

Internal and external use of performance information in public organizations: results from an international survey

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This paper analyses how public managers use performance information. A sample of over 3,100 high-level public sector executives from six European countries, provided evidence of significant country variations. Considerable variations were also found in patterns of use in different policy fields; and performance indicators were not used as often in central government as in local and regional government. Implementation of performance management instruments in an organization had a strong effect on the actual use of performance information.

Keywords: Accountability; comparative public administration; executives; performance indicators; performance management.

Who is using performance information?

Although performance management is not new and has a long history (for example Hood, 2007; Van Dooren, 2008), its use grew under the umbrella of the new public management (NPM) in the early 1980s. Like NPM, the term 'performance management' has numerous meanings, comes in different forms, and covers a range of instruments (Van de Walle and Van Dooren, 2010). At its core is the idea of using performance information for decision-making (Bouckaert and Van Dooren, 2003, p. 132).

The use of performance information is receiving increasing academic attention (for example see Heinrich, 1999; de Lancer Julnes and Holzer, 2001; Ho, 2006; Askim *et al.*, 2008; Moynihan and Pandey, 2010; Taylor, 2011; Kroll, 2012). Many of these studies, however, consider performance information use as a unidimensional construct (for example Moynihan and Pandey, 2010), whereas in practice public managers can use performance metrics for different purposes and in different forms (for example Hood, 2007). Externally, performance information can be used to showcase performance, to give account, or to compare and benchmark. Internally, it can be used for monitoring or to improve operations. In this paper, we use data from an international survey of 3,134 top executives working in the public sector to analyse determinants of performance information use. We distinguish

between internal and external use, and search for explanations for the variations in use across the six countries involved.

Research on the use of performance information

Along with increasing implementation, institutionalization and sophistication of performance management, the debates around performance management have changed considerably. Early, polarized discussions have increasingly been superseded by more informed questioning and research focusing on implementation challenges in practice (for example Bouckaert and Halligan, 2008; Moynihan, 2008; Van Dooren and Van de Walle 2008; Moynihan and Pandey, 2010; Walker *et al.*, 2010; Kroll, 2012).

For practitioners, performance management mostly comes in the form of specific tools and instruments used to incorporate performance information or indicators into systems (for example Bouckaert and Halligan, 2008): target systems, controlling, balanced scorecards, reporting systems, performance contracts or performance budgeting. At the individual level, this is visible as target agreements, performance appraisals, and performance-related pay. Implementation of performance tools and systems has been shown to differ substantially from formal policy, and the actual use of performance information

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can often lag behind its collection (Van Dooren and Van de Walle, 2008; Moynihan and Pandey, 2010).

Researching performance information is difficult because the concept may refer to very different realities across organizations. Using very narrow conceptions of performance information, however, forces researchers to analyse organizations that are very similar, or that operate in a single jurisdiction, for example a school performance indicator in a country; or a key performance indicator (KPI) used in a specific policy field.

A link between performance measurement and the use of this information in decision-making is often assumed (Moynihan and Ingraham, 2004; Pollitt, 2006). Yet, Lægneid *et al.* (2006) have described 'use' as the Achilles' heel of performance management systems and many researchers are indeed very sceptical about the usefulness of performance indicators (for example Askim, 2007). Until recently the actual use of performance information was not very high on the public management research agenda (Pollitt, 2006; Van de Walle and Van Dooren, 2008, p. 2). Since then, quite a lot has changed. Moynihan and Pandey (2010, p. 849) noted that 'understanding public employee use of performance information is perhaps the most pressing challenge for scholarship on performance management'. The use of performance information is a topic that is now receiving increasing academic attention with research focusing on who is using performance information, how it is being used, and what factors are influencing that use.

Internal and external use of performance information

In 2003, Behn listed eight different managerial uses of performance information: evaluate, control, budget, motivate, promote, celebrate, learn, and improve. Some of these uses have a more external and some a purely internal function and these uses come with different data requirements. Performance information can be used to learn about what is working and what is not, to improve processes and activities, to evaluate how an organization is performing, or to celebrate successes. When performance information is used externally, then it is used to promote the work of the organization and to show outsiders what a good job the organization is doing. In a public sector that has become increasingly dominated by rankings, and various versions of 'naming and shaming', performance indicators have become important tools for politicians and managers. Rather than having to explain an organization's

performance in detail, it is now often sufficient to report KPIs (Van de Walle and Roberts, 2008). Reputation and legitimacy are also, at least partly, built on an organization's position in league tables. Performance indicators thus function as communication tools and not just as measurement tools. When one organization starts using performance metrics externally, similar organizations will have to do so as well in order to maintain or create legitimacy in a competitive environment (DiMaggio and Powell, 1983). This is part of a wider trend in which (public) organizations are required to give account for their dealings, often through performance reporting (Van de Walle and Cornelissen, 2013). This is why performance management systems are sometimes labeled as 'accountability systems' (Radin, 2006).

Internal and external uses of performance information are related. One of the assumptions behind the increased use of performance indicators, and especially of rankings, is that external performance reporting is believed to create pressure to reform organizations internally. This is thought to happen in two different ways. Bad performance would be noticed by principals (for example politicians) or clients who would put pressure on organizations to reform and force organizations to improve services (Moynihan, 2008). Strong internal use of performance indicators is supposed to lead to better performing organizations, which in turn makes external reporting about performance easier. In our research we looked whether different groups of public executives put a different emphasis on both uses of performance metrics, and how this can be explained. We assume performance information use is to some extent determined by individual (socio-demographic) and organizational factors.

What determines performance information use?

Who is actually using performance information, and who isn't? Public managers' socio-demographic characteristics is a first set of determinants to consider, and includes factors such as age, education, previous experiences, leadership, attitudes, skills, and resources. Such determinants have been used in studies looking at how managers use performance information (see for example Moynihan and Ingraham, 2004; Moynihan and Pandey, 2010; Taylor, 2011; or Kroll, 2012 for a systematic overview) and have shown the relevance of such factors as individual beliefs, attitudes and social norms. Much of this works builds on earlier research traditions, looking at the use of information

more generally by public officials. This includes research on the use of evidence, scientific research, and evaluations by public organizations, and on the role of information in decision-making more generally (for example Feldman and March, 1981).

A related body of research has looked at how politicians use performance information (ter Bogt, 2004; Brun and Siegel, 2006; Pollitt, 2006; Askim, 2007). A common finding is that politicians often do not value performance information: for example the best educated and most experienced local politicians in Norway were found to make the least use of performance information (Askim, 2009). Some of these findings are likely to be transferable to the performance information use behaviours of public managers.

Performance information, and its use, is more embedded in some organizations and sectors than in others (Askim, 2007). Van Dooren (2004) found similar differences across policy domains in the use of indicators in a study of parliamentary questions in the Belgian parliament. In a comparison of how evidence guides policy in a number of sectors in the UK, Davies *et al.* (2000, p. 3) observed that 'the accepted rules of evidence differ greatly between research cultures' and the nature of the relationship between evidence and policy varies with the policy area (Nutley and Webb, 2000, p. 14). International comparative research (Pollitt *et al.*, 2010) has also confirmed considerable country differences in the use of performance information. Such differences can be attributed to a number of factors, even though large-scale empirical testing remains to be done. These include organizational determinants such as organizational culture (Moynihan, 2005a; Moynihan and Pandey, 2010), information availability (de Lancer Julnes and Holzer, 2001; Moynihan and Pandey, 2004, 2010), or the existence of information use routines and the institutionalization of information (Van de Walle and Van Dooren, 2010). Van Dooren (2006) distinguished between demand and supply of performance information, and spoke about 'demand frustration' or 'supply frustration' when demand and supply of performance information are not in equilibrium. In a similar vein, Taylor (2011) identified the state of the performance measurement system in the organization as a supply side factor determining the utilization of performance information. This has also been confirmed in other research (for example Moynihan and Pandey, 2010). Askim suggests using analogies to herd

behaviour in studying the use of performance information, which means that support from organizational leaders is important (Askim, 2009). Moynihan and Pandey (2004, 2010) similarly confirmed the relevance of leadership. Further research evidence stressed the need for having routines in an organization for examining and interpreting performance information (Moynihan, 2005a, p. 205).

Data and method

A striking feature of research on government performance is a strong reliance on evidence from Anglo-Saxon countries and Scandinavia (see Boyne, 2010). To balance this, our data is from six European countries. Our survey took place in mid 2012 as part of the EU Seventh Framework programme research project Coordinating for Cohesion in the Public Sector of the Future (COCOPS, see www.cocops.eu). Fieldwork is ongoing in a number of additional countries. Based on a questionnaire jointly developed by an international research team and translated into different languages, the survey was distributed to public sector executives in European countries based on a common sampling strategy for all countries. The survey targeted all high-level administrative executives (mostly in the two top hierarchical levels) at central government ministry/department and agency level, irrespective of the specific policy field (for Germany, ministries at state level were included because they have responsibilities similar to central government ministries in other countries). There was an additional sample of executives from the health and employment sectors. This article is based on data from the first six countries where the survey was finished in summer 2012 (Estonia, France, Germany, Hungary, Italy and Norway). These six countries cover the main administrative cultures in Europe. For these countries the survey was sent (both via post and email) to about 12,000 executives. We received answers from 3,134 people. The overall response rate of 26.2% was high for this type of survey, particularly given the high level positions of the respondents.

The distribution of respondents over the six countries studied was: Germany ($N = 566$, 18.1%), France ($N = 1,193$, 38.1%), Italy ($N = 316$, 9.7%), Estonia ($N = 320$, 10.2%), Norway ($N = 388$, 12.4%) and Hungary ($N = 351$, 11.2%). In terms of employment, 33.4% were from a ministry; 30.4% from an agency or subordinate government body at central government level; 15.1% were in a ministry at state or regional government level; 10.6% at an

agency or subordinate government body at state government level; and 10.6% were from a subnational public sector body. Roughly two-thirds of the respondents were male, and nearly 90% had a postgraduate degree.

Dependent variables: internal and external use of performance indicators

We asked eight questions. Our measurement follows earlier research which also concentrated on self-reported performance information use (see, for example, Moynihan and Pandey, 2010). Table 1 reveals that our managers mainly used performance indicators to know whether they had reached their targets and to identify problems needing attention. Managers were less likely to use performance indicators to engage with external stakeholders, or to communicate what the organization does to citizens and service users. Overall, roughly 30% of respondents were using performance information regularly (6 and 7 on the Likert scale), whereas about 15% either did not use performance information at all or only to a very limited degree (scale points 1 and 2).

The eight questions examined internal use and external use. The first five questions measured internal use (see table 2) and the last three external use. The values of Cronbach's alpha for the two sets of items—0.92 and 0.87

respectively—show that the internal consistency of the constructs was good to excellent (Kline, 1999). The correlation between the rotated factors was 0.741, indicating a strong positive relationship between the two constructs.

Findings

Internal and external use of performance information was found to differ considerably across countries. Self-reported performance information use was significantly and consistently lower in Germany and in France, while it was higher in Italy and Estonia. This was especially marked for external use. This is in accordance with Bouckaert and Halligan (2008) who described Germany and France as countries that practice 'performance administration'. This is a model of performance indicator use characterized by administrative data registration, some incorporation of indicators into wider systems, but limited use in practice. Performance information is mainly a technical or administrative matter without a strong link to management or policy.

To explain the differences in performance information use, we constructed two sets of influence factors. The first set consisted of organizational factors and described the organization in which a respondent worked (type of organization, policy sector, and

Table 1. Frequency counts of performance indicator items.

Question: In my work I use performance indicators to...	1 'Not at all'	2	3	4	5	6	7 'To a large extent'	No. of observations	Mean
Assess whether I reach my targets	251 8.7%	254 8.8%	273 9.5%	422 14.7%	621 21.6%	596 20.7%	457 15.9%	2,874	4.57
Monitor the performance of my subordinates	250 8.7%	258 9.0%	343 12.0%	520 18.1%	630 22.0%	560 19.5%	306 10.7%	2,867	4.37
Identify problems that need attention	220 7.7%	217 7.6%	286 10.0%	406 14.2%	634 22.2%	665 23.3%	430 15.1%	2,858	4.66
Foster learning and improvement	254 8.9%	248 8.7%	347 12.1%	523 18.3%	652 22.8%	530 18.5%	304 10.6%	2,858	4.36
Satisfy requirements of my superiors	253 8.9%	273 9.6%	320 11.3%	501 17.6%	606 21.3%	559 19.7%	330 11.6%	2,842	4.38
Communicate what my organization does for citizens and service users	496 17.4%	439 15.4%	414 14.5%	458 16.1%	472 16.5%	369 12.9%	205 7.2%	2,853	3.67
Engage with external stakeholders (for example interest groups)	618 21.8%	469 16.6%	435 15.4%	454 16.0%	415 14.6%	298 10.5%	145 5.1%	2,834	3.37
Manage my organization's image	394 13.8%	336 11.8%	350 12.3%	473 16.6%	603 21.2%	472 16.6%	218 7.7%	2,846	4.00

organizational size). We also included an index of performance management implementation as perceived by the respondents. This index measures the extent to which the organization has implemented a number of performance management instruments (such as the use of cost accounting systems, internal contracts, management by objectives, benchmarking or performance related pay). The second set consists of respondents' socio-demographic characteristics, including gender, age, hierarchical level, length of tenure, prior private sector experience, level of education and degree type.

In order to assess the relative impact of organizational and individual factors on internal and external use of performance indicators, we produced three multivariate regression models for both sets of estimated factor scores (internal and external use). Model 1 included as independent variables a set of organizational factors, model 2 individual factors and model 3 both organizational and individual factors. We also controlled for country-level differences by including country dummies.

Because our two factors were allowed to correlate—we performed an oblique promax rotation on our factor loading matrix (see table 2)—it seems plausible that the residuals from the internal use and external use regressions would also correlate. To allow for this correlation between the two equations, we estimated them simultaneously using the seemingly unrelated regression (SUR) method.

Table 3 presents the SUR estimates for the regression models. For the sake of readability, estimates of those sets of control variables that were jointly insignificant at 5% (Wald coefficient restriction test) in Model 3 were excluded from table 3. These variables are age, organization size, degree type and public sector tenure. We also tested the influence of the variable policy field, following the OECD COFOG classification of government functions. Statistically insignificant policy field effects—i.e. foreign affairs, infrastructure and transportation, defense, health, social protection and welfare, education, environmental protection and culture and religion—were omitted.

Looking at model 1's results in table 3, which includes only organizational factors, the type of organization is seen to have a significant impact on the use of performance information. Compared with executives in central government (reference category), executives working in agencies, regional ministries, or other sub-national bodies reported a

Table 2. Exploratory factor analysis, estimated loadings.

	Rotated (Promax)		
	Factor 1	Factor 2	Cronbach's alpha
<i>Internal use</i>			
Assess whether I reach my targets	0.865	0.014	0.915
Monitor performance of subordinates	0.871	0.020	
Identify problems that need attention	0.775	0.111	
Foster learning and improvement	0.692	0.203	
Satisfy requirements of my superiors	0.630	0.156	
<i>External use</i>			
Communicate what organization does for citizens	0.042	0.786	0.866
Engage with external stakeholders	0.023	0.769	
Manage my organization's image	0.147	0.716	

significantly higher use of performance information, both internally and externally. So the actual use of performance information was generally lower in central government ministries. Policy fields also mattered. Internal performance information use was higher among respondents working in employment services, economic affairs and finance. External performance information use, in contrast, was higher among those working in justice, public order and safety, and employment services. The degree of performance management instruments implemented in the organization had—not surprisingly—the strongest effect on the use of performance information. In contrast, our analysis showed that organization size did not matter, and the variable therefore was not displayed in table 3.

In terms of individuals, respondents at lower hierarchical levels made less use of performance indicators than those at the highest hierarchical level. This was especially the case for external use. As already shown for political users of performance information (Askim, 2007), having a postgraduate or doctoral degree was associated with a lower use of performance indicators. One explanation for this could be that these groups have a larger set of information sources (and not just performance information) at their disposal when making decisions, yet the exact reason needs further examination. The main finding at the individual level was that public managers with prior—and especially with long (over 10 years)—experience in the private sector were more active users of performance information. Overall, model 2, analysing individual factors, has a relatively low explanatory value with an R^2 of 0.08 for internal use, and R^2 0.12 for external use.

Our most interesting finding, however, emerged from model 3. In model 3, which

Table 3. Seemingly unrelated regressions (SUR) on estimated internal and external use factor scores.

Covariates	Model 1		Model 2		Model 3	
	Internal use	External use	Internal use	External use	Internal use	External use
Agency at central government level (reference category ministry central government level)	0.17 [0.048]***	0.118 [0.048]**			0.134 [0.060]**	0.094 [0.059]
Ministry at state or regional level	0.207 [0.055]***	0.222 [0.055]***			0.22 [0.072]***	0.164 [0.071]**
Agency at state or regional level	0.042 [0.074]	0.192 [0.073]***			0.128 [0.095]	0.15 [0.094]
Ministry or other public sector body at subnational level	0.504 [0.067]***	0.316 [0.066]***			0.463 [0.085]***	0.302 [0.084]***
Finance (reference category general government)	0.156 [0.056]***	0.051 [0.056]			0.181 [0.069]***	0.09 [0.068]
Economic affairs	0.097 [0.051]*	-0.083 [0.051]			0.09 [0.060]	-0.159 [0.059]***
Justice, public order and safety	0.083 [0.057]	0.15 [0.056]***			0.158 [0.066]**	0.201 [0.065]***
Employment services	0.266 [0.049]***	0.215 [0.048]***			0.294 [0.060]***	0.228 [0.059]***
Index of performance management implementation	0.376 [0.014]***	0.335 [0.014]***			0.376 [0.017]***	0.32 [0.017]***
Second hierarchical level in organization (reference category first hierarchical level)			0.034 [0.054]	-0.134 [0.050]***	0.093 [0.054]*	-0.05 [0.053]
Third hierarchical level in organization			-0.213 [0.065]***	-0.211 [0.061]***	-0.038 [0.064]	-0.072 [0.063]
Female			-0.017 [0.047]	0.027 [0.044]	0.034 [0.045]	0.065 [0.044]
Postgraduate degree (master's degree) (reference category first degree)			-0.205 [0.069]***	-0.207 [0.064]***	-0.023 [0.067]	-0.061 [0.066]
PhD/doctoral degree			-0.284 [0.083]***	-0.241 [0.078]***	-0.054 [0.080]	-0.055 [0.079]
Private sector: 1–5 years (reference category private sector < 1 year)			0.069 [0.049]	0.072 [0.046]	0.064 [0.045]	0.066 [0.044]
Private sector: 5–10 years			0.102 [0.085]	0.185 [0.080]**	-0.004 [0.080]	0.061 [0.079]
Private sector: 10–20 years			0.288 [0.099]***	0.349 [0.093]***	0.016 [0.093]	0.119 [0.092]
Private sector: over 20 years			0.366 [0.167]**	0.465 [0.157]***	0.01 [0.149]	0.219 [0.148]
R ² internal equation/external equation	0.39	0.34	0.08	0.12	0.41	0.36
Observations	2,099		1,978		1,461	

Suppressed estimates: Country dummies, age, degree type, organization size, public sector tenure and policy fields: foreign affairs, infrastructure and transportation, defence, health, social protection and welfare, education, environmental protection, and culture and religion.

* p<0.1; ** p<0.05; *** p<0.01, standard errors in brackets.

combines individual and organizational determinants, almost all individual level factors became insignificant. In other words, the extent of internal and external performance information use depended almost exclusively on organizational factors, notably the type of organization, policy field and the degree of implementation of performance management instruments. Differences in determinants of internal and external use were also relatively marginal for this model. With regard to policy field, employment services and justice, public order and safety had a significantly higher use of performance information. In addition, for public sector organizations in the economic affairs domain we found that performance indicators were

less likely to be used externally, whereas in the finance domain executives were more actively using performance indicators for internal purposes. The most relevant variable influencing the public managers' use of performance information was the degree of implementation of performance management instruments (i.e. information availability) in their organization. This is in line with other research confirming the importance of information availability (de Lancer Julnes and Holzer 2001; Moynihan and Pandey, 2004; 2010). However, our analysis demonstrates that although the availability of information is an important factor, it does not entirely explain the use of performance information.

Conclusion

Studying the use of performance information is key factor to understanding and improving performance management in administrative practice. Our study has contributed new empirical data and provides evidence for significant country variations in the use of performance information. We have confirmed a more hesitant use in continental European administrations.

We looked for determinants of internal and external use of performance information at the individual (executive) and organizational level. Some people-related factors were initially found, as expected from the literature. When organizational factors were added, however, people-related factors disappeared. The absence of an effect of people-related factors is in line with earlier work (for example de Lancer Julnes and Holzer, 2001; Moynihan and Pandey, 2004; Kroll, 2012) indicating that managers' socio-demographic characteristics do not matter in performance information use. In contrast, we found clear evidence for the relevance of organizational factors such as policy field (for example a significantly higher use in employment services or justice, public order and safety) and type of public sector organization (central versus other levels of government; ministry versus agency). As with previous research in Anglo-Saxon countries, our study clearly confirms that the implementation of performance management instruments, such as strategic planning, management by objectives, performance contracts and performance-related pay, are major influencing factors on the use of performance information. Instruments that link performance information to management systems and processes are a factor triggering public managers' use of performance information. A limitation of the article is that, even though a distinction was made between internal and external performance information, the concept of use itself was not further specified, leaving the respondents to interpret this concept as they saw fit. Some other variables were also perception-based.

Our results show that in order to stimulate the use of performance information, effort should initially focus on organizational routines for information use and less on person-related factors such as education, training or experience.

Future research needs to concentrate more on country differences and on

organizational factors that determine performance information use.

Acknowledgement

The research leading to these results has received funding from the European Community's Seventh Framework Programme under grant agreement No. 266887 (Project COCOPS), Socio-Economic Sciences and Humanities.

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