that one article presented a

“multi-country” perspective while most of studies adopted in single-country focus. This meant the relationship between PSPM and the context where it was implemented is an interesting research direction focus. The ‘no country’ category was devoted to this review which does not show any geographical focus. Besides, results of systematic literature review showed that most of the studies of PSPM were conducted in developed countries especially in the UK, US and Australia. Conversely, despite the importance of application and improving PSPM in developing countries, only 17 studies explored the subject matter in developing countries. This indicated that a literature gap existed for the study of PSPM in developing countries. In this respect, one can anticipate more research on the subject matter in developing countries.

Table 4: Country-wise distribution of articles

Country	Orientation		Count of No.
	Developed	Developing	
Australia	x		8
Belgium	x		1
Canada	x		1
Denmark	x		4
Finland	x		7
France	x		2
Italia	x		4
Italia and Spain	x		1
Netherlands	x		1
Portugal	x		2
Sweden	x		2
Turkey	x		1
United Kingdom	x		15
United State	x		8
United State & Canada	x		1
Total	<u>16</u>		<u>58</u>
China		x	6
Estonia		x	1
Greece		x	1
India		x	2
Indonesia		x	2
Israel		x	1
Lithuania		x	1
Serbia		x	1
Thailand		x	2

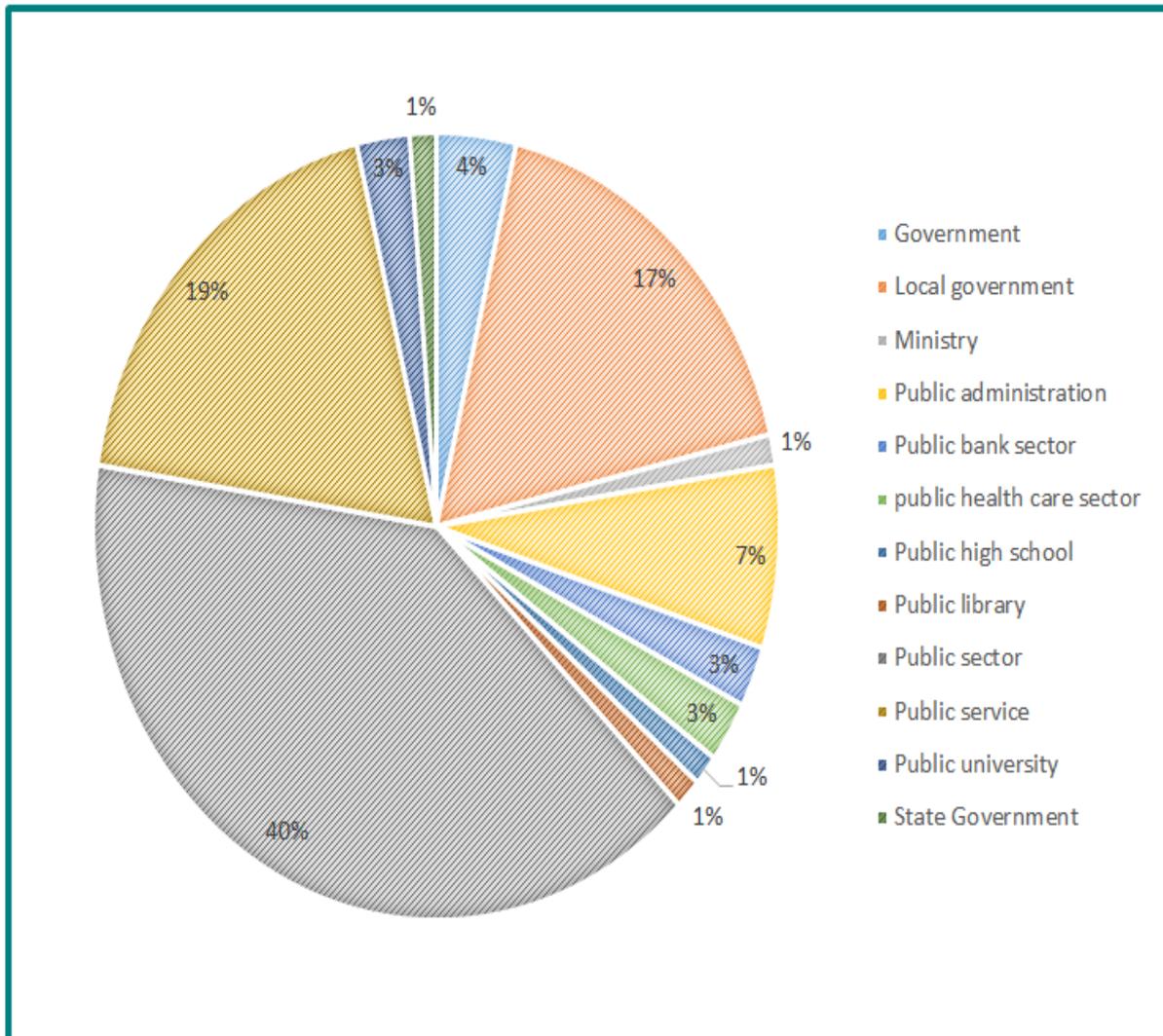
Total		<u>10</u>	<u>17</u>
Multiple countries			1
Non country			4
Total			<u>5</u>

Source: Researchers' calculation, 2019

The associated domains of selected articles;

Another outcome of the SLR was demonstrated in Figure 4, where it was evident that majority of articles published on the topic of PSPM are published in the PS where there were 38 articles based purely on PSPM in PS, followed by public service (16 papers) and local government (14 papers).

Figure 4. Associated domains in selected journals



Source: Researchers' calculation, 2019

Description of Identified Categories

The outcome of the content analysis was presented in line with the seven identified themes. Each section of the findings covered coherent information about the subject of the identified themes.

Category 1: Benefit of performance measurement in public sector. Usefulness consisted of a more comprehensive picture of PSPM, supporting decision-making processes better and, at the same time, providing reports to the public and decision makers, and to support assessment and evaluation of program results and outcomes (Bernstein, 2001) and increasing the success of PMS implementation management commitment through good leadership (Akbar et al., 2012). The PM tool, while delivering better service and greater accountability (Bolton, 2003), would support the enhancement in performance (Speklé & Verbeeten, 2014) and prove to be central to the attainment of anti-corruption (Fritzen, 2007). Additionally, PMSs design could not only be treated as a central thrust for establish strategic planning and management framework (Hoque, 2008) but also enhanced organisational learning, interactive use of SPMS as well as strategic alignment (Srimai et al., 2011).

Category 2: Perspectives of the application of PM in PS. As proposed by Moullin (2004), there were eight essential perspectives of establishing PM including; (1) Using a balanced set of measures; (2) Making sure you measure what matters to service users and other stakeholders; (3) Involving staff in determining the measures; (4) Including both perception measures and performance indicators; (5) Using a combination of outcome and process measures; (6) Taking account of the cost of measuring performance; (7) Having clear systems for translating feedback from measures into a strategy for action; (8) Focusing on continuous improvement of measurement systems, not a blame culture. Besides, based on different countries having different cultures, politics and choice preferences, Woelert (2015) argued that effective PM application in PS in Australia depended largely on the supporters of the application of PM who could be budget officers and agency personnel in state governments (Willoughby, 2004). Simultaneously, the public organizations (POs) should take notice of output specification; measuring quality and effectiveness and identifying the client in order to realise better performance (Di Francesco, 1999). The PMSs must be based on the drivers of success to support the quest for Organisational Excellence (Mani et al., 2003).

Category 3: Exploring different measurement approaches. Most of the research in SLR about implementing PM in the PS depended on the object of the POs, including coping with environmental and organisational change (Brignall, 1993); providing service to public facilities (Parkan, 1999); addressing organizational goals and achievements (Wang, 2002); measuring the performance of utilities (Kumar & Managi, 2010); Setting Business Excellence in the organisation (Kanji & Moura E Sá, 2007); depending on the objectives of the

individual undertaking the analysis (Smith, 1995); assessing the financial performance of local governments (Turley et al., 2015). Moreover, with the goal to develop a new method for measuring productivity in large POs, a measurement method was presented to meet the need for developing more sophisticated measurement systems (Jääskeläinen & Uusi-Rauva, 2011). Building on the importance of PM in enhancing accountability and responsibility of government action, financial data from annual financial reports (Carmeli, 2002) a performance and strategic management system had been introduced (Lilian Chan, 2004). The advantages of the scorecard went well beyond simply measuring performance: strategic, organizational and human benefits were gained (Dreveton, 2013). The pairing of a continuum approach to PM along with specific management activities provided public managers with a new understanding of how PMSs may be designed to reflect the complexity of POs (Oh & Bush, 2015). The complex combination of PM methods was known in the business sector and applied in PS (Balabonienė & Večerskienė, 2015), due to the implementation of the Balanced Scorecard (BSC) experienced problems with measurement of performance metrics and aggregation of data (Carmona & Grönlund, 2003). The Public Sector Scorecard (PSS) then proved to be an effective framework which helped organisations improve outcomes for service users and stakeholders without increasing overall cost, and developed measures of performance that help them improve and assure quality without motivating staff to achieve arbitrary targets at the expense of poor service to the public (Moullin, 2017).

Category 4: Common barriers in the implementation PM in PS. As stated by Siverbo et al. (2019), one of the greatest initial barriers of PSPM was the dysfunctional consequences. It was, in particular, a matter of interactions between PM design and PM use, between control practices in a control system and between PM and context. According to Pidd (2005), the control aspects dominating the others was the reasons why PMSs in public services could lead to dysfunctional consequences even when people operated with the best of intentions. In addition, PM current systems in PS could have a significant influence on improving services (Adcroft & Willis, 2005).

Category 5: Challenge in implementing and improving PM in PS. Measuring the performance in PS in multiple countries was very challenging due to the culture aspect (Bavon, 1995). Another challenge was the limitation of effectiveness when cascaded down to lower levels of the organisation due to various inter-related problems of leadership, training, feedback, employee empowerment and weak incentive schemes combining to cause communication difficulties (Umashev & Willett, 2008).

While Phusavat et al. (2009) argued that four important roadblocks existed in implementing PM in an organisation related to staff empowerment, budgeting, external knowledge, and linkage with software usages, Jääskeläinen and Sillanpää (2013) claimed that the greatest challenge when implementing PSPM was the commitment of the operative level to reach

achievement and that the chosen measurement tool was suitable for the identified managerial requirements of the organisation. Additionally, the challenge in implementing PSPM was that the respect to an model of New Public Management (NPM)-based system lied in both measures and methods (Agostino & Arnaboldi, 2015), treating audiences as consumers and citizens and the range of stakeholders (Hastings, 2004).

Category 6: Factors shaping PM in PS. In the scope of PS, another critical success factor for PM were the implementation of Cognitive factors (e.g., Strategic leadership and change; Managing stakeholders; Goal coherence; Defining Pis); Behavioral factors (e.g., Entrepreneurship; Knowledge management; E-governance; HR empowerment; Citizen satisfaction) and Ethical factors (e.g., Conceptual freedom; Meritocracy) as they increased in significance at that time (Sotirakou & Zeppou, 2006). In a research on PSPM in Finland, Rautiainen (2010) reported that Contending legitimations have an effect on PM. Nevertheless, in the developing countries, the instability, poor strategic planning and policy analysis, an implementation gap and uncritical, uninformed transfer of Western performance management initiatives could impact the PM, as seen in Estonia (Nõmm & Randma-Liiv, 2012). Research undertaken in China provided some appreciation of the unified political and administrative system, the Chinese developmental state and its performance legitimacy strategy, but other areas had negative effects on performance measures such as the decentralized intergovernmental systems, the bureaucratic culture and the informal rules (Jing et al., 2015). Consequently, Turkish public administration only got a high success in applying PM through taking notice of the organisational support, technical capacity and quality of performance measures (Eliuz et al., 2016). Furthermore, the finding of Carlucci et al. (2014) proved that the political, cultural and rational factors may affect PM in Italy. At the ministerial level, the characteristics of the activity could play a significant role in the success of PM (Barbato & Turri, 2017).

Category 7: The method for improvement PM in PS. As PM is becoming increasingly important in PS, development of a PMS is best served by a strategic planning approach with top management support, active management participation in goal setting, a small manageable number of goals, a strong link with the budget process, and an independent evaluation process (Tuck & Zaleski, 1996). In addition, legislators should make an effort to define more precisely the intended results of the law and the programs they authorise and should leave managers enough room to select what should be done and which measures to use to demonstrate progress toward achieving the results prescribed by law makers (Halachmi, 2002). Besides, the empirical analysis stressed the importance in a democracy that both central and local government provide information on efficiency and effectiveness so that voters were in a better position to judge whether they are getting value for money (Haselbekke, 1995). Moreover, a better understanding in causal relationships, improving the informativeness of used measures and the role of the measures as communication devices,

and using the measures as incentives for improvement (Pekkanen & Niemi, 2013) with significant change in the practices of accountability for PM and risk management within the PS, the better the result of the improvement performance (Rana et al., 2018).

The Research Gaps and Future Research Avenues

Firstly, PMSs was stated to represent the principal element driving the management process and that the information produced by PMSs could be used for diverse purposes (Sole & Schiuma, 2010). Based on the evidence presented in the descriptive analysis, there was a slight difference in the prior literature on applying PM in PS due to the regionally heterogeneous differences. The literature showed that these studies were mostly conducted in the USA, followed by Italy, Finland, the UK and Australia. The SLR also proved that although the PSPM literature on less developed and developing countries only gained scholarly attention in the last decade, studies from these economies are still nascent. All in all, the PSPM were suggested to be interpreted differently, based on its geographical area.

Secondly, despite the significant volume of studies on PSPM, there is a scarcity of empirical research depicting blow by blow the systems and processes applied at diverse levels of government to evaluate and manage performance. One of the most vital matters is that there is an urgent claim for a generalized model of PM for all type of PS, not only to implement but also to overcome the challenging demands in their operations. On the other hand, remarkable renovations in performance and results-based accountability have not been entirely accomplished, and research iss still been needed to define the key determinants of successful design, implementation, and use of PMSs.

Thirdly, there were no plain PM tool usages for almost all various phases of PS. As being established to be used for several purposes, the main activity of PSOs were possibly assumed to be for the social, educational, scientific, cultural, sport and other paid or free services as stipulated in the legal acts, and the residents, in corresponding to the set terms and conditions. PSs' activities were arduous to differentiate from one another, had numerous principals, produced results as well as other organised testing, were demonstrated over a lengthy period and additionally not all PSOs were analogous. There has still been an increasing claim for a strong PM framework to meet the challenging demands in their activities including generalising the basic standards of the PS requirements as well as effortless adjustment according to the characteristic of each type of organisations in PS.

Conclusions and Implications

In a nutshell, the scientific literature of the past thirty years to identify the features and obstacles of PSPM has been systematically conducted through SLR. The adoption of an SLR



appeared to be very useful and is not only treated as an instrument to answer our key research questions but also to provide the important insights that can bring out several benefits.

First of all, the findings of this current research also provide a great deal of useful knowledge of PSPM which plays an important role in helping managers who deal with steering organisations toward achievement of their performance goals to make decisions on whether the associated benefits are worth the respective costs and investments in evaluating alternative PM for PSOs. Furthermore, taking these results into consideration, managers can gain an in-depth understanding to come to a better decision on a given option, of not only the associated upsides but also the related downsides and pitfalls of the PM tool and how to use it efficiently and effectively. Next, legislators should make an effort to define more precisely the intended results of the law and program they authorize and should leave managers enough room to select what should be done and which measures to use in order to demonstrate progress towards achieving the results prescribed by law makers (Halachmi, 2002).

Based on the analysis of prior research, this work identified detrimental PSPM antecedent effects and potential routes through which they can jeopardize performance. Thereby, the study uncovered implied causal relationships of high relevance for managers. The study fosters managers' conceptual understanding of the reasons for PSPM failure. Thus, managers should take notice of evaluating the evidenced and suggested performance effects in this paper to both broaden their perspective of possible unfavourable PS scenarios and develop their preparedness for and resilience to them.

In recognition that lack of success can be reached without sharing foundations embedded among practitioners in the academic arena, validity tests of the foundations will be welcomed to verify and complement them in contexts outside of the academic literature.

Notwithstanding the rigorous SLR approach used by this study, a dash of limitations is still in need of being tackled. Firstly, the study was limited to publications within a 30- year period gathered from 4 databases, the choice of number and type of keywords, the resulting selection of studies, the choice of relevant outcomes from the interpretation, the generalisation and the application of the results. Secondly, the synthesized articles were restricted to only those articles published in peer-review journals although references were made to evidence from other sources to reduce bias, excluding items such as books and gray literature. However, the value of this study lied within its robust and exhaustive methodology of synthesizing a large body of evidence from prior studies on the topic for effortless comprehension (Denyer & Tranfield, 2009).



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