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INTERNAL AND EXTERNAL USE OF PERFORMANCE INFORMATION IN PUBLIC ORGANISATIONS: RESULTS FROM AN INTERNATIONAL EXECUTIVE SURVEY[1]

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INTERNAL AND EXTERNAL USE OF PERFORMANCE INFORMATION IN PUBLIC ORGANISATIONS: RESULTS FROM AN INTERNATIONAL EXECUTIVE SURVEY

Abstract

109 words

This paper analyses determinants of public managers´ internal and external use of performance information. Using a sample of over 3100 top public sector executives in six European countries, we find evidence for significant country variations, with a more limited use of performance information in France and Germany. It was also found that the use of performance information is mainly determined by organizational factors rather than managers' individual socio-demographic characteristics. The analysis also found considerable differences in patterns of use between policy fields and a lower use of performance indicators in central government ministries. Finally, the implementation of performance management instruments in an organization has an overall strong effect on the actual use of performance information.

Keywords: (5) performance indicators, performance management, executives, accountability, comparative public administration

5112 words (body + references)

1. Introduction: Who is using performance information?

Performance indicators have permeated public sector organizations worldwide over the last decades. Although the issue of performance management is not new and has a long history (e.g., Hood, 2007; Van Dooren, 2008) the intensity and broadness of this trend attained a new quality under the umbrella of New Public Management (NPM) that became a global paradigm in the early 1980s. Similar to NPM itself, performance management is also used with 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 'acting upon performance information' (Bouckaert and Van Dooren, 2003, p. 132) and using such information for decision making in a systematic form.

The actual use of performance information is therefore receiving increasing academic attention (e.g., 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 uni-dimensional construct (e.g.,

Moynihan and Pandey, 2010) whereas in practice public managers can use performance metrics for different purposes and in different forms (e.g., Hood, 2008). Externally, performance information can be used to showcase performance, to give account, or to compare and benchmark. Internally, it can be used to monitor internal developments or to improve operations. In this paper we use data from a large international survey of 3,134 public sector top-executives in six countries to analyse determinants of performance information use. More specifically, we distinguish between two major types of use – internal and external – based on a factor analysis of 8 survey items, and search for explanations for the variation in use across top public sector executives in the six countries.

This article first summarizes the literature on performance information use, with a focus on differences between internal and external use and determinants of use and non-use. Subsequently, data, methods, and variables are introduced, after which the findings are presented, and followed by a short conclusion.

2. Public management research on the use of performance information

Along with increasing implementation, institutionalization and sophistication of performance management in practice, the debates around performance management have also changed considerably. Earlier quite polarized discussions have increasingly been superseded by more informed questioning and research focusing on implementation challenges in practice (e.g., Bouckaert and Hallligan, 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 the management and policy system (e.g., Bouckaert and Halligan, 2008) such as 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. In some countries, performance assessments and benchmarking are used to a greater extent than in others. Research has shown that actual implementation of such tools and systems tends to differ substantially from formal policy and that the actual use of performance information also often tends to lag behind the extent of performance information collected (Van Dooren and Van de Walle, 2008; Moynihan and Pandey, 2010). This makes researching performance information difficult, because the concept may refer to very different realities across organizations. Using very narrow conceptions of performance information, however, forces the researcher to stick to analyzing organizations that are very similar, or that

operate in a single jurisdiction (e.g. a school performance indicator in a country; a 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, Lægreid *et al.* (2006) have described 'use' as the Achilles' heel of performance management systems And researchers are indeed very sceptical about the usefulness of performance indicators (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'. They lament that governments have invested substantially in collecting data, yet we know relatively little about what drives (self-reported) performance information use. The actual 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 the use. In this section, we review some of more recent research evidence.

Internal and external use of performance information

Performance information can be used for various purposes. Back in 2003, Bob 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 isn't, to improve processes and activities, to evaluate how the organisation is performing or to celebrate successes. When performance information is used externally, then it is used to promote the work of the organisation and to show outsiders what a good job the organisation is doing. External use of performance information refers to the use of indicators to communicate with external parties and to build or maintain an organization's image and legitimacy. 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 politicking and for communicating. Rather than having to explain one's performance in detail, it now suffices to report one's key performance indicators (Van de Walle and Roberts, 2008). Reputation and legitimacy are also – at least partly – built on the position one's organisation takes in league tables. Performance indicators thus function as communication tools, and not just as measurement tools. When other organizations increasingly use performance metrics externally, an organization will be required 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). It should therefore not come as a surprise that performance management systems are sometimes labeled accountability systems (Radin, 2006).

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

What determines performance information use?

A first question to address is who is actually using performance information, and who isn't. The literature has identified a number of personal, organisational and external determinants of performance information use. 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 e.g., Moynihan and Ingraham, 2004; Moynihan and Pandey, 2010; Taylor, 2011; or Kroll, 2012 for a systematic overview) and shown the relevance of individual factors such 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 (e.g., 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 in this research is that politicians often do not value performance information. For local politicians research from Norway (Askim, 2007 and 2009; Askim *et al.*, 2008) showed that the highest educated and most experienced politicians 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 organisations 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 (e.g., health care, criminal justice, housing), 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 organisational 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 institutionalisation 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 an equilibrium. In a similar vein, Taylor (2011) identified the state of the performance measurement system in the organisation as a supply side factor determining the utilisation of performance information. This has also been confirmed in other research (e.g., Moynihan and Pandey 2010). Askim suggests using analogies to herd behaviour in studying the use of performance information, which give an important role to support from leading persons in the organization (Askim, 2009). Moynihan and Pandey (2004; 2010) have similarly confirmed the relevance of leadership. Further research evidence stressed the need for having routines in an organisation for examining and interpreting performance information (Moynihan, 2005a, p. 205).

3. Data and method

A striking feature of existing research on government performance is the strong reliance on evidence from Anglo-Saxon countries, Scandinavia and a few other countries such as the Netherlands and an absence of experiences and research evidence from most other countries (for an overview see e.g., Boyne, 2010). In contrast, this paper uses preliminary data from a large scale survey among senior public sector executives in six European countries, aiming to capture their perceptions, attitudes and experiences regarding NPM-style reforms. This survey

was organised 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), and fieldwork is ongoing in a number of additional countries, to become available later this year.. Based on a questionnaire jointly developed by an international research team and translated into different national languages, the survey was distributed to senior public sector executives in European countries based on a common sampling strategy for all countries. The survey targeted all high-level administrative executives (mostly the two top hierarchical levels) at central government ministry[2] and agency level (all policy fields) irrespective of the specific policy field and an additional sample of executives from the health and employment sector. 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 top executives. We received answers from 3,134 respondents and the overall response rate of 26.2% is rather satisfying for this type of survey design, and the high-level position of the respondents.

The distribution of respondents over the six countries studied is: *Germany* (N=566, 18.1%), *France* (N=1193, 38.1%), *Italy* (N=316, 9.7%), *Estonia* (N=320, 10.2%), *Norway* (N=388, 12.4%) and *Hungary* (N=351, 11.2%). 33.4% of the respondents are employed at a *Ministry at central government level*, 30.4% at an *Agency or subordinate government body at central government level*, 15.1% 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% at a *public sector body at other subnational level*. Roughly two thirds of the respondents are male, and almost nine in ten hold a postgraduate or higher degree.

Dependent variables: internal and external use of performance indicators

Internal and external use of performance indicators was operationalized using eight questions. Our measurement follows earlier research which also concentrated on self-reported performance information use (see e.g., Moynihan and Pandey, 2010). Table 1 reveals that managers mainly use performance indicators to assess whether they have reached their targets and to identify problems that need attention. On the other hand, managers are less likely to use performance indicators to engage with external stakeholders, or to communicate what the organisation does to citizens and service users. Overall, roughly 30% of the executives surveyed seem to use performance information to a larger degree (6 and 7 on the Likert scale)

[2] For Germany we also included the Ministries at state level as due to the federal system they have responsibilities similar to central government Ministries in other countries.

whereas about 15% do not use performance information at all or to a very limited degree (scalepoints 1 and 2).

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"	Obs.	Mean
Assess whether I reach my targets	251	254	273	422	621	596	457	2874	4.57
	8.7%	8.8%	9.5%	14.7%	21.6%	20.7%	15.9%		
Monitor the performance of my subordinates	250	258	343	520	630	560	306	2867	4.37
	8.7%	9.0%	12.0%	18.1%	22.0%	19.5%	10.7%		
Identify problems that need attention	220	217	286	406	634	665	430	2858	4.66
	7.7%	7.6%	10.0%	14.2%	22.2%	23.3%	15.1%		
Foster learning and improvement	254	248	347	523	652	530	304	2858	4.36
	8.9%	8.7%	12.1%	18.3%	22.8%	18.5%	10.6%		
Satisfy requirements of my superiors	253	273	320	501	606	559	330	2842	4.38
	8.9%	9.6%	11.3%	17.6%	21.3%	19.7%	11.6%		
Communicate what my organization does for citizens and service users	496	439	414	458	472	369	205	2853	3.67
	17.4%	15.4%	14.5%	16.1%	16.5%	12.9%	7.2%		
Engage with external stake-holders (e.g. interest groups)	618	469	435	454	415	298	145	2834	3.37
	21.8%	16.6%	15.4%	16.0%	14.6%	10.5%	5.1%		
Manage the image of my organization	394	336	350	473	603	472	218	2846	4.00
	13.8%	11.8%	12.3%	16.6%	21.2%	16.6%	7.7%		

These eight items form two clearly distinctive dimensions: internal use and external use. A factor analysis (see table 2) shows that the first 5 questions measure internal use, whereas the last 3 measure external use. The values of Cronbach's alpha for the two sets of items – 0.92 and 0.87 respectively – furthermore indicate that the internal consistency of the constructs can be deemed *good* to *excellent* (Kline, 1999). Finally, the correlation between the rotated factors is 0.741, indicating a strong positive relationship between the two constructs. In the remainder of the paper we work with these aggregated internal and external use scales.

table 2. Exploratory factor analysis, estimated loadings

		Rotated (Promax)		Cronbach's Alpha
		Factor 1	Factor 2	
Internal use	*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	
External use	*Communicate what org. does for citizens*	0.042	0.786	0.866
	Engage with external stakeholders	0.023	0.769	

Manage the image of my organisation	0.147	0.716	

4. Findings

We start our analysis by studying differences in performance information use across countries. Figures 1 and 2 clearly show that the extent of internal and external use of performance information differs considerably across countries. Self-reported performance information use is significantly and consistently lower in Germany and France, while it is higher in Italy and Estonia[3]. This is especially the case for external use. This is in accordance with Bouckaert and Halligan (2008) who have described Germany and France as countries that practice 'performance administration'. This is a model of performance indicator use characterised 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.

figure 1. Box-plots of estimated internal PI use factor scores over the set of studied countries

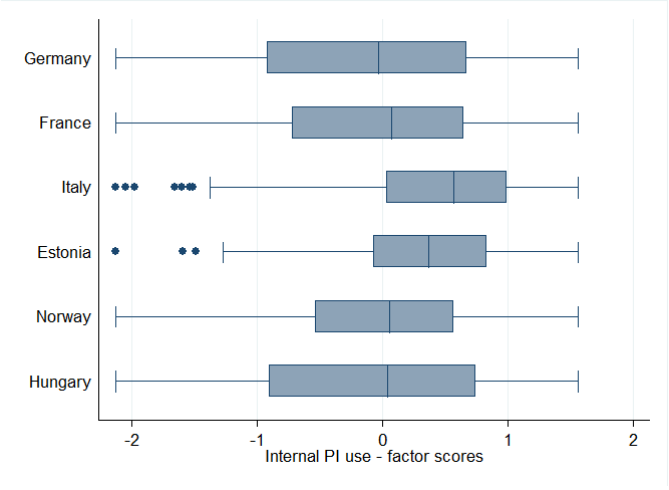
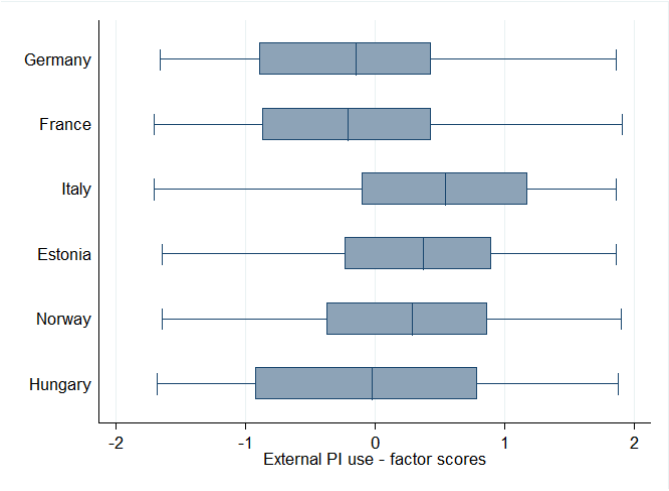


figure 2. Box-plots of estimated external PI use factor scores over the set of studied countries

[3] Pairwise t-test not reported, but available from the authors



We continue by explaining differences in performance information use, by looking at two sets of influence factors. The first set consists of organizational factors, and refers to characteristics of the organization in which the respondent works (type of organization, policy sector, and organization 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 individual socio-demographic characteristics of the respondent, and includes 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 estimate three multivariate regression models on both sets of estimated factor scores (internal and external use). Model 1 includes as independent variables a set of organizational factors, model 2 individual factors and model 3 both organizational and individual factors. We also control 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 are correlated as well. To allow for this correlation between the two equations, we estimate them simultaneously using the seemingly unrelated regression (SUR) method.[4]

[4] SUR method uses information from both equations to estimate the relevant estimator covariance matrix, leading to efficiency (or precision) gains. The estimated residual correlations between the two equation for models 1, 2 and 3 were 0.63, 0.73 and 0.63

Table 3 presents the SUR estimates for the three 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 – are also not shown in the table.

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

	Model 1		Model 2		Model 3	
Covariates	Internal use	External use	Internal use	External use	Internal use	External use
Agency at central government level	0.17	0.118			0.134	0.094
(ref. Ministry central government level)	[0.048]***	[0.048]**			[0.060]**	[0.059]
Ministry at state or regional level	0.207	0.222			0.22	0.164
	[0.055]***	[0.055]***			[0.072]***	[0.071]**
Agency at state or regional level	0.042	0.192			0.128	0.15
	[0.074]	[0.073]***			[0.095]	[0.094]
Ministry or other public sector body at subnational level	0.504	0.316			0.463	0.302
	[0.067]***	[0.066]***			[0.085]***	[0.084]***
Finance	0.156	0.051			0.181	0.09
(ref. General government)	[0.056]***	[0.056]			[0.069]***	[0.068]
Economic affairs	0.097	-0.083			0.09	-0.159
	[0.051]*	[0.051]			[0.060]	[0.059]***
Justice, public order & safety	0.083	0.15			0.158	0.201
	[0.057]	[0.056]***			[0.066]**	[0.065]***
Employment services	0.266	0.215			0.294	0.228
	[0.049]***	[0.048]***			[0.060]***	[0.059]***
Index of performance management implementation	0.376	0.335			0.376	0.32
	[0.014]***	[0.014]***			[0.017]***	[0.017]***
Second hierarchical level in organization			0.034	-0.134	0.093	-0.05
(ref. first hierarchical level)			[0.054]	[0.050]***	[0.054]*	[0.053]
Third hierarchical level in organization			-0.213	-0.211	-0.038	-0.072
			[0.065]***	[0.061]***	[0.064]	[0.063]

respectively, and the Breusch-Pagan test strongly rejects (p-value<0.0001) the null-hypothesis of equation independence in all three instances, thereby justifying our approach.

Female			-0.017	0.027	0.034	0.065
			[0.047]	[0.044]	[0.045]	[0.044]
Postgraduate degree (MA level)			-0.205	-0.207	-0.023	-0.061
(ref. BA degree)			[0.069]***	[0.064]***	[0.067]	[0.066]
PhD/doctoral degree			-0.284	-0.241	-0.054	-0.055
			[0.083]***	[0.078]***	[0.080]	[0.079]
Private sector: 1-5 years			0.069	0.072	0.064	0.066
(ref. private sector less than 1 year)			[0.049]	[0.046]	[0.045]	[0.044]
Private sector: 5-10 years			0.102	0.185	-0.004	0.061
			[0.085]	[0.080]**	[0.080]	[0.079]
Private sector: 10-20 years			0.288	0.349	0.016	0.119
			[0.099]***	[0.093]***	[0.093]	[0.092]
Private sector: More than 20 years			0.366	0.465	0.01	0.219
			[0.167]**	[0.157]***	[0.149]	[0.148]
R-squared Internal eq. / External eq.	0.39	0.34	0.08	0.12	0.41	0.36
Obs.	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, defense, health, Social protection and welfare, education, environmental protection and culture & religion

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

Findings are reported in table 3, and show some interesting findings. When we first look at model 1, which includes only organizational factors, we find that the type of organization has a significant impact on the use of performance information. Compared with executives in central government ministries (reference category), executives working in agencies, regional ministries, or other sub-national bodies report a significantly higher use of performance information, both internally and externally. This means that the actual use of performance information is generally lower in central government ministries. Policy fields also matter. Internal performance information use is higher among respondents working in employment services, economic affairs and finance. External performance information use in contrast is higher among those working in justice, public order & safety, and employment services. The degree of performance management instruments implemented in the organization has – not surprisingly – the strongest effect on the use of performance information. In contrast, our analysis showed that organization size does not matter, and the variable therefore was not displayed in table 3.

Findings at the individual level show that respondents at lower hierarchical levels make less use of performance indicators than those at the highest hierarchical level. This is especially the case for external use. As already shown for political users of performance information (Askim 2007), being higher educated – having a postgraduate or doctoral degree – is also 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 remains to be further examined, The main finding at the individual level is that public managers with prior – and especially rather long (more than 10 years) – experience in the private sector are more active users of performance information. Overall, model 2, analyzing individual factors, has a relatively low explanatory value with an R squared of 0.08 for internal use resp. 0.12 for external use.

The most interesting finding, however, emerges when looking at model three. In model three, which combines individual and organizational determinants, almost all individual level factors turn insignificant. In other words, the extent of internal and external performance information use depends almost exclusively on organizational factors, notably the type of organization, policy field and the degree of implementing performance management instruments. Differences in determinants of internal and external use are also relatively marginal for this model. With regard to policy field, employment services and justice, public order & safety show a significantly higher use of performance information. In addition for public sector organizations in the economic affairs domain we see a less likely external use of performance indicators whereas in the finance domain executives are more actively using performance indicators for internal purposes. The most relevant variable influencing the public managers´ use of performance information again is the degree of implementation of performance management instruments – and by that the information availability – in their organization. This is in line with other existing research confirming the high relevance of information availability (de Lancer Julnes and Holzer 2001; Moynihan and Pandey, 2004; 2010). However our analysis underlines that, albeit this is an important factor, it is not sufficient factor to explain the use of performance information.

5. Conclusion

This article argues for the need to study the use of performance information as a key factor if we want to better understand and improve performance management in administrative practice. Our study contributes new empirical data from a large scale executive survey and provides evidence for significant country variations in the use of performance information. The analyses confirm a more hesitant use in Continental European administrations.

The analysis looked for determinants of internal and external use of performance information at the individual (executives) and organizational level. Some people-related factors were initially found, as expected from the literature. When however organizational factors are added, people-relates factors disappeared. The absence of an effect of people-related factors is in line with earlier findings (e.g., 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 find clear evidence for the relevance of organizational factors such as policy field (e.g. a significantly higher use in employment services or justice, public order & safety) and type of public sector organization (central vs. other levels of government; ministry vs. agency). In accordance with previous research in Anglo-Saxon countries our study also clearly confirms the implementation of performance management instruments such as strategic planning, management by objectives, performance contracts and performance related pay as major influencing factor on the use of performance information. Such instruments to incorporate and link performance information to management systems and processes are a major 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 itself was not further specified, leaving the respondents to interpret this concept as they saw fit. Some other variables were also perception-based.

The implication of our findings is that future research will have to concentrate more on country differences and on factors at the organisational level that determine performance information use. In other words: how come that some types of organisations implement performance management systems and consequently use performance information, while others don't? For practitioners, this means that in order to stimulate the use of performance information, attention should first go to the organisation routines for information use and less to person-related factors such as education, training or experience.

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