DOES PAY FOR PERFORMANCE WORK IN PUBLIC ORGANIZATIONS? EMPIRICAL EVIDENCE FROM ITALY

Michele Fabrizi*, Silvia Pilonato*

*Department of Economics and Management, University of Padova, Italy

Abstract

The purpose of the paper is to investigate the relationship between pay-for-performance compensation and organisational performance in the setting of Italian local governments. Pay-for-performance systems have been introduced in the majority of the OECD's countries as part of their performance management systems, but research on their effects is still in its infancy. This study contributes to filling this gap by using a sample of Italian local governments to empirically determine whether variable compensation translates into higher future performance.

The research methodology uses a unique hand-collected database. The study uses the measures of the local governments' performance defined along six key dimensions (standard of living, services and environment, employment level, law and order, population, leisure), over the period 2010-2013, provided by an independent source. Detailed data on managers' compensation for each local government is obtained from Italy's Treasury Department, and other variables on local governments were hand collected by official documents. A multivariate analysis is conducted on 398 observations.

The main results show a positive association between future performance and the percentage of variable compensation granted to local managers. Moreover, additional analyses show that this result is not driven by managers' total compensation but it depends on the composition of managers' compensation. Overall, empirical evidence reported in this study suggests that public organisations might benefit from the introduction of pay for performance systems.

Keywords: Performance Measurement, Pay for Performance, Variable Compensation, Public Organizations, Local Managers

1. INTRODUCTION

The diffuse climate of change management and the associated waves of reforms in the public sector have resulted in pressure on many public organisations and local governments from a variety of sources to improve their accountability and performance (McAdam, Hazlett and Casey, 2005).

Among these reforms, often positioned under the New Public Management (NPM) umbrella, performance measurement (PM) has arisen as a way to make managers accountable and improve organisational performance. In particular, some authors argue that PM systems are becoming one of the main pervasive aspects of organizational life, especially in the public sector, where they have been emphasized as a substitute for market pressure for organizations that operate without market competition (Hood, 1991; Guthrie, Olson and Humphrey, 1999; Kloot and Martin, 2000; Pollitt and Bouckaert, 2000; de Bruijn, 2002; Townley et al., 2003; Cavalluzzo and Ittner, 2004; Newberry and Pallot, 2004; Radnor and McGuire, 2004; Verbeeten, 2008; Perry, Engbers and Jun, 2009; Spleklè and Verbeeten, 2014; Arnaboldi, Lapsley, and Steccolini, 2015). Consequently, new management practices have been introduced aiming to improve both the quality of the services provided and their overall performance (Radnor and McGuire, 2004, McAdam, Hazlett, and Casey, 2005). Within this wave of change, particularly emphasis has been given to the introduction of pay-for-performance (PfP) schemes, which are appealing

because they help to make civil servants more accountable than before since the results to be achieved must be defined ex-ante and monitored both throughout and ex-post (Ketelaar, Manning, and Turkisch, 2007). Although some studies provide preliminary evidence that the emphasis on performance measures and goal attainment can be a motivating factor in the private as well as in the public sector (Latham, Borgogni, and Petitta, 2008), therefore finding a positive association between the use of PM system and organizational performance (Gomes et al., 2017), other researchers are skeptical about the effectiveness of these practices, claiming that the complexity of public institutions may negatively affect PfP systems and cause significant dysfunctional effects (Glynn and Murphy, 1996; Poister and Streib, 1999; Kloot and Martin, 2000; De Brujin, 2002; Cavalluzzo and Ittner, 2004; Radnor and McGuire, 2004; Pollanen, 2005; Perry, Engbers, and Jun, 2009; Andrews, Boyne, Moon, and Walker, 2010).

Building on this debate, this study contributes to the debate on the impact of PfP on organisational performance and provides original empirical evidence in a country where the NPM reform is an ongoing issue. The article focuses on Italian local governments and tests whether the percentage of total pay linked to performance (variable compensation) granted to executives affects the organisations' future performance. A unique set of data on the compensation structure of executives from 105 Italian local governments over the period 2010-2013 is used. Italy's Treasury Department provided detailed information about the composition of local managers' pay, which was matched with a comprehensive performance score obtained from an independent Italian business newspaper that each year ranks Italy's local governments on their performance along six dimensions (standard of living, services and environment, employment level, law and order, population, leisure). Importantly, in contrast to most of the earlier research, our study does not use self-reported scores of performance but measures performance using a third-party independent ranking. Using a regression analysis, a positive and significant association between the percentage of variable compensation and future performance is documented. Therefore, the results suggest that the implementation of PfP schemes in public organisations has the potential to positively affect organisation's future performance. Additional analyses show that this result is not driven by the amount of managers' total compensation but it is specific to the compensation's structure.

This study extends research on public sector organisations in several ways. First, to the best of the authors' knowledge, this is one of the first studies investigating the effectiveness of PfP schemes in public organisations using an external and independent performance score. Thus, concerns related to relying on performance variables reported by internal managers or politicians are addressed (Binderkrantz and Christensen, 2012; Spleklè and Verbeeten, 2014). Second, in contrast to most prior research (Newberry and Pallot, 2004; Verbeeten, 2008; Weibel, Rost and Osterloh, 2010; Binderkrantz and Christensen, 2012) this study investigates the association between public organizations' performance and reward systems using a large-scale sample instead of a case study methodology or a meta-analysis, thus it complements earlier studies that use other research methods. Third, this research contributes to the debate on the diffusion of PfP in

local governments. The majority of the extant research in this area addresses the development of PM systems and PfP schemes in central governments (Guthrie and English, 1997; Radnor and McGuire, 2004; Perry, Engbers and Jun, 2009; Cavalluzzo and Ittner, 2004; Binderkrantz and Christensen, 2012; Spleklè and Verbeeten, 2014) or other public organizations (Radnor and McGuire, 2004; Verbeeten, 2008; Hvidman and Andersen, 2014), while the local government setting remains largely unexplored (Gomes et al., 2017).

We believe that the focus on local governments in studying the effectiveness of PfP systems represents a notable contribution for several reasons. First, local governments in all OCED countries have similar administrative and service delivery responsibilities, so they provide a homogeneous research setting (Mussari and Caperchione, 2000). Second, they can autonomously organise their internal resources and processes, so they are a good setting to test the relationship between PfP systems and performance. Third, extant research on PfP schemes in local governments primarily focuses on the operational development of PM systems, placing little emphasis on their effectiveness (Kloot and Martin, 2000; Pollanen, 2005).

The paper is organised as follows. The next two sections present the theoretical background, followed by the hypothesis. In the third section, a summary of the main performance measurement initiatives adopted by the Italian local government is proposed. In the fourth section, the research design and the data used are described. Results are discussed in the fifth section and finally concluding remarks and limitations are presented.

2. BACKGROUND AND LITERATURE REVIEW

In most OECD countries the introduction of PM systems has been strictly related to new accountability dimensions because these systems help increasing transparency about the results achieved and become a fundamental issue in the provision of high-quality public services (Broadbent and Guthrie, 1992; Guthrie and English, 1997; Radnor and McGuire, 2004; Pollanen, 2005; Ketelaar, Manning, and Turkisch, 2007). This new form of managerial accountability, which deals with the achievement of designated targets, has changed the traditional forms of public accountability, such as political, financial, professional and administrative accountability (Glynn and Murphy, 1996), to become more focused on monitoring resources and achieving results, rather than on defending the procedures and norms involved in the delivery of services. While the previous forms of accountability were not effective in holding public servants accountable for their actions (Glynn and Murphy, 1996), PM reform was introduced to promote accountability. Indeed many purposes are attributed to PM systems: communication, measurement, accountability, and compensation, as well support to decision making and organizational learning (Guthrie and English, 1997; Kloot and Martin, 2000; Lapsley and Pallot, 2000; Cavalluzzo and Ittner, 2004; Radnor and McGuire, 2004; Johnsen, 2005; Pollanen, 2005; Johansson and Siverbo, 2009; Gomes et al., 2017).

In particular, among PM systems change into compensation practices with the introduction of PfP schemes has been imposed directly by the new law requirements in many OECD countries.

However, literature highlighted many ambiguous issues that can act as barriers in the implementation process of PfP and consequently, in its effects on the overall organisational performance. For example, specific features of the institution and the local culture: whether the administration is political or participative; difficulties in identifying and measuring performance; differences in stakeholder perceptions (Hughes, 1998; Andrews, Boyne, Moon and Walker, 2010; Padovani and Young, 2012,). Indeed, PfP schemes in public organizations tend to be complex also because of the nature of the services provided, the difficulty in determining meaningful measures, the stakeholders' engagement, and the overlap between political and managerial functions (Kloot, 1999; Poister and Streib, 1999; Kloot and Martin, 2000; De Brujin, 2002; Cavalluzzo and Ittner, 2004; McAdam et al., 2005; Pollanen, 2005; Verbeeten, 2008; Andrews, Boyne, Moon and Walker, 2010; Langbein, 2010; Hvidman and Andersen, 2014; Gomes et al., 2017). Given these complexities, PfP schemes may have some dysfunctional effects if the organisational characteristics are not taken into account in their implementation (Guthrie and English, 1997; Kloot and Martin, 2000; Cavalluzzo and Ittner, 2004; Johansson and Siverbo, 2009; Spleklè and Verbeeten, 2014; Arnaboldi, Lapsley and Steccolini, 2015).

Within this reform pattern, many OECD countries have seen dismantling of employees' traditional contracts in favour of a new system based on flexibility, responsibility, assessment and payment by results (Newberry and Pallot, 2004; Ketelaar, Manning and Turkisch, 2007; Moynihan, 2010; Conrad and Uslu, 2011). While the traditional reward schemes were based on criteria like fixed pay levels, lifelong tenure and position pay, performance-related pay has been introduced to address budget constraints and improve performance (Ketelaar, Manning and Turkisch, 2007). However, complexities in the new processes and misunderstanding related to the new monetary incentives sometimes resulted in incentives' failing to positively affect employees' level of effort and performance (Bonner and Sprinkle, 2002). For example, some researchers have claimed that, given the difficulties in the identification of core objectives and their related measures, transparency may be not guaranteed and employees may see these systems as unfair and invalid (Glynn and Murphy, 1996; Radnor and McGuire, 2004; Perry, Engbers and Jun, 2009). So far, these processes seem to be particularly complex in the public sector, and their impact has not yet been completely identified (Ketelaar, Manning and Turkisch, 2007; Perry, Engbers and Jun, 2009; Moynihan, 2010; Spleklè and Verbeeten, 2014; Arnaboldi, Laplsey and Steccolini, 2015). This paper aims at better understanding whether PfP systems applied to public organisations are associated with better performance.

Few studies that try to investigate the relationship between the use of PfP systems and performance of public organisations, providing contrasting evidence although a variety of research methods used.

Examining the Malaysian personal and budgeting policies, Siddiquee (2010) sheds light on the introduction of a remuneration system that links individual performance to pay. The author shows that, because of discrepancies between policies and practices, the innovation did not produce the desired impacts in terms of either resource savings or performance improvement. Using the Danish central government as a research setting and information on performance reported by Danish agencies, Binderkrantz and Christensen (2012) test the incentive effect of PfP schemes to improve public-sector performance and find no evidence of a positive relationship between goal achievement and pay to agency heads (measured both in terms of bonuses and total salary). In addition, their data reveal a positive and significant relationship between total executive pay and the agency's experience on performance contracting (that is the number of years during which agencies have had performance contracts). The authors contend that the absence of a positive relationship between executive compensation and performance could be due to the multitasking nature of the executives' work, which makes it difficult to design a compensation scheme that takes into consideration all of the activities they perform. On the other hand, Mulvaney, McKinney and Grodsky (2012) argue that the application of a PfP system is an effective method for motivating employees and increasing their performance, observing that it introduces "justice" into human resource management by rewarding employees in proportion to their contribution to overall performance. Perry, Engbers, and Jun (2009) and Frey (2013) perform a systematic review of the debate concerning public-service motivation and PfP systems: they find inconclusive results, although they argue that these schemes may produce negative effects in public-service organizations because of their incompatibility with institutional rules and the intrinsic motivation that characterizes public employees. Using the same line of reasoning, Moynihan (2010) claims that the application of PfP systems to complex public services may damage employees' motivation because of a crowding-out effect, leading to a loss of interest in the job, reduced effort in performing the tasks at hand and overall lower performance (Deci, Koestner, and Ryan, 1999; Moynihan, 2007; Langbein, 2010; Binderkrantz and Christensen, 2012; Arnaboldi, Lapsley, and Steccolini, 2015). Nonetheless, some studies do not exclude the possibility that employees in the public sector may respond to monetary incentives as predicted by focusing on measured results and financial bonuses (Moynihan, 2008). As a result, whether PfP systems have a positive impact on performance in public organisations remains the subject of debate (Binderkrantz and Christensen, 2012).

3. HYPOTHESIS DEVELOPMENT

The relationship between PfP systems and performance in public organisations can be studied building on two theoretical perspectives: the agency theory and the cognitive evaluation theory (Frey, 2013). The agency theory argues that managers in the public sector are agents of the politicians (just as managers in private firms are agents for shareholders) and that they are usually better informed about their organizations' characteristics than the politicians are, in terms of resources available, internal processes, goals achieved and general conditions of the organization. For this reason, they should be exempted from traditional bureaucratic controls so they can manage the organisation effectively, while the alignment of interests between managers and politicians should be obtained through careful specification and monitoring of performance, along with incentives (Newberry and Pallot, 2004). Overall, agency theory advocates that monetary incentives work by increasing individual effort, which leads to increased individual and organisational performance (Bonner and Sprinkle,

2002). Even if in the public sector there may be multiple-agent relationships (Mayston, 1993), many authors claim that these mechanisms are expected to work as well in the public sector as in the private sector (Newberry and Pallot, 2004; Binderkrantz and Christensen, 2012). In particular, PfP systems are seen as a managerial tool that can change public employees' culture and improve the quality of the services provided by shifting attention from traditional rules and input regulation to management by objective and goal-setting, thereby improving public-sector performance (Glynn and Murphy, 1996; Hvidman and Andersen, 2014). Thus, under this perspective, PfP systems are expected to improve public organisations' performance.

In contrast, the cognitive motivation theory focuses on the "satisfaction an individual derives from involvement in an activity without external rewards" (Frey, 2013, p. 953) and on the crowding-out of this satisfaction that results from the introduction of monetary incentives. The cognitive motivation theory addresses the psychological complexities of individual behaviours and sheds light on the underlying forces that lead an individual to increase effort and improve performance. Deci et al. (1999) argue that financial incentives, including performance-related incentives, reduce intrinsic motivation. In particular, the literature that criticises the traditional agency theory framework, as it is applied to the public sector, argues that public agents do not get utility solely from monetary incentives, as they are motivated intrinsically by the organisation's ethical purposes or by the agent's professionalism (Dixit, 2002; Moynihan, 2007). Overall, the theory does not clarify whether PfP systems increase performance in the public sector as agency theory and cognitive motivation theory predict different relationships between PfP schemes and performance. Moreover, many public administration scholars, political scientists, and practitioners have agreed that public organisations have more ambiguous and hard-to-measure goals than private organisations do (Langbein, 2010; Jung, 2011), and this might cause PfP systems to be ineffective when applied to public organisations. Given the above-mentioned contradictory predictions, we investigate the following non-directional research hypothesis:

Hypothesis 1: Pay-for-performance is associated with future performance in public organisations

4. RESEARCH SETTING AND DATA

This paper tests the main hypothesis using Italy as research setting and focusing on the largely unexplored setting of local governments.

Local governments represent an ideal research setting to test our hypothesis for several reasons. First, local governments in all OCED countries have similar administrative and service delivery responsibilities, so they provide a homogeneous research setting (Mussari and Caperchione, 2000). Thus, results can be more easily generalised. Second, local governments can autonomously organise their internal resources and processes, so they are a good setting in which to test the relationship between PfP systems and performance. Third, the Italian setting provides useful data at the local government level. Specifically, we obtained:

• detailed compensation data for the managers of each local government that distinguishes between total compensation and the pay-for-performance component of compensation, allowing us to compute the percentage of managers' compensation that is linked to performance;

• an objective measure of the local government's performance that is obtained from an independent third party. Therefore, this study does not have to rely on self-reported scores of performance and it can measure performance in a consistent way within the sample.

Italy is a civil-law country, where regulative power has a fundamental role in reforming public-sector organizations (Liguori, 2012); since the beginnings of the 1990s, Italian local governments have been experimenting with a large set of reforms mainly oriented toward introducing management control systems, accrual accounting, budgetary systems, performance measurement and new forms of external reporting (Anessi Pessina, Nasi and Steccolini, 2008; Liguori and Steccolini, 2011; Liguori, 2012). In particular, an NPM inspired reform has been shaping the local governments in keeping with a managerial model aimed at replacing the "old" bureaucratic organisations (Panozzo, 2000; Anessi Pessina, Nasi and Steccolini, 2008; Nasi and Steccolini, 2008; Liguori and Steccolini, 2011; Liguori, 2012). In many reform bills (i.e. Act No. 142 of 1990, Act. No. 267 of 2000), local governments are defined as organisations that represent the community, protect its interests and promote its development. In order to achieve these important aims, a new organisational function, the (local) manager, was introduced and her activity should be assessed by the results achieved. Moreover in 1993 and 1995, new decrees (No. 29 and No. 77, respectively) required the introduction of detailed managerial "devices" like accrual accounting, management control systems, strategic plans, executive budgeting and new financial reports, integrated within a new emphasis on human resources and top organizational functions (both political and managerial). More recently, Act No. 150 of 2009 required local governments to identify and develop a "performance cycle" with a strong focus on individual and organizational performance related to the results achieved., The political board of each local government yearly identify performance objectives assigned to top managers and as a consequence local managers receive yearly a part of their salary depending on the performance targets achieved. In this way, this new act strengthened local government's focus on performance issues and highlighted opportunities related to the use of PfP. It is clearly supposed that performance targets are different among local government and, within the same local government, among managers, although they are all defined to improve the well-being and the development of the local community (since this is the main purpose of each local government itself). For this reason, it is possible to compare the results achieved by different local governments along common dimensions, which represent traditional areas of intervention of local agencies. Therefore, this study focuses on the four-year period immediately after the introduction of Act No. 150 – that is, 2010 to 2013. In Italy, local governments are mainly divided into two levels: i) 107 Provinces and 8,045 Municipalities. Because of data availability, we focus our analysis at the Province level.

5. RESEARCH DESIGN AND DATA

5.1. Empirical Model

The hypothesis defined in the previous section is tested by using an ordinary least-squares (OLS) model. This model is commonly used in prior research investigating the relationship between executive compensation and performance. For instance, Mehran (1995) employs an OLS model to investigate the relationship between firm performance and managers' compensation structure for 153 manufacturing U.S. firms, while Core et al. (1999) adopt the same estimation model to analyse the impact of excess compensation on future firm performance. In our setting, the control variables are necessarily different from those used in the previous studies since we are focusing on local governments. Thus, the following OLS model with year fixed effects is estimated to test the research hypothesis:

$$PERF_{i,t+1} = \beta_0 + \beta_1 PfP_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 FIN\_PERF_{i,t} + \beta_4 N\_EXE_{i,t} + \beta_5 ELECTIONS_{i,t} + \beta_6 NEAST_i + \beta_7 NWEST_i + \beta_8 CENTER_i + \varepsilon \quad (1)$$

where:
- PERF is the natural logarithm of the performance score of the local government i, measured in year t +1
- PFP is the amount of compensation linked to the manager's performance in year t
- SIZE is the size of the local government (inhabitants) in year t
- FIN_PERF is the yearly surplus as measured by the budgetary accounting system and standardised by the number of habitants in year t
- N_EXE is the natural logarithm of the number of managers in the local government standardised by the number of habitants in year t
- ELECTIONS is a dummy variable that equals 1 if a local election took place in that year, and 0 otherwise in year t
- NEAST – northeast, NWEST- northwest and CENTER – center are dummies identifying geographical position of each local government.

To control for the effect of outliers, all variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered at the local government level. The year fixed effects included in the regression control for time trends that may affect managers' compensation and future performance.

5.2. Dependent Variable

The measures of local governments' performance rely on the annual national rank of *Il Sole 24 ore*, the most relevant Italian business newspaper funded in 1865 (it is referred to as "*The Newspaper*" thereafter). *The Newspaper* publishes a ranking of all local governments (Provinces) each year, measuring their performance along six key dimensions:
1. The standard of living;
2. Services and environment;
3. Employment level;
4. Law and order;
5. Population;
6. Leisure.

As explained in the previous paragraph, these dimensions are consistent with main purposes of local governments because they should highlight increasing or decreasing in the development and well-being of each local community. The performance dimensions included in the score strictly reflect those reported in Law No. 267 of 2000, which establishes the primary objectives that local governments should pursue, so local governments' performance is measured in a consistent way. In contrast to most of the earlier research, this study does not use self-reported scores but measures performance using a third-party independent ranking.

Each dimension is measured using six metrics, and a final score is obtained by equally weighting the scores for the six dimensions. The six performance dimensions provide a comprehensive assessment of the local government' performance in promoting the well-being of the community. For instance, the "standard of living dimension" investigates performance parameters such as the local GDP per habitant and the average pension benefits; the "service and environment" dimension focuses on the level of pollution and services offered to citizens (including healthcare); the "employment level" dimension includes measures such as the number of new corporations and the employment rate; the "law and order" dimension focuses on the number of extortions and robberies; the "population" dimension monitors parameters such as the population density; finally, the dimension "leisure" focuses on leisure opportunities offered to citizens such as libraries, theaters etc.

PERF in the model (1) is computed as the natural logarithm of the performance score, and it is measured in the regression analysis in year t+1. Measuring performance one year ahead helps to mitigate reverse causality issues, which are an important source of endogeneity in our research setting.

5.3. Independent Variable

The research variable is the percentage of total compensation granted to the local governments' managers that is linked to performance (P*f*P). In order to obtain detailed data on the total amount and composition of managers' compensation, the authors contacted the Italy's Treasury Department and retrieved this piece of information for each local government.

Each local manager receives compensation in three forms:
1. *Fixed salary*, which is the portion of total salary that is granted to the manager by law and that does not depend on any performance outcome;
2. *Role's salary*, which is the portion of total compensation that is granted to the manager according to his or her role in the organisation's hierarchical structure and that does not depend on any performance outcome;
3. *Pay-for-performance salary or variable compensation* (PFP salary), which is the amount of compensation linked to the manager's performance. Performance targets are yearly defined by the political board.

The variable P*f*P in the model (1) is computed as follows:

$$PfP = \frac{PFP \; salary}{PFP \; salary + role's \; salary + fixed \; salary}$$

Data used to compute P*f*P is based on the aggregated level of compensation provided to all managers of a given local government in a given year. Therefore, the variable P*f*P measures the average percentage of variable compensation granted to all managers in a given year.

5.4. Control Variables

To control for potential confounding effects, the regression model includes an array of variables that may affect the relationship between managers' variable compensation and performance. This piece of information was hand-collected by searching the website of each local government. If not available on the website, missing data have been retrieved by contacting a representative of the local government. Specifically, SIZE controls for the size of the local government (computed as the natural logarithm of the number of inhabitants), which previous studies usually consider to be correlated to NPM innovations, organizational complexity and visibility (Poister and Streib, 1999; Anessi Pessina, Nasi and Steccolini, 2008; Nasi and Steccolini, 2008; Johansson and Siverbo, 2009; Morten, 2011; Binderkrantz and Christensen, 2012). FIN_PERF controls for the local government's financial performance, computed as the yearly surplus as measured by the budgetary accounting system and standardised by the number of habitants. This is a measure of resource constraint. As many authors claim (Anessi Pessina, Nasi and Steccolini, 2008; Johansson and Siverbo, 2009; Morte, 2011), public-sector organizations that experience efficiency problems should be inclined to use performance systems to improve their performance, but a lack of financial resources may discourage local governments from using variable compensation, since compensating managers for the additional risk often increases costs. Because managerial and political actors both have roles in the local governments' performance cycle (Hughes, 1998; Anessi Pessina, Nasi and Steccolini, 2008; Nasi and Steccolini, 2008; Johansson and Siverbo, 2009; Langbein, 2010; Morten, 2011; Binderkrantz and Christensen, 2012), the regression model controls for the size of the managerial team and potential window-dressing activities that may occur in election years. Specifically, N_EXE is the natural logarithm of the number of managers in the local government standardised by the number of habitants and ELECTIONS is a dummy variable that equals 1 if a local election took place in that year, and 0 otherwise. Finally, the regression controls for the geographic position of the local government since there are significant differences among northern, central and southern Italy in terms of economic development, cultural and political environment (Anessi Pessina, Nasi and Steccolini, 2008; Nasi and Steccolini, 2008). Specifically, four dummies identify local governments in the northeast (NEAST), northwest (NWEST), center (CENTER), and southern parts of Italy. Southern Italy is used as a control group.

5.5. Sample Selection

Data on local governments' performance scores were collected from the *The Newspaper*'s website for the period 2010-2014. Since performance is measured one year forward, the regression analysis uses data over the four-year period 2010-2013. This process provides a starting sample of 428 entity-year observations. The performance data were merged with information on managers' compensation obtained as previously described. Thirty entity-year observations were lost because of missing data – eleven in 2010, eight in 2011, six in 2012 and five in 2013. After all of the control variables to estimate model (1) were collected, a final sample of 398 entity-year observations resulted, generated from 105 unique local governments. Table 1 summarises the sample selection process and describes the distribution of observations over time.

Table 1. Sample selection and distribution of observations over time

Panel A: The summary of the sample selection process

Entity-year observations from *Il Sole 24 Ore*	428
Less missing data on managers' compensation	30
Final entity-year observations	398
Unique entities	105

Panel B: The distribution of observations used in the regression analysis over the sample period

Observations	*Year*
96	*2010*
99	*2011*
101	*2012*
102	*2013*
398	

5.6. Data Description

Table 2 reports descriptive statistics for the variables used in the analysis. To ease interpretation, the variables in Table 2 are not reported in the logarithmic form and the variable N_EXE is multiplied by 1,000. In the sample, the mean (median) compensation linked to performance is 8.9 percent (9.1%), with substantial cross-sectional heterogeneity across local governments. Specifically, the (untabulated) lowest value in the sample is 0 percent, and the (untabulated) highest value is 27.7 percent. Results show a large cross-sectional variation on the performance score assigned to each province, which ranges from a minimum of 369.9 to a maximum of 626.0 (untabulated). The mean (median) performance score is 507.5 (520.6), the average number of managers is fourteen (median thirteen), and 18.3 percent of the observations are from years in which a local election took place. Finally, Table 2 reveals that the 45.5 percent of the observations are from local governments in northern Italy.

Table 2. Descriptive statistics

	N	Mean	SD	p25	p50	p75
PERF(t+1)	398	507.5	0.112	463.0	520.5	554.9
PfP	398	0.089	0.064	0.034	0.091	0.133
SIZE	398	97,687	0.873	53,349	89,114	149,343
FIN_PERF	398	29.45	3.085	26.72	66.34	158.55
N_EXE	398	0.156	0.051	0.122	0.151	0.185
ELECTIONS	398	0.183	0.387	0.000	0.000	0.000
NEAST	398	0.196	0.397	0.000	0.000	0.000
NWEST	398	0.259	0.439	0.000	0.000	1.000
CENTER	398	0.254	0.436	0.000	0.000	1.000

Note: Distributional statistics for the variables used in the cross-sectional analysis. To ease interpretation, variables are not reported in logarithmic form. PERF is the raw value of the performance score obtained from Il Sole 24 Ore; PfP is the percentage of variable compensation granted to municipalities' managers; SIZE is the number of habitants in each municipality; FIN_PERF is the yearly surplus as measured by the budgetary accounting system and standardized by the number of habitants; N_EXE is the number of managers in each municipality standardized by the number of habitants (only in this table, this figure has been multiplied by 1,000); ELECTIONS is a dummy that equals 1 if a local election took place in a municipality in that, and 0 otherwise. NEAST, NWEST, and CENTER are dummies that equal 1 for municipalities in northeast, north, and central Italy, respectively, and 0 otherwise. All continuous variables are winsorized at the 1st and 99th percentiles.

6. RESULTS

Table 3 presents a preliminary univariate analysis that supports a positive relationship between PfP and local governments' performance. Specifically, Panel A shows the Pearson correlation coefficients among the variables included in the model (1). There is a strong and positive association between future performance and the percentage of PFP salary granted to the local governments' managers. This association, which is statistically significant at the 1% level, provides preliminary evidence for the research hypothesis. To determine the association between PfP and future performance at the univariate level, panel B of Table 3 classifies observations into quartiles according to the amount of variable compensation (PfP) and tabulates the mean and median values of future performance for the top and bottom quartiles. Results show that, in the presence of high variable compensation (top 25%), future performance is significantly higher than in the presence of low variable compensation (bottom 25%). The mean and median values of these differences are statistically significant at the 1% level. Overall, the results reported in Table 3 suggest that local governments whose managers have high percentages of variable compensation outperform those in which managers have low percentages of compensation linked to performance.

Table 3. Univariate analysis

Panel A: The Pearson correlation matrix for the variables used in the model (1)

	PERF(t+1)	PfP	SIZE	FIN_PERF	N_EXE	ELECTIONS	NEAST	NWEST
PERF(t+1)	1							
PfP	0.226***	1						
SIZE	0.067	0.05	1					
FIN_PERF	0.292***	0.093	-0.036	1				
N_EXE	0.236***	0.059	-0.152**	0.154**	1			
ELECTIONS	0.012	0.021	-0.003	0.017	-0.122*	1		
NEAST	0.429***	-0.011	0.133**	0.144**	0.249***	-0.005	1	
NWEST	0.240***	0.223***	-0.089	0.044	0.133**	0.016	-0.292***	1
CENTER	0.134**	-0.008	-0.001	-0.042	-0.069	-0.053	-0.288***	-0.345***

*Note: * p<0.05, ** p<0.01, *** p<0.001*

Panel B: The univariate test for Hypothesis 1

	PERF(t+1)	
PfP	**Mean**	**Median**
Top 25%	6.240	6.265
Bottom 25%	6.161	6.138
Diff (Top - Bottom)	0.079	0.128
P-value	<0.000	<0.001

Note: Panel A shows the Pearson correlation matrix for the variables used in the model (1), and Panel B reports the univariate test for H1. PERF is the logarithm of the performance score obtained from Il Sole 24 Ore; PfP is the percentage of variable compensation granted to municipalities' managers; SIZE is the log of the number of habitants in each municipality; FIN_PERF is the yearly surplus as measured by the budgetary accounting system and standardized by the number of habitants; N_EXE is the log of the number of managers in each municipality standardized by the number of habitants; ELECTIONS is a dummy that equals 1 if a local election took place in a municipality in that year, and 0 otherwise. NEAST, NWEST, and CENTER are dummies that equal 1 for municipalities in northeast, north, and central Italy, respectively, and 0 otherwise. All continuous variables are winsorized at the 1st and 99th percentile.
*, ** and *** denote significance at the 5%, 1% and 0.1% level of significance, respectively.*

Table 4 presents the results from estimating model (1). The coefficient on PfP is positive and statistically significant, suggesting a positive relationship between local managers' variable

compensation and local governments' performance. Given that the dependent variable in the model (1) is the logarithm of future performance, the coefficient on P*f*P is the semi-elasticity of performance with respect to managers' variable compensation (Wooldridge 2002). Results indicate that more profitable local governments perform significantly better than those with lower financial performance, and the coefficients on the geographic dummies indicate that provinces in northern and central Italy outperform those in southern Italy.

Table 4, Column 2 also reports results obtained from estimating model (1) while controlling for current performance. This model is particularly conservative since current and future performances are highly correlated because local governments' performance is sticky over time. Including current performance in the estimated model allows better control for unobservable factors that may affect performance at the time (t+1). The coefficient on P*f*P remains positive and significant after including this additional control. Therefore, the percentage of variable compensation granted to local governments' managers can explain future performance incrementally with respect to current performance. This result further corroborates a positive association between PFP systems and local governments' performance.

Table 4. Variable compensation and future performance: Regression results

	(1)	*(2)*
	PERF(t+1)	*PERF(t+1)*
PfP	0.161**	0.041*
	[2.234]	[1.770]
PERF(t)		0.816***
		[34.597]
SIZE	0.004	0.003**
	[0.573]	[2.197]
FIN_PERF	0.006***	0.001**
	[2.967]	[2.170]
N_EXE	0.014	-0.005
	[0.816]	[-1.180]
ELECTIONS	0.000	0.001
	[0.089]	[0.295]
NEAST	0.208***	0.034***
	[11.279]	[4.844]
NWEST	0.159***	0.029***
	[9.297]	[5.395]
CENTER	0.147***	0.028***
	[7.516]	[4.663]
Constant	6.101***	1.010***
	[37.432]	[6.901]
Year Fixed Effects	YES	YES
Observations	398	398
R-squared	0.697	0.925

Note: Results for the cross-sectional analyses. PERF is the logarithm of the performance score obtained from Il Sole 24 Ore; PfP is the percentage of variable compensation granted to municipalities' managers; SIZE is the log of the number of habitants in each municipality; FIN_PERF is the yearly surplus as measured by the budgetary accounting system and standardized by the number of habitants; N_EXE is the log of the number of managers in each municipality, standardized by the number of habitants; ELECTIONS is a dummy that equals 1 if a local election took place in a municipality in that year, and 0 otherwise. NEAST, NWEST, and CENTER are dummies that equal 1 for municipalities in northeast, north, and central Italy, respectively, and 0 otherwise. All continuous variables are winsorized at the 1st and 99th percentile.

*, ** and *** denote significance at the 5%, 1% and 0.1% level of significance, respectively. Clustered t-statistics are shown in brackets.

6.1. Additional Analyses

An alternative explanation for the results is that local governments using variable compensation to a larger extent also provide managers with higher total compensation than local governments that give managers low P*f*P compensation. Therefore, the results shown in Table 4 could be driven by the amount of total compensation granted to managers and not by the percentage of variable compensation. Since the study's research question is concerned with the effect on the performance of the composition of manager compensation and not the level of total compensation, this section explores this issue in detail. First, model (1) is estimated by substituting P*f*P with the logarithm of managers' total compensation (TOT_COMP); results are reported in Table 5, Column 1. The coefficient on managers' total compensation is not statistically different from zero, suggesting that the results documented in Table 4 are specific to managers' variable compensation and are not driven by the overall level of compensation. Table 5, Column 2 also shows the results when both P*f*P and TOT_COMP are included in the regression model. The analysis shows that, while managers' variable compensation is positively and significantly associated with future performance, overall compensation has a negative relationship with future performance, perhaps because of entrenched managers who can extract excess compensation, which is linked to low future performance.

Overall, the results presented in the paper suggest that the larger the portion of variable compensation granted to managers, the better the local government's future performance.

Table 5. Additional analyses: Total compensation and future performance

	(1) PERF(t+1)	(2) PERF(t+1)
TOT_COMP	-0.030 [-0.824]	-0.085* [-1.801]
PfP		0.245*** [2.874]
SIZE	0.006 [0.802]	0.007 [0.884]
FIN_PERF	0.006*** [3.188]	0.005*** [2.791]
N_EXE	0.012 [0.714]	0.011 [0.675]
ELECTIONS	0.001 [0.227]	0.001 [0.098]
NEAST	0.208*** [10.974]	0.200*** [10.567]
NWEST	0.167*** [9.972]	0.157*** [9.038]
CENTER	0.149*** [7.592]	0.143*** [7.136]
Constant	6.425*** [14.816]	7.010*** [12.988]
Year Fixed Effects	YES	YES
Observations	398	398
R-squared	0.691	0.705

Note: Additional analyses using total compensation. PERF is the logarithm of the performance score obtained from Il Sole 24 Ore; TOT_COM is the log of managers' total compensation; PfP is the percentage of variable compensation granted to municipalities' managers; SIZE is the log of the number of habitants in each municipality; FIN_PERF is the yearly surplus as measured by the budgetary accounting system and standardized by the number of habitants; N_EXE is the log of the number of managers in each municipality, standardized by the number of habitants; ELECTIONS is a dummy that equals 1 if a local election took place in a municipality in that year, and 0 otherwise. NEAST, NWEST, and CENTER are dummies that equal 1 for municipalities in northeast, north, and central Italy, respectively, and 0 otherwise. All continuous variables are winsorized at the 1st and 99th percentile.

*, ** and *** denote significance at the 5%, 1% and 0.1% level of significance, respectively. Clustered t-statistics are shown in brackets.

7. CONCLUSION

The NPM reform wave that involved most OECD countries brought high expectations for improvements in the public organisations' activities (Hughes, 1998; Guthrie, Olson, and Humphrey, 1999; Newberry and Pallot, 2004). The replacement of the traditional model of administration with a management model closely related to that of the private sector meant a transformation in public organisations. While in the traditional model performance was secondary and considered too difficult to measure, the measurement and achievement of results at both the organisational and the individual level are today among pervasive in the majority of organisations (Hughes, 1998; Townley et al., 2003). This important focus on results has led to the development of performance and personnel systems that encourage the assessment and achievement of goals. However, the PM systems introduced by the reforms have been controversial because of the complexity of the variety of accountability dimensions, engaged stakeholders, and cultural factors of each organisation (Guthrie and English, 1997; Verbeeten, 2008; Speklè and Verbeeten, 2014). In particular, incentives and performance-based rewards play a key role in performance measurement systems introduced in the public sector (Newberry and Pallot, 2004; Moynihan, 2007). Although standard agency theory posits that performance incentives increase agents' productivity, cognitive evaluation theory asserts that performance incentives may diminish their intrinsic motivation and, as a result, their performance (Deci, Koestner and Ryan, 1999; Bonner and Sprinkle, 2002; Kunz and Pfaff, 2002;

Moynihan, 2010). This concern is particularly important in local governments, where the intrinsic motivation, that refers to performing an activity with the goal of acting appropriately, is more relevant than it is in the private sector (Lindenberg, 2001; Moynihan, 2007; Frey, 2013). Moreover local governments – and public-sector organisations generally – have special features that include complex interactions among multiple tasks and principals that may explain why a naive application of agency theory could be inappropriate (Dixit, 2002; Newberry and Pallot, 2004; Langbein, 2010; Moynihan, 2010). Because of the scarcity of research on the application of PfP in (European) local governments, this paper focuses on the compensation structure of Italian local governments' managers to study the association between PfP schemes and future performance.

In order to address some of the limits of previous studies, this investigation adopts a regression analysis approach based on detailed information about local managers' reward structures and an external and independent measure of the local governments' performance. This research strategy facilitates the testing of an important research question left open by previous literature: whether the use of reward systems related to performance improves local governments' overall performance. The study uses a research setting in which performance can be measured in a consistent and objective way and detailed data on the composition of managers' compensation in local governments can be acquired.

While the accounting literature provides mixed evidence on the relationship between performance measurement systems and performance (Verbeeten,

2008; Perry, Engbers and Jun, 2009; Binderkrantz and Christensen, 2012; Frey, 2013; Speklé and Verbeeten, 2014), the results of the present study suggest that there is a positive and significant association between PfP and future performance in local governments. In the light of extant literature, our results provide an important theoretical contribution as they document empirical support for the predictions of the agency theory when applied in the public sector setting. Specifically, this study reinforces claims in Verbeeten (2008) that the use of incentives is – under certain circumstances – positively associated with performance in public sector organisations. Moreover, the paper also corroborates findings in Perry et al. (2009) that managers' variable compensation, when set at significant levels, result in the desired effects.

Three important caveats to these results apply. First, the study documents an average effect of PfP systems; however – because of the research method used – this investigation is not able to gain insights on the process of defining and measuring the specific managerial objectives. Second, the focus on a single country means that the results may not be generalizable to countries with other kinds of institutional settings. The influence of national features on the central relationship is a fruitful research area that should be investigated. Finally, the presence of endogeneity does not allow causal inferences to be drawn, so results should be interpreted as documenting a positive and significant association between reward systems and performance, rather than as a causal link. Future research that exploits exogenous shocks in regulations to identify a causal link between compensation and performance in local governments is probably the most challenging but also the most promising avenue to pursue in this research field.

REFERENCES

1. Andrews, R., Boyne, G. A., Moon, M. L., & Walker, R. M. (2010). Assessing organizational performance: Exploring differences between internal and external measures. *International Public Management Journal, 13(2),* 105-129. https://doi.org/10.1080/10967491003766533
2. Anessi-Pessina, E., Nasi, G., & Steccolini, I. (2008). Accounting reforms: Determinants of local governments' choices. *Financial Accountability & Management, 24(3),* 321-342. https://doi.org/10.1111/j.1468-0408.2008.00455.x
3. 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
4. Binderkrantz, A. S., & Christensen, J.G. (2012). Agency performance and executive pay in government: An empirical test. *Journal of Public Administration Research & Theory, 22(1),* 31-54. https://doi.org/10.1093/jopart/mur039
5. Broadbent, J., & Guthri, J. (1992). Changes in the public sector: A review of recent "alternative" accounting research. *Accounting, Auditing & Accountability Journal, 5(2),* 3-31. https://doi.org/10.1108/09513579210011835
6. Bonner, S. E., & Sprinkle, G. B. (2002). The effects of monetary incentives on effort and task performance: Theories, evidence, and a framework for research. *Accounting, Organizations and Society, 27(4–5),* 303-345. https://doi.org/10.1016/S0361-3682(01)00052-6
7. Cahan, S. F., Chua, F., & Nyamori, R.O. (2005). Board structure and executive compensation in the public sector: New Zealand evidence. *Financial Accountability & Management, 21(4),* 437-465. https://doi.org/10.1111/j.0267-4424.2005.00228.x
8. Cavalluzzo, K. S., & Ittner, C. D. (2004). Implementing performance measurement innovations: Evidence from government. *Accounting, Organizations and Society, 29(3–4),* 243-267. https://doi.org/10.1016/S0361-3682(03)00013-8
9. Conrad, L., & Uslu, P. G. (2011). Investigation of the impact of 'payment by results' on performance measurement and management in NHS trusts. *Management Accounting Research, 22(1),* 46-55. https://doi.org/10.1016/j.mar.2010.10.007
10. Core, J. E., Holthausen, R. W., & Larcker, D. F. (1999). Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics, 51(3),* 371-406. https://doi.org/10.1016/S0304-405X(98)00058-0
11. de Bruij, H. (2002). Performance measurement in the public sector: Strategies to cope with the risks of performance measurement. *International Journal of Public Management Sector, 15(7),* 578-594. https://doi.org/10.1108/09513550210448607
12. Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin, 125,* 627-668. https://doi.org/10.1037/0033-2909.125.6.627
13. Dixit, A. (2002). Incentives and organizations in the public sector: An interpretative review. *The Journal of Human Resources. 37(4),* 696-727. https://doi.org/10.2307/3069614
14. Frey, B. S. (2013). Organizational control systems and pay-for-performance in the public service. *Organization Studies, 34(7),* 949-972. https://doi.org/10.1177/0170840613483655
15. Glynn, J. J., & Murphy, M. P. (1996). Public management: Failing accountabilities and failing performance review. *International Journal of Public Sector Management, 9(5),* 125-137. https://doi.org/10.1108/09513559610146492
16. Gomes, P., Mendes, S. M., & Carvalho, J. (2017). Impact of PMS on organizational performance and moderating effects of context. *International Journal of Productivity and Performance Management, 66 (4),* 517-538. https://doi.org/10.1108/IJPPM-03-2016-0057
17. Guthrie, J., & English, L. (1997). Performance information and programme evaluation in the Australian public sector. *International Journal of Public Sector Management, 10(3),* 154-164. https://doi.org/10.1108/09513559710166039
18. Guthrie, J., Olson, O., & Humphrey, C. (1999). Debating developments in new public financial management: The limits of global theorising and some new ways forward. *Financial Accountability & Management, 15(3-4),* 209-228. https://doi.org/10.1111/1468-0408.00082
19. Hood, C. (1991). A public management for all seasons? *Public Administration, 69(1),* 3-19. https://doi.org/10.1111/j.1467-9299.1991.tb00779.x
20. Hughes, O. E. (1998). *Public Management and Administration* (II ed.). Hampshire: Palgrave

21. Hvidman, U., & Andersen, S. C. (2014). Impact of performance management in public and private organizations. *Journal of Public Administration Research & Theory, 24(1),* 35-58. https://doi.org/10.1093/jopart/mut019

22. Johansson, T., & Siverbo, S. (2009). Explaining the utilization of relative performance evaluation in local government: A multi-theoretical study using data from Sweden. *Financial Accountability & Management, 25(2),* 197-224. https://doi.org/10.1111/j.1468-0408.2009.00474.x

23. Jung, C. S. (2011). Organizational goal ambiguity and performance: Conceptualization, measurement, and relationships. *International Public Management Journal, 14(2),* 193-217. https://doi.org/10.1080/10967494.2011.589760

24. Ketelaar, A., Manning, N., & Turkisch, E. (2007). Performance-based arrangements for senior civil servants OECD and other country experiences. *OECD Working Papers on Public Governance,* 2007(5). OECD Publishing.

25. Kloot, L. (1999). Performance measurement and accountability in Victorian local government. *International Journal of Public Sector Management, 12(7),* 565-584. https://doi.org/10.1108/09513559910308039

26. Kloot, L., & Martin, J. (2000). Strategic performance management: A balanced approach to performance management issues in local government. *Management Accounting Research, 11(2),* 231-251. https://doi.org/10.1006/mare.2000.0130

27. Kunz, A. H., & Pfaff, D. (2002). Agency theory, performance evaluation, and the hypothetical construct of intrinsic motivation. *Accounting, Organizations and Society, 27(3),* 275-295. https://doi.org/10.1016/S0361-3682(01)00031-9

28. Langbein, L. (2010). Economics, public service motivation, and pay for performance: Complements or substitutes? *International Public Management Journal, 13(1),* 9-23. https://doi.org/10.1080/10967490903547134

29. Liguori, M. (2012). Radical change, accounting and public sector reforms: A comparison of Italian and Canadian municipalities. *Financial Accountability & Management, 28(4),* 437-463. https://doi.org/10.1111/j.1468-0408.2012.00555.x

30. Liguori, M., & Steccolini, I. (2011). Accounting change: Explaining the outcomes, interpreting the process. *Accounting Auditing Accountability Journal, 25(1),* 27-70. https://doi.org/10.1108/09513571211191743

31. Lindenberg, S. (2001). Intrinsic motivation in a new light. *Kyklos, 54,* 317-342. https://doi.org/10.1111/j.0023-5962.2001.00156.x

32. Mayston, D. (1993). Principals, agents and economics of accountability in the new public sector. *Accounting Auditing Accountability Journal, 6(3),* 68-96. https://doi.org/10.1108/09513579310042579

33. McAdam, R., Hazlett, S., & Casey, C. (2005). Performance management in the UK public sector: Addressing multiple stakeholder complexity. *International Journal of Public Sector Management, 18(3),* 256-273. https://doi.org/10.1108/09513550510591542

34. Mehran, H. (1995). Executive compensation structure, ownership, and firm performance. *Journal of Financial Economics, 38(2),* 163-184. https://doi.org/10.1016/0304-405X(94)00809-F

35. Moynihan, D. P. (2010). A workforce of cynics? The effects of contemporary reforms on public service motivation. *International Public Management Journal, 13(1),* 24-34. https://doi.org/10.1080/10967490903547167

36. Moynihan, D. P. (2007). The normative model in decline? Public service motivation in the age of governance. *La Follette School Working Paper 2007-021.*

37. Morten, B. N. (2011). Antecedents of organizational innovation: The diffusion of new public management. *Public Administration, 89(2),* 285–306. https://doi.org/10.1111/j.1467-9299.2010.01855.x

38. Mulvaney, M. A., McKinney, W. R., & Grodsky, R. (2012). The development of a pay-for-performance appraisal system for municipal agencies: A case study. *Public Personel Management, 41(3),* 505-533. https://doi.org/10.1177/009102601204100307

39. Mussari, R., & Caperchione, E. (2000). *Comparative issues in local government accounting.* Boston: Kluwer.

40. Nasi, G., & Steccolini, I. (2008). Implementation of accounting reforms. *Public Management Review, 10(2),* 175-196. https://doi.org/10.1080/14719030801928573

41. Newberry, S., & Pallot, J. (2004). Freedom or coercion? NPM incentives in New Zealand central government departments. *Management Accounting Research, 15(3),* 247-266. https://doi.org/10.1016/j.mar.2004.03.004

42. Padovani, E., & Young, D. W. (2012). *Managing local governments. Designing management control systems that deliver value.* London: Routledge.

43. Panozzo, F. (2000). Management by decree. Paradoxes in the reform of the Italian public sector. *Scandinavian Journal Management, 16,* 357-373. https://doi.org/10.1016/S0956-5221(00)00012-9

44. Perry, J. L., Engbers, T. A., & Jun, S. Y. (2009). Back to the future? Performance-related pay, empirical research, and the perils of persistence. *Public Administration Review, 69(1),* 39-51. https://doi.org/10.1111/j.1540-6210.2008.01939_2.x

45. Poister, T. H., & Streib, G. (1999). Performance measurement in municipal government: Assessing the state of the practice. *Public Administration Review, 59(4),* 325-335. https://doi.org/10.2307/3110115

46. Pollanen, R. M. (2005). Performance measurement in municipalities: Empirical evidence in Canadian context. *International Journal of Public Sector Management, 18(1),* 4-24. https://doi.org/10.1108/09513550510576125

47. Pollitt, C., & Bouckaert, G. (2000). *Public management reform: A comparative analysis.* Oxford: Oxford University Press.

48. Radnor, Z., & McGuire, M. (2004). Performance management in the public sector: Fact or fiction? *International Journal of Productivity and Performance Management, 53(3),* 245-260. https://doi.org/10.1108/17410400410523783

49. Siddiquee, N. A. (2010). Managing for results: Lessons from public management reform in Malaysia. *International Journal of Public Sector Management, 23(1),* 38 – 53. https://doi.org/10.1108/09513551011012312

50. Speklé, R. F., & Verbeeten, F. H. M. (2014). The use of performance measurement systems in the public sector: Effects on performance. *Management Accounting Research, 25(2),* 131-146. https://doi.org/10.1016/j.mar.2013.07.004

51. Townley, B., Cooper, D., & Oakes, L. (2003). Performance measures and the rationalization of organizations. *Organization Studies, 24(7),* 1045-1071. https://doi.org/10.1177/01708406030247003

53. Verbeeten, F. H. M. (2008). Performance management practices in public sector organizations: Impact on performance. *Accounting Auditing Accountability Journal, 21(3),* 427-454. https://doi.org/10.1108/09513570810863996

54. Weibel, A., Rost, K., & Osterloh, M. (2010). Pay for performance in the public sector – Benefits and (hidden) costs. *Journal of Public Administration Research & Theory, 20(2),* 387-412. https://doi.org/10.1093/jopart/mup009

55. Wooldridge, J. M. (2002). *Econometric analysis of cross section and panel data.* Cambridge, Mass: MIT Press.