

Management and performance in the public sector: Evidence from German municipalities

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Motivation

- ▶ **Management practices matter a lot** (see e.g., Bloom and Van Reenen, 2007; Bloom et al., 2012, 2015c, 2019)
 - ▶ Interview and survey data on the use of management practices to construct measures of structured management
 - ▶ Management scores strongly correlate with firm performance
 - ▶ Field experiments provide causal evidence for effect of management on performance
- ▶ **Only a small number of studies for the public sector** (see e.g., Bloom et al., 2015a,b; Rasul and Rogger, 2018)
- ▶ **Our contribution:** Systematic empirical analysis of the relationship between management practices and the performance of the public administration of municipalities in Germany

Motivation

► Main findings:

1. Descriptive evidence on management techniques employed in municipal administrations.
2. Municipalities are strongly heterogeneous with respect to (i) degree of structured management and (ii) performance.
3. Positive relationship between management score and municipal performance across a wide variety of domains.

Approach

- ▶ **Management survey** among all 3,083 municipalities with more than 5,000 inhabitants (covering roughly 80% of the German population)
- ▶ Cooperation with “KGSt - Kommunale Gemeinschaftsstelle für Verwaltungsmanagement”, which is a non-profit association of German municipalities providing consulting services to the municipal administrations of its members

Approach

- ▶ **To measure performance of municipal administrations:**
 - ▶ We use data by the Bertelsmann foundation (a large non-profit organization in German), a major collector of information at the municipal level as **indirect measures** of performance (*“Wegweiser Kommune”*)
 - ▶ Additionally, we are in the process of eliciting **direct performance measures** (in the form of customer satisfaction) via additional surveys

Survey design: Key challenges for measuring structured management in the public sector

- ▶ Many important aspects where municipalities differ from firms operating in the private sector
- ▶ Starting with a large set of potential questions (130+) from all versions of the “World Management Survey”
- ▶ Identifying topics which are important for public sector performance and where the municipalities might differ
- ▶ A total of **92 (sub-)questions** from **6 categories** to measure “structured management” in municipal administrations:
 - ▶ **Goal setting**
 - ▶ **Use of KPIs**
 - ▶ **Organizational learning**
 - ▶ **Structured processes**
 - ▶ **Digitization**
 - ▶ **Human resource management**

Survey design: Implementation

- ▶ Similar approach as in the *Management and Organizational Practices Survey* (MOPS), the closed form census version of the WMS, answer categories: binary or Likert scale
- ▶ Responses are normalized on a 0-1 scale, the **management score** is calculated as the unweighted average of the normalized responses across all questions
- ▶ Several measures to increase participation
- ▶ Study period (mid April to mid May 2021), online
- ▶ Response rate of 19%: 600 (usable) responses from municipalities (plus 59 counties not used here), representing a population of 28.1 million

Participation

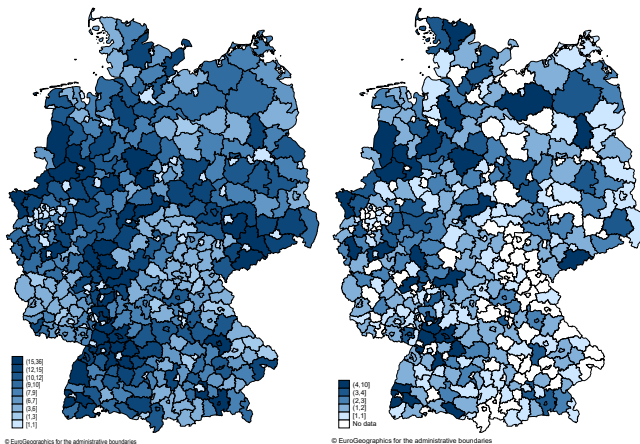


Figure: Number of municipalities with more than 5,000 inhabitants (left) vs participating in our survey (right)

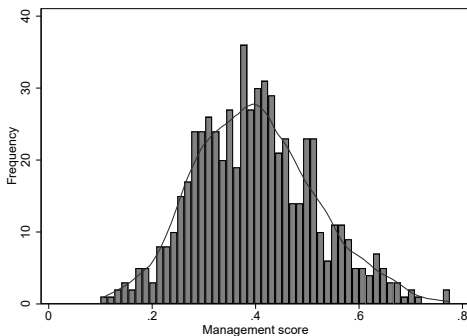
Distribution of the management score

Hypothesis 1

Municipalities are heterogeneous with respect to the degree to which their management practices are structured.

Distribution of the management score

Figure: Distribution and kernel density estimate of management score across municipalities



Distribution of the management score

- ▶ A similar picture emerges for within-state distributions of the management score.
- ▶ This is interesting because the main parameters of how municipal administration is to be conducted are set at the state level.

Measures of municipal performance

- ▶ For private sector organizations, suitable performance indicators are often readily available (e.g. sales, profit, or labor productivity). Less clear in the public sector....
- ▶ We propose eight indicators from the Bertelsmann data (5-year averages 2015-2019; results robust to other forms of averaging or the lack thereof):
 - ▶ **Fiscal situation** (all per capita): (i) *Income tax revenue*, (ii) *Business tax revenue*, (iii) *Primary balance*, (iv) *Financial balance*
 - ▶ **Attractiveness** for (v) new citizens (*Net migration*, per 1000 inhabitants), (vi) high-skilled labor (*Share of academics in workforce*) and (vii) new businesses (*Number of start-ups*, per 1000 inhabitants).
 - ▶ **Infrastructure**: (viii) Share of private households with *Broadband coverage*

Measures of municipal performance: Descriptives

	N	Mean	SD	Min	25%	50%	75%	Max
Business tax	600	399.7	336.0	61.6	214.1	323.3	469.8	4,126.4
Income tax	600	462.2	134.8	164.4	368.7	460.8	544.6	891.2
Primary balance	600	228.1	191.9	-144.0	119.0	200.0	312.6	2,598.4
Financial balance	600	-7.4	32.3	-246.8	-21.3	-6.4	4.4	222.4
Academic workforce	583	9.5	5.2	2.6	6.2	8.2	10.9	42.2
Net migration	583	7.4	7.3	-7.3	3.6	6.8	9.7	108.3
Start-ups	582	6.6	1.8	0.8	5.4	6.5	7.8	16.6
Broadband coverage	583	80.4	17.9	1.2	72.5	85.3	94.1	100.0

Management score and municipal performance:

Preview of Results

- ▶ In the raw data, **ALL eight indicators are positively related to the management score.**
- ▶ This positive relationship is **robust** to controlling for state dummies, regional type dummies (metropolitan, rural, etc.), and population size categories (and to clustering standard errors at the state level).
- ▶ Even though these outcome variables are arguably only rather indirectly influenced by public administrations (whose direct effect might be on the business climate or citizens' well-being) in the large majority of cases these relationships are (highly) **statistically significant.**

The management score and municipal performance

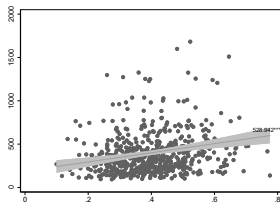
Hypothesis 2

Municipalities are heterogeneous with respect to (organizational) performance.

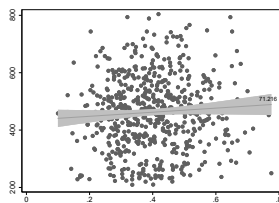
Hypothesis 3

There exists a positive empirical relationship between the intensity with which municipalities use structured management practices and (organizational) performance.

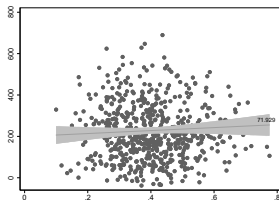
Management score and municipal performance: Financial situation (raw data)



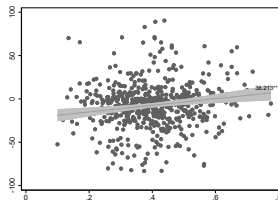
(a) Business tax



(b) Income tax

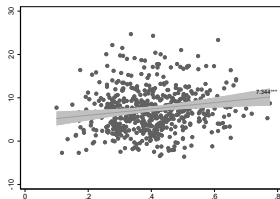


(c) Primary balance

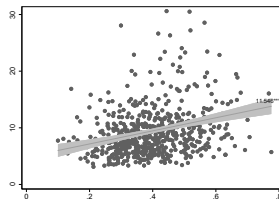


(d) Financial balance

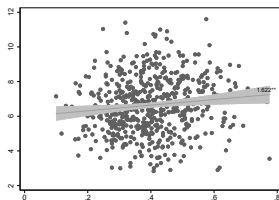
Management score and municipal performance: Attractivity and infrastructure (raw data)



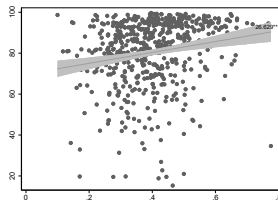
(e) Net migration



(f) Academic workforce



(g) Start-ups



(h) Broadband coverage

Regression analysis

- ▶ We regress each of the eight performance measures on the management score and controls (four specifications where controls are consecutively added)
- ▶ We also construct and study a composite index of the eight measures, the “municipal performance index” (MPI)
- ▶ Standard errors clustered at the state level

Regression analysis

- Table displays the regression coefficients of the management score (nine left-hand side variables, four specifications each)

	(1)	(2)	(3)	(4)
Business tax	528.94*** (0.00)	573.39*** (0.00)	558.03*** (0.00)	409.18* (0.05)
Income tax	71.22 (0.17)	80.71*** (0.00)	37.32 (0.14)	54.78** (0.01)
Primary balance	71.93 (0.27)	126.36 (0.12)	124.98 (0.12)	127.90 (0.20)
Financial balance	38.21** (0.03)	36.50** (0.04)	36.12*** (0.00)	20.69 (0.16)
Academic workforce	11.55*** (0.00)	11.46*** (0.00)	9.93*** (0.00)	4.16 (0.18)
Net migration	7.34*** (0.00)	7.27*** (0.00)	6.68*** (0.00)	5.85*** (0.00)
Start-ups	1.62*** (0.00)	1.24*** (0.00)	0.96** (0.01)	0.49 (0.26)
Broadband coverage	26.63*** (0.00)	27.41*** (0.00)	24.48*** (0.00)	11.28 (0.15)
Municipal performance index (MPI)	1.18*** (0.00)	1.20*** (0.00)	1.07*** (0.00)	0.69** (0.04)
State dummies	No	Yes	Yes	Yes
Regional type dummies	No	No	Yes	Yes
Population size dummies	No	No	No	Yes

Work in Progress

Obtaining direct measures of administrative performance

- ▶ Idea: Customer satisfaction survey among firms
- ▶ In cooperation with KGSt, we currently survey all 229,000 (publicly registered) firms residing in the 600 municipalities that participated in our administrative survey

In-depth analysis of management styles

- ▶ Investigating the role of subscores (HR management, use of KPIs, etc.) of our management score
- ▶ Machine learning approach to identify management types