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***It's quite intense isn't it?***

***The influence of environmental, organizational and individual factors on the adoption/use of performance management innovations in local governments***

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**Abstract**

This article presents the empirical results of a study dealing with the antecedents of the intensity of performance information use at the local government level in Austria. Primary data are drawn from an electronic survey that explored the perceptions of two informant groups (mayors, and chief officials) on environmental, organizational, individual and technical characteristics, and statistical background information. The perceived availability of financial and non-financial performance information and the different forms of information use are at the center of this study. We use combined multiple regression models, considering the above stated characteristics with data from the survey to test the developed hypotheses on different expected relationships, offering new, interesting, and sometimes unexpected insights into the relevance of the different adoption factors identified.

**Introduction**

Throughout the world, public sector management has undergone dramatic changes since the 1980ies. These developments have been identified as the post-bureaucratic paradigm of public management (O'Flynn 2007) and have brought different ways of financing and new management methods with them; governance structures, patterns of responsibility, modes of control and – as one of the main features of various reform strategies in different countries – fundamental changes in the design of the traditionally cash based budgeting and accounting systems (see also Hood 1991, 1995, Guthrie et al., 2005, Chan 2003). These changes, often called New Public Financial Management (NPFM) also, are seen as an essential element to improve the management and decision-making of government institutions and to increase their financial accountability and transparency (see for example Guthrie et al., 1999, Montesinos and Vela, 2000, Evans, 1995). According to Pollitt and Bouckaert (2004), the evolution from cash-based accounting and budgeting systems via 'double entry bookkeeping' and result-oriented budgeting to 'full-blown accrual accounting with extended cost calculation

supported by multidimensional performance measurement systems' is the result of a trajectory along which countries are ranked according to their stage of progress towards the final goal. Especially the establishment of performance measurement systems is based on the assumption that individuals can use the information to make better decisions (Taylor 2009, Cavallzui and Ittner 2004), leading to improved performance and a better fulfilment of the external accountability requirements and ultimately to improved outcomes for society (OECD 1997, Torres et. al. 2011). Performance orientation is not only seen as one of the most important elements within NPM-oriented modernization processes (Hood 1991, Osborne and Gaebler 1992, Ferlie 1996) but have already played a major role in reforming public sector and public service organizations since the beginning of the 19th century (van Dooren 2008). Nowadays, it is widely recognized that organizational performance comprises of many different dimensions (see for example Andrews 2006), ranging from e.g. efficiency, effectiveness, output quantity and quality, citizen and consumer satisfaction, responsiveness to service needs, value for money and equity or trust, which vary across policy fields, nations and also over time (Andrews et al. 2011). From an instrumental view, it can be used to improve the performance of organizations, to improve control and accountability mechanisms, give form to the budget process and to motivate staff (e.g. Behn 2003, van Dooren 2008).

As far as the technical aspects of various NFPM instruments are concerned, a wealth of instruments was made available and most research on public sector accounting and performance management focused on systems design, the development of sophisticated technical solutions and their classification and the description of the status quo of their diffusion within public sector organizations (see for example Chan et. al. 1996, Lüder 1999, Lueder and Jones 2003, Bouckaert and Halligan 2009). When talking about the performance of local government, and about how this performance can be influenced and managed, attempts have to be made to draw a connection between public policy and public management. A crucial and complex challenge lays in meeting the often conflicting needs and to clarify what categories of performance should be singled out for assessment. Hopwood's proposition that 'accounting is no technical and neutral process of recording and documenting a pre-existing reality as it also can be used for shaping this reality' (Hopwood 1984, p. 2) and that there are different factors which influence the demand side, ranging from institutional and organizational to cultural and individual factors, seems to be easily transferable to a broader public performance measurement context. In recent years, we can therefore observe a shift of focus to the question if and how 'new' available accounting and performance information is

used by different stakeholder groups in public sector organizations (van Dooren 2005, van Dooren and van de Walle 2008, Askim 2007). Different authors recognized ‘adoption in the sense of use’ as the most difficult, but crucial aspect of reforms, as individuals should undergo behavioral changes and widen as well as broaden the scope of information taken into account (OECD 2005, van Dooren 2009, Torres et. al. 2011). Many research scholars of this stream point at the gap between the production and the use of performance information (Pollitt 2006, ter Bogt 2004). A huge amount of research in this area is qualitative and deals with contingencies and antecedents whereby performance measurement and management is adopted, also concentrating on the question how these factors affect the demand for and use of information in decision-making processes (Brignall and Modell 2000, Askim 2007).

Therefore, the central aim of this paper is twofold. From a descriptive, but also from an explanatory point of view, we want to highlight the status quo of financial and performance information availability and its use at the local government level of two regions in Austria, as comprehensive descriptive overviews and empirical analyses of public financial and performance management reforms in particular are non-existent. Moreover, a conceptual model is developed to test our hypotheses regarding the influence of different factors on performance information use of two central decision-making groups within local government organizations: mayors and chief officials.

### **Local governments in Austria**

Today Austrian local governments – like many governments in the world - are facing a combination of long-term challenges (e.g. ageing populations), increasing (political and social) pressures and demands on services as well as changing expectations of citizens, persistent issues with no known pathway to a solution (e.g. integration), and financial crises leading to massive constraints on public spending, with all the factors providing ideal conditions to effectively ‘shock’ the public sector into radical reform through innovation (e. g. Bloch et. al. 2010; Albury 2009; Damanpour/Schneider 2008; Kearney et. al. 2000; Rivera et al. 2000; Walker 2008). Innovation is used more frequently in the vocabulary and discourses of public service improvement as a result of the “positive resonances” associated with this concept (Golden 1990; Osborne 1998; Newman et al 2001; Bhatta 2003; Mulgan and Albury 2003; Albury, 2005 Walker 2003, 2006; Kanarck 2004; Hartley 2005; Albury 2005), although from a Schumpeterian economic perspective innovation is not an elemental context for the

public sector (see Potts 2010 for a rich and detailed explanation) and the often bureaucratic nature of governments and cultural restrictions inhibits public innovations (Borins, 2006; Hartley 2005; Mulgan/Albury 2003; Moore 2009; Mulgan, 2007; Albury, 2005).

Given this proposition we want to highlight the main characteristics of the Austrian public system, as contextual factors are seen as crucial for 'understanding similarity and difference, continuity and change' in public management research (Pollitt and Bouckaert 2009, p. 193). Austria is based on a strong 'Rechtsstaat' tradition, administrative practice is characterized by rules and regulations and a strong hierarchical system. As a democratic and federal republic, Austria consists of nine autonomous federal states, the so-called 'Länder'. This federal principle, beside the principle of local self-administration of the Austrian 2,358 local authorities, accounts for the organizational complexity of the Austrian public administration, subdividing the legislation between the federal and state levels and execution between all three levels of government. Another rather virtual administration level can be found within the 99 administrative districts, not being independent territorial authorities, but organizationally integrated within the federal states administration as district authorities with certain tasks. From an internal administrative view, Austria therefore is characterized by a four-layer administrative structure, within the public management research however, the administration is described as three-fold. In contrast to Germany, Austria thus has no competing legislation elements.<sup>i</sup> In some cases, central government can use federal states institutions for indirect central government administration following strictly defined preconditions. The complexity of the Austrian system of government can therefore be characterized by different tasks, responsibilities and competitive political influences. Mutual legislative participation of federal and state governments also makes far reaching administrative changes in terms of a very complex and prolonged process. (Meyer and Hammerschmid 2005).

If we refer to reluctant categories of comparative research on local government, we observe that local governments in Austria enjoy a high degree of autonomy from a political and functional, but not from a financial point of view. The structure of revenues for the federal states and the local government strongly depends on grants and other revenues between the government levels, as the central government is responsible for the legislation regarding the tax and grant financing and negotiates with the other levels of government on transfer payments. Therefore Austrian local governments together with the Scandinavian countries,

Finland, Germany, Switzerland and the Netherlands are often classified in the so-called 'North Middle European Group', although their size - only 50 of 2,358 local governments have more than 10,000 inhabitants - is better comparable to countries within the 'South European Group'. The law offers opportunities for inter-communal co-operation, which is widely practiced. Research on Austria's local governments is dominated by legal issues, whereas a minor, but still significant role is played by political themes. The role of local governments as the main "purchasers" within the State and their role as employers are often underlined in economic analysis. Investment at this level is about half the total of public investment in Austria. Reflections on the management in local governments have begun to appear in the 1990ies, and the wish for their transformation in modern service units has become louder. A central feature of Austria's local governments is the multiplicity of their competencies and the complexity of their tasks. Similarly to what happens in Germany, Austria's local level has two main areas of responsibility: the management of their autonomous policy and the execution of tasks imposed upon them by higher levels of government. This administrative tradition is called "integrative model of communal administration", wherein the federal and provincial government not only prescribes tasks to the local level, but they also audit their execution from a legal, an economic and even a political point of view. Such tight rules and oversight are not present in the areas in which local governments are free to operate autonomously and provide a wide range of services such as water and sewerage, public libraries, care for the elderly or sporting and recreational facilities. In some areas, service provision has extended into what might be regarded as 'non-core' services such as business development. Through the provision of such services, local government has a real effect on the standard and quality of life of people living and/or working in its area.

With regard to public sector budgeting and accounting we can observe a plurality and complexity of models at the different levels of government not just from a regulative or formal point of view. The nine federal states are autonomous in regulating and designing their budgeting and accounting systems. However, a consensus that the central level has the power to issue a binding decree regarding the structure of the budget and the financial statement for harmonization purposes was reached in 1949. The current structure of the budgetary system of the federal states and local government is based on a broad consensus and is regulated in the 'Voranschlags- und Rechnungslegungsverordnung (VRV 1997) which was developed by integrating the actors from the different government levels and the General Audit Office. The

decree defines the compulsory structure, the information density of the budget estimates and financial statements and is (modified) cash based. For commercial-oriented organizations of the peripheral sector, local governments have to enclose a capital statement. Nevertheless, we can roughly conclude that at all levels budgeting is purely cash based, accounting is mainly (modified) cash-based and the reporting shows some accrual-based elements. The adoption of performance measurement instruments is based on a voluntary basis and often takes the form of inter-communal benchmarking, sometimes initiated from a higher authority level or as individual initiatives. The first attempts date back to 1990s, when child-care facilities of the five largest cities in Austria or the productivity of citizens' registration offices of cities between 30,000 and 100,000 inhabitants were compared (Pleschberger 2004). A study that dates back to 2003 and clearly has its shortcoming regarding the methodological quality, found that the instrument of inter-communal performance comparison was used to a very limited extent in 77% of all local governments with a population fewer than 10,000. This trend is reversed by the increasing size of local governments. As far as indicators are concerned, 34% of local governments were developing or already were using a product catalogue and 25% declared that they were working on performance indicators (Biwald 2003). All these projects are carried out individually and on a voluntarily basis, although in some 'Länder' local governments have the possibility to compare selected performance indicators, like cost per unit of service delivery, employee cost per inhabitant or cost per kindergarten place, with other local governments on an anonymous basis.

Given this complexity, the huge number of small local governments and the voluntary implementation of new public financial management instruments, we do not concentrate on the diffusion of a specific style or type of public sector accounting and reporting innovation, or the developments and changes in public budgeting, management or cost accounting and performance management. The voluntary implementation of these instruments makes it difficult or nearly impossible to identify or compare different adoption levels from a technical perspective (see also Torres et. al. 2011 with regard to the adoption situation in the largest local governments in Spain). In an Austrian context it seems to be more adequate to concentrate on the adoption of NFPM style instruments in the sense of performance information use. We focus on the availability of financial and performance information and its use by different stakeholder groups (see also Yang and Hsieh 2007), as that the diffusion of an innovation is not an end in itself but a means to an end, which therefore has to be judged by its ability to create what Moore (1995) describes as 'public value'.

## **Conceptual Model and hypotheses**

As already mentioned, an increase in studies dealing with the adoption and use of performance information in different contexts can be observed. These studies focus on various aspects, trying to open up the 'black box' of performance management adoption by considering country specific characteristics, social processes (see for example Bogt and Helden 2000, Brignall and Modell 2000, Modell 2007, Falkman and Tagesson 2008, Grossi and Reichard 2009, Ezzamel et. al. 2007, Lapsley and Wright 2004, Pollitt 2008, Newberry and Pallot 2005, Pollitt and Bouckaert 2009) and to a lesser extent different environmental, organizational and individual predictors for performance information use (De Lancer and Holzer 2001, Melkers and Willoughby 2005, Laegreit et. al. 2008, Moynihan and Pandey 2010).

Research on performance information use often includes theorizing on different antecedents or is qualitative and deals more implicitly with different aspects of performance information use (see for example Askim 2007, Askim 2009), offering interesting insights in the behavior of politicians as well as public managers regarding their decision making and information seeking behavior in different contexts and stages of decision making processes.

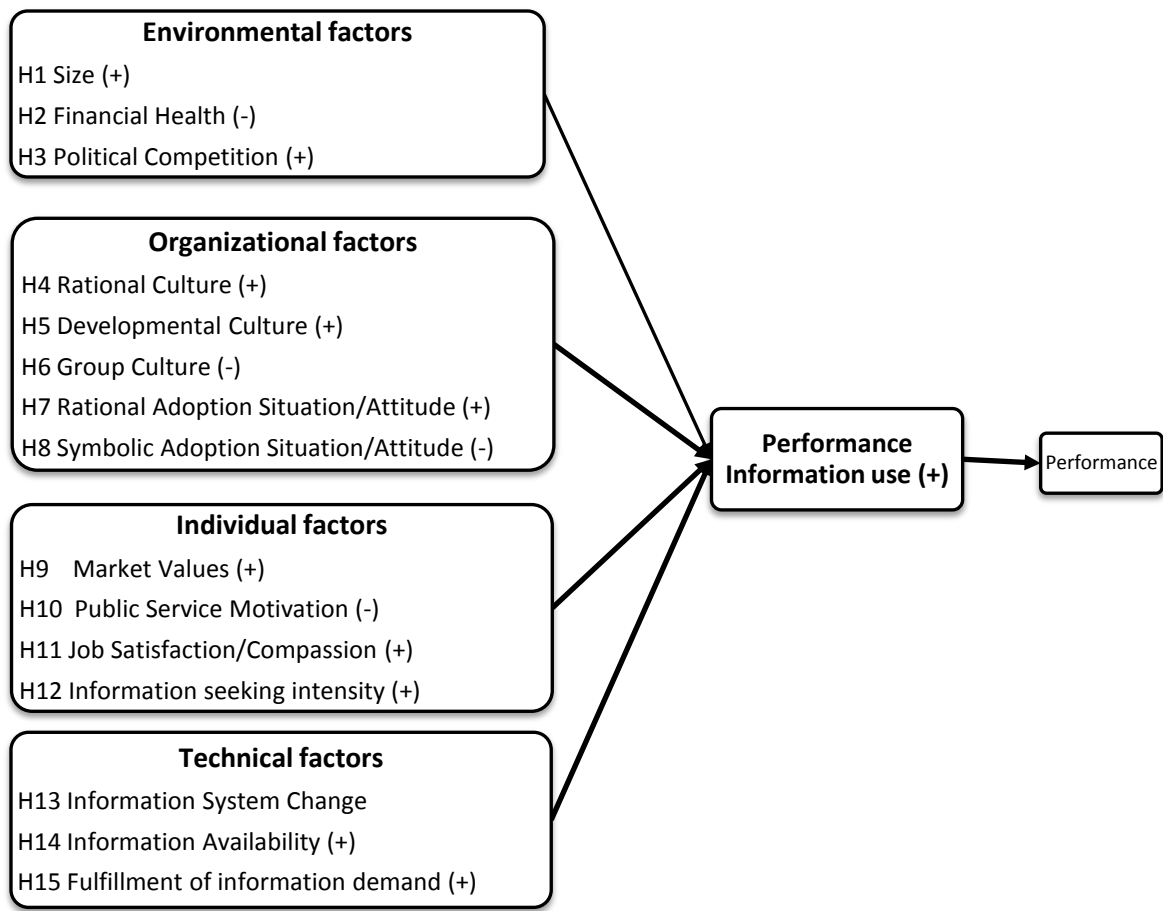
We take a broader and quantitative perspective and use a combined conceptual model for two central actor groups on the local government level, including environmental, organizational, individual and technical variables to test various hypotheses on the antecedents influencing the intensity of performance information use.

### **Performance information use – the adoption side of N(F)PM innovations**

In the study, the dependent variable is the mayors' and head officials' intensity of performance information use within different decision making contexts. Performance information use is treated as summative indicator with a high internal reliability (see data and method section). We are aware that self-reporting surveys on performance information use are not free of criticism as the respondents often overestimate the actual use (Poister and Streib 1999) and its reliability depends heavily on the respondents' correct understanding and subjective interpretation of the questions (Tat-Kei Ho 2005). These obstacles can to some

extent be overcome by extensive literature reviews on recent results and used methodologies of relevant studies, interviewing practitioners and experts and finally a robust questionnaire design. To validate the results concerning the respondents' perceived performance information use intensity, we also apply a best-worst scaling approach (Finn and Louviere, Marley and Louviere 2005), and ask the respondents to select both the best and the worst option in ten available subsets of choice alternatives. The whole set consists of financial and non-financial measures in five dimensions: efficiency measures, budgetary accounting measures, effectiveness measures, measures regarding citizen satisfaction and internal learning and development measures. The advantages will be discussed in the data and method section.

The external environment (e.g. population, political stability, financial situation), organizational characteristics (e.g. type of culture) and individual factors of head officials and mayors (e.g. public service motivation, market-orientation) are operationalized through different measure sets. Within this section literature on performance information use, organizational theory and behavioral decision-making theory is reviewed and variables and their expected effects and relationships are developed. The following figure shows our conceptual model which for comparison purposes also integrates some of the variables of a study which was conducted in large US local governments (Moynihan and Pandey 2010). The included factors which are seen as important antecedents for the use of performance information by mayors and chief officials of small and medium-sized local government, are placed in four different boxes. The question if levels of high use also lead to an increase of perceived local government performance will be treated separately.



## Environmental Factors

We are also including environmental factors in our conceptual framework as many studies show that larger local governments are more likely to adopt performance measures (Poister and Streib 1999, Laegreid et. al. 2008), as larger institutions have larger budgets and greater resources. As we do not aim to classify and describe the status quo of the different financial and performance management systems and concentrate on performance information use, we come to an alternative conclusions and therefore hypothesize.

*H1Mayor: Size of government leads to lesser use of performance information*

*H1Chief official: Size of government leads to higher use of performance information*

Some authors emphasize the relevance of financial stress to change routines and organizational behavior (Hood 1995). Moreover it can also stimulate an organization to

improve managerial efficiency and productivity, which leads to changes in financial and performance management systems, as a variety of different performance measures becomes relevant (Morley, 1986). Therefore we come to the conclusion that fiscal stress encourages public decision makers to focus on efficiency and effectiveness measures.

*H2: Better financial situation leads to less use of performance information*

Askims' (2008) findings suggest that higher rates of political competition seems to have a negative effect on the use of performance information by politicians, as more compromises have to be made and within the political arena objectives are relatively vague defined.

*H3: Higher political concentration leads to lesser use of performance information*

### **Organizational factors**

Many scholars treat organizational culture as a key variable in developing control systems and interpret efficient control as a result of fit between culture and the 'formal' system in place (Ouchi, 1979, Fisher, 1995). Quinn and Rohrbaugh (1983) developed an organizational culture model which comprises of two dimensions and allows to identify four organizational culture types which are more or less dominant in organizations. In this context we test the following three alternating hypotheses.

*H4: Rational Culture leads to higher use of performance information*

*H5: Developmental Culture leads to higher use of performance information*

*H6: Group/Support Culture leads to lesser use of performance information*

Many scholars in performance management research view the diffusion and adoption of performance measurement instruments through the lenses of different fields of new institutionalism (see March and Olsen, 1975, Meyer and Rowan, 1977, DiMaggio and Powell, 1983, Oliver 1991), covering rational choice institutionalism, historical institutionalism, normative institutionalism and constructivist institutionalism, as the theoretical framework of their analysis (Modell 2009, Pollitt 2009, Torres et. al. 2011, ). The most prominent concepts within institutional theory, namely the concept of isomorphism and the concept of loose-

coupling, are applied to describe and understand the gaps between pressures induced formal and visible structures changes and actual work activities. Alternatively in their current research Hengel et. al. (2010) criticize the neglect of internal processes within institutional theory and introduce neo-Old Institutional Economics (neo-OIE). These authors use the latter one to analyze the processes through which ‘management accounting rules and routines come to be institutionalized in the organization’ (p. 6). Torres et. al. (2011) include in their recent research the concepts of ‘conflict’ and ‘ambiguity’ regarding performance measurement adoption in Spanish local governments and differentiate based on Matlands’ (1995) research findings between four implementation models: administrative, experimental, political and symbolic. Given this arguments, we think that the style of adoption is closely connected to and/or influences the attitude toward performance measurement in general and as a consequence is also a reliable predictor for performance information use. Therefore the next two hypotheses test the impact of rational vs. symbolic adoption styles on performance information use.

*H7: Rational style of adoption/attitude leads to higher use of performance information*

*H8: Symbolic style of adoption/attitude leads to lesser use of performance information*

### **Individual factors**

Perry and Wise (1990) introduced the concept of public service motivation, interpreting it ‘as an individual predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations’ (p. 386). The instrumental use of the concept of public service motivation is critically viewed (Steen and Rutgers 2011) and also scholars of these research stream (Perry and Wise 1990, Perry 1996, Wright 2001, Kim 2009) state, that employees of public sector and public service organizations are often viewed as people who experience a high degree of enjoyment, satisfaction, and fulfillment from their work and from helping others; therefore placing a greater value on intrinsic instead of extrinsic rewards (Perry and Wise 1990, Pandey and Stazyk 2008, Wright and Pandey 2009). The NPM-inspired performance measurement movement has brought – besides the already existing job security, special benefits and retirement plans, and an even stronger focus on external reward by introducing variable pay systems which links employee performance to organizational objectives (for detailed explanations see Stazyk 2009). Therefore we come to the following

expected relationship between public service motivation and performance information use as we think that the NPM inspired measurement movement stands in contrast to the motivation to serve the public good. Higher market-values should therefore lead to higher levels of use. Moynihan and Pandey (2010) were the first scholars who tested this relationship and therefore we include a revised and shorter PSM measurement scale in our study (Kim 2005). On the individual factor level, the following hypotheses are tested:

*H9: Higher market orientation leads to higher use of performance information*

*H10: Higher Public Service Motivation leads to lesser use of performance information*

*H11: Higher job satisfaction leads to higher use of performance information*

There are many studies dealing with information seeking behaviour of decision-makers (Simon 1975) and the question why information is accepted or rejected and with what intensity different sources of information are used (Askim 2007). Mintzberg's (1975) findings that managers tend to act more on oral than written information is still often cited in this context. Evidence in this field has shown that research focusing only on performance or accounting information systems as primary source for managerial control is too narrow (McKinnon and Bruns 1992) and ignores the fact that decision makers avail many other types of information, which means that accounting and performance measurement reports are only a small part of the same (Askim 2007). Therefore we examine the intensity of information use from different sources regarding the pre-decisional/agenda setting as well as the decisional stage. Taking a broad perspective, we don't examine the influence of different 'information source types' on performance information use (interest of a future paper) but to test a more general hypothesis on the relationship between information seeking intensity and the use of performance information.

*H12: Higher intensity of information seeking leads to higher use of performance information*

### **Technical characteristics – the supply side**

Given all arguments above in a performance measurement context, a usage gap is often observed (see ter Bogt/van Helden 2000, p. 274). Besides other reasons this usage gap also

depends on technical gaps and therefore the supply of relevant data for the different user groups. Supply-side criteria like appropriateness, relevance and validity of data, user friendliness and understandability of data have impact on the willingness to use such data (Poister and Streib 1999, Yamamoto 2008, Grossi and Reichard 2009). We develop three hypotheses to test this relationship.

*H13: Recent changes in the information system lead to higher use of performance information*

*H14: Higher rates of perceived information availability lead to higher use of performance information*

*H15: Higher rates of satisfaction with information level lead to higher use of performance information*

### **Performance of performance information use**

Focusing on performance measurement the most crucial indicator for whether measuring performance is worth its effort is whether public decision makers are using performance information (Hatry 2006) and if this use leads to higher performance levels. The effect of performance information use on organizational performance until now is a relative unexplored area. This also does to the fact that performance in the public sector is a multidimensional concept ranging from concerns for increases in efficiency, effectiveness, quality, productivity, equity, fairness (Walker et. al. 2010) and more recently Moore's re-invented public value (Bennington and Moore 2010), which is often seen as an unambiguous concept with a variety of definitions (Rhodes and Wanna 2007). We analyze the relationship between the intensity of use and the respondents' perceived organizational performance in two contexts, both are treated as a summative index with high internal reliability, including efficiency, value for money and quality aspects of performance.

## Data and method

The primary data source for the empirical part of the paper therefore is the mail triggered online survey of local governments with populations between 0 and 20,000, which was sent to two informant groups (mayor, chief executive officer). In a first step the mail addresses for the two informant groups from two of the nine 'Länder' were accessed via the local government homepages (nearly 98%), as there exists no central database. The mail addresses for the two groups were on average in 60% available and are included in our survey. In a next step local governments were selected by stratified sampling based on population size. Socioeconomic, financial data and election results were obtained from Statistics Austria, from the regional statistics offices and other statistical databases. The online questionnaire was finally sent to 349 mayors and 345 chief officials (N = 694). The respondent rate includes 182 (n) usable instruments for the combined regression analysis.

A detailed explanation of the variables can be found in the Appendix. Most questions were accommodated to Likert-scale items, in which responses fall along a continuum regarding the level of agreement, evaluation of availability and satisfaction, or intensity of use. The scales used range in value from 1 to 4, 5 or 7. Some cases could not be matched in conducting the regression analysis due to missing data and unanswered questions and have to be neutrally omitted. Tables 1 and 2 show the (preliminary) descriptive statistics regarding the variable of the two regression models and the results from the best-worst scaling approach.

Table 1 and 2

## Results

*(Work in progress (preliminary results!))*

Within this section we start off with a brief interpretation of the results of the variables which are included in the combined regression model presented in table 3. To get a clearer picture on the dependent variable performance information use (PIU) we asked ten questions regarding the individual use of efficiency and effectiveness measures in different situations by giving concrete examples for these two performance dimensions. In a further step the items were clustered in four dimensions, dealing with different purposes of use: budgeting, managing, strategy building and external accountability. As the focus of the study lays in testing a

combined conceptual model we aggregate these items in one factor with a high internal reliability for both respondent groups (Cronbach alpha 0.945, Eigenvalue 6.75).

To further examine the relationships among the previously mentioned characteristics with the effects of using performance information regression models for the two groups were developed. The model uses the independent variables defined previously and is presented in table 3. In the first OLS model for both groups some independent variables show higher correlation rates, statistical acceptable rates for multicollinearity are reached (tolerance 0,.-0.9 VIF 1-4). The composite indicators for culture are correlated with each other which make sense as we want to test the effects of different culture types on performance information use. Nevertheless we decided to omit the rational culture variable with the highest variance inflation rate in the 'mayor model' which resulted in an increase of the adjusted R<sup>2</sup>. In the 'head official' model the developmental culture variable was removed leading to similar significant results. Regarding the effect of organization cultural on performance information use we can therefore conclude that in the 'head official' model rational culture leads to higher PIU levels (H4) whereas in the 'mayor model' developmental culture shows significant positive effects in the same direction (H5).

Two of the external factors, financial health (H2) and political concentration (H3), are not significantly related with PIU, although they show effects in the expected direction. This may be because that only a part of the financial situation of local governments can be directly influenced and the effects are therefore limited. Political concentration in most of local governments is high, and although levels of competition increased, in recent years there seems to be evidence that a higher political stability leads to higher PIU. Size has a significant negative effect in the mayor model, and also the head official model shows effects in the expected direction.

In contrast to the vague effects of most of the external factors, the two different adoption styles significantly show the expected effects on PIU (H 7 and H8) and will be discussed in detail. These two variables include different items, dealing with the actual adoption style and its perceived usefulness. Respondents were asked if they agree to different aspects of the performance measures actually used in their organizational context and about their general attitude towards performance measurement. The 'rational-adoption-style' variable consists of four items and are the result from a factor analysis including following example questions:

performance measures are used to allocate budgets in a more equitable way, performance measures are used to make more rational decisions, performance measures are frequently used. The 'symbolic-adoption-style' variable also consists of four items and are also factor analysis based and include following example questions: performance measures are only used to legitimize political decisions, performance measures are only ad-hoc ascertained, Both variables has an acceptable internal reliability. The results support our hypotheses and contribute to the quantitative validation of an aspect which is mostly treated within qualitative studies in this field (Askim 2007).

Typical personal characteristics like age or tenure have been widely explored in a performance measurement context, still offering mixed results. Within this study we primarily focused on the attitude and belief system of mayors and head officials. Although hypothesized, we do not expect a highly significant effect of public service motivation in the 'head officials' model (H10). Moreover, in the 'mayor model' the same variable indicates an effect in the other direction, although this effect is very low. So far only one study treated this relationship and shows a positive relationship between public service motivation and PIU (Moynihan and Pandey 2010). As already stated we used a revised 12-item-scale (Kim 2005), while the authors use four questions from the 'original' 24-items-scale (Perry 1990). Though, as the four questions are also included in the scale we used in our survey, the result may support the findings from more recent studies which clearly differentiate between public sector motivation and public service motivation (Perry and Hondelghem 2008, Steen and Rugers 2011). As performance measurement is grounded in public choice theory (Boyne et. al. 2003) which interprets actors as self-driven it may conflict with more altruistic-driven head officials. The different country context and the comparable small sample size can be another explanation for the divergent result and needs closer attention in the future. Higher levels of market orientation don't show the expected results as well as they indicate a slight effect in an unexpected direction (H9). Higher rates of job satisfaction have significant positive influence on PIU within the mayor model.

The variable information seeking intensity mainly consists of items which were applied in a study on performance information use of councilors at the local government level in Norway (Askim 2007). This composite indicator finally includes eleven items which show a high internal reliability. Head officials who extensively seek and use information from different

sources are more likely to use performance information, while mayors are hardly influenced by their information seeking behavior (H12).

As was indicated earlier further questions on availability of performance information within different dimensions were asked. Information systems change plays a minor role in both models (H13). Interestingly for mayors information availability plays an important factor regarding PIU, while head officials' PIU heavily depends on their satisfaction with available performance information. Mayors tend to lesser PIU if their information needs are fulfilled to a greater extent. This may indicate that although performance information availability is low satisfaction levels are high as they don't need more performance information for decision-making purposes (H14 and H15).

The relationships between PIU and perceived performance are shown in tables 4 and 5. We measure performance as summative construct consisting of four different items. These items include questions regarding the perceived organizational efficiency, quality, value for money and equity grade. Although self-reported measures are not free of critics there is evidence that perceived performance is positive to objective measures of performance (Kim 2004) and concerns regarding overstatements are not confirmed. Nevertheless we use a second include set including perceived comparative performance. Respondents were asked to rate their performance in comparison to similar local governments within the above mentioned fields. Both items sets show high internal reliability and high loadings on one factor. The results show a significant effect of performance information use on the perceived internal as well as comparative performance. Only the  $R^2$  results in the head officials' comparative performance model is significantly lower than in all other models.

Table 4 and 5

## Conclusion

In recent years empirical research on performance information use has gained momentum but quantitative studies which focus on a broader context are less widespread. The contributions of the present study are that it offers insights in a variety of factors which influences performance information use, namely different types of culture, availability of performance information, intensity of individual information seeking behavior, job satisfaction and the style of adoption. Moreover it is the first quantitative study regarding performance information use in a country which is based on a strong 'Rechtsstaat' principle and is often described as late- or non-adopter of NPM-style reforms. Finally, we are able to confirm many of the findings from former studies and contribute to a better understanding regarding some new aspects like the lesser use of performance information by altruistic-value driven head officials'. Within the study we tested two adoption styles, which show significant effects on performance information use. We are aware that there are certainly more different styles exist. In future research it would be interesting to find measures which make it possible to identify different adoption styles and to test their effects on performance information use. Walker et al. (2010) states that 'at the heart of PM are "goals," "targets," "indicators," "systems of control," and "delegation of authority" to line managers and it is uncontested that at the end of the day performance management should lead to improved organizational and individual performance.

The latter one was not treated in our study, but we find another aspect which seems to be important, equity. The multiplicity of organizational and individual goals, sometimes in sharp contrast to one another, the need to adhere to given principles of decision-making, the attempts to act in an equitable way, the task of mediating between bearers of different interests and the imperative to assign different priorities to urgent issues cannot be solved only by introducing a 'full blown performance measurement system' (Saliterer et al. 2011). Respondent who find that in their organizational context performance information is used to reach higher levels of equity within the process of resource allocation also show higher individual levels of performance information use. Both groups of actors (politics and management) have to accept the results of performance measurement whereas values, attitudes and behavior of individuals are a major prerequisite. Both must have the ability to interpret the results, to undertake the necessary actions and to "translate" the results to their subordinates and to distinguish between the performance orientation of an entire organization

and of individual actors. This is also a question of incentive structures which are challenged when performance measurement instruments are introduced.

This study has several limitations. First, as most studies which try to predict different factors on a dependent variable, it maybe suffers from the so called 'causality problem'. Are the different factors leading to higher information use or vice versa? This problem can partly be solved using longitudinal designs and time-lagged correlations to more adequately address causality (Kim 2004) and to compare and contrast performance consequences of PUI in different contexts and different policy settings (Walker et al. 2010).

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## Appendix

Table 1: Descriptive Statistics for the variable included in the combined regression model

	Items	Head official					Mayor				
		Min	Max	Mean	SD	CA	Min	Max	Mean	SD	CA
PIU (Intensity)		10,00	68,00	45,77	13,51	0,94	10,00	70,00	50,39	12,97	0,94
Size		1,00	6,00	2,43	1,10	n	1,00	6,00	2,33	1,07	n
Financial Health		0,00	5,00	2,65	1,34	n	0,00	5,00	2,49	1,39	n
Political Competition		0,24	0,89	0,49	0,12	n	0,21	0,89	0,48	0,12	n
Rational Culture	3	5,00	21,00	15,46	3,03	0,83	3,00	21,00	16,08	3,28	0,83
Development Culture	3	3,00	20,00	13,39	3,09	0,80	3,00	21,00	14,76	3,52	0,80
Group Culture	2	5,00	14,00	11,54	1,85	0,84	2,00	14,00	11,25	2,11	0,80
Rational style of adoption	4	4,00	20,00	12,88	2,91		5,00	20,00	14,17	2,78	
Symbolic style of adoption	4	4,00	18,00	12,80	2,70		3,00	15,00	9,33	2,51	
Market orientation	7	12,00	40,00	28,82	4,66		6,00	42,00	30,34	6,34	
Public Service Motivation	12	42,00	82,00	62,55	8,92	0,85	12,00	84,00	68,39	11,10	0,85
Satisfaction/ Compassion	4	14,00	28,00	23,25	3,35	0,85	4,00	28,00	24,53	3,69	0,85
Information seeking intensity	11	29,00	55,00	41,07	5,40	0,80	11,00	54,00	41,43	6,79	0,80
Information system change	1	1,00	5,00	4,07	0,90	n	1,00	6,00	4,19	1,05	n
Information Availability	5	6,00	20,00	13,32	3,40	0,80	5,00	20,00	14,44	3,30	0,80
Information demand	5	5,00	20,00	13,79	3,51	0,76	5,00	20,00	14,06	3,08	0,76
Performance	4	13,00	28,00	24,03	3,28	0,958	4,00	28,00	25,01	4,59	0,87
Comparative performance	4	9,00	20,00	14,10	2,08	0,87	4,00	20,00	14,80	2,56	0,77

Table 2: Descriptive statistics for the best-worst scaling on dimensions of performance information use

	Head official					Mayor				
	Min	Max	Mean	SD	R	Min	Max	Mean	SD	R
PIU Efficiency	-1,00	1,00	0,11	0,51	<b>3</b>	-0,67	1,00	0,22	0,47	<b>1</b>
PIU Financial	-0,83	1,00	0,47	0,48	<b>1</b>	-1,00	1,00	0,22	0,63	<b>2</b>
PIU Internal L & D	-1,00	0,83	-0,48	0,45	<b>5</b>	-1,00	0,67	-0,33	0,45	<b>5</b>
PIU Effectiveness	-1,00	0,83	-0,31	0,47	<b>4</b>	-1,00	1,00	-0,28	0,45	<b>4</b>
PIU Satisfaction	-1,00	1,00	0,21	0,58	<b>2</b>	-1,00	1,00	0,16	0,56	<b>3</b>

Table 3

Regression of independent variables on performance information use in small and medium-sized local governments (**Preliminary results (!)**)

Independet Variables	Chief official PIU				Mayor PIU			
	b	SE (b)	Beta	t	b	SE (b)	Beta	t
Constant	- 3,72	11,70		- 0,32	-13,72	8,68		-1,58
<b>External</b>								
Size	-0,66	0,86	-0,05	-0,77	-1,62	0,90	-0,13	-1,81
Financial Health	-0,56	0,64	-0,06	-0,88	0,72	0,65	0,08	1,11
Political Competition	6,88	7,61	0,06	0,90	5,34	7,63	0,05	0,70
<b>Organizational</b>								
Rational Culture	1,03	0,40	0,23	2,57				
Development Culture					1,25	0,41	0,34	3,06
Group Culture	-1,38	0,58	-0,19	-2,37	-1,05	0,64	-0,17	-1,65
Rational style of adoption	1,26	0,39	0,27	3,26	1,24	0,39	0,27	3,17
Symbolic style of adoption	-0,63	0,34	-0,13	-1,87	-0,14	0,38	-0,03	-0,37
<b>Individual</b>								
Market orientation	-0,11	0,19	-0,04	-0,59	-0,24	0,18	-0,12	-1,33
Public Service Motivation	-0,27	0,10	-0,18	-2,73	0,10	0,10	0,09	0,97
Job satisfaction	0,60	0,32	0,15	1,86	0,81	0,37	0,23	2,20
Information seeking intensity	0,73	0,19	0,29	3,78	0,12	0,19	0,06	0,64
<b>Technical</b>								
Information system change	0,23	1,06	0,02	0,22	1,05	1,14	0,09	0,92
Information Availability	0,51	0,45	0,13	1,13	1,26	0,41	0,32	3,07
Satisfaction with level of	0,73	0,35	0,19	2,07	-0,47	0,39	-0,11	-1,22
<b>Model fit</b>								
R-square	0,712				0,698			
R-square, adjustet	0,662				0,64			
n	95				87			

Significant at the level \* $p < 0.1$  \*\* $p < 0.05$ , low level of multicollinarity, tolerance (0,3-0,9), VIF (1-3), KMO (2)

Table 4 Regression of PIU on perceived internal performance

Independet Variables	Chief official PIU				Mayor PIU			
	b	SE (b)	Beta	t	b	SE (b)	Beta	t
Constant	18,74	1,05		17,90	15,84	1,72		9,19
PIU	0,12	0,02	0,48	5,27	0,18	0,03	0,51	5,50
R-square	0,230				0,265			
R-square, adj.	0,222				0,256			

Table 5 Regression of PIU on perceived comparative performance

Independent Variables	Chief official PIU				Mayor PIU			
	b	SE (b)	Beta	t	b	SE (b)	Beta	t
Constant	11,85	0,72		16,51	9,31	0,92		10,08
PIU	0,05	0,02	0,32	3,28	0,11	0,02	0,55	6,13
R-square	0,103				0,304			
R-square, adj.	0,093				0,296			

Table 6 Description of variables

Dependent Variable	Source	Scale	Operationalization/Questions
<b>Performance Information Use</b>	Survey	Likert 1-7	Aggregated Index of 10 Questions
<b>Independent Variables</b>			
<b>External</b>			
Size	Statistics Austria	(1-5)	Population 2010, 5 Clusters
Financial Health	Statistics Austria	(0-5)	Five financial measures (0= under average, 1 = above average within size cluster, 2006-2009)
Political Concentration	Regional Statistics	(0-1)	Herfindahl Index, average measure (2005 and 2010)
<b>Organizational</b>			
Hierarchical Culture	Survey	Likert 1-7	Summative Index of 3 Questions
Rational Culture	Survey	Likert 1-7	Summative Index of 3 Questions
Development Culture	Survey	Likert 1-7	Summative Index of 3 Questions
Group Culture	Survey	Likert 1-7	Summative Index of 2 Questions
Rational Adoption	Survey	Likert 1-5	Summative Index of 4 Questions;
Symbolic Adoption	Survey	Likert 1-5	Summative Index of 4 Questions:
<b>Individual</b>			
Market Values	Survey	Likert 1-7	Summative Index of 3 Questions,
Public Service Motivation	Survey	Likert 1-7	Summative Index of 12 Questions
Satisfaction/Compassion	Survey	Likert 1-7	Summative Index of 4 Questions
Information seeking intensity	Survey	Likert 1-5	Summative Index of 11 Questions
<b>Technical</b>			
IS Change	Survey	Likert 1-5	
Availability	Survey	Likert (1-4)	Summative Index of 5 Questions,
Availability Satisfaction	Survey	Likert (1-4)	Summative Index of 5 Questions

Correlation matrix for the first mayor mode (before omitting variables) (Pearsons r, two tailed)

Correlation matrix for the head official model (before omitting variables) (Pearsons r, two tailed)

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<sup>1</sup> Competing legislation elements occur when federal government legislation overrules federal states legislation, described in Art. 74 GG, Republic of Germany