



STI 2018 Leiden

*23rd International Conference on Science and Technology Indicators
"Science, Technology and Innovation Indicators in Transition"*

STI 2018 Conference Proceedings

Proceedings of the 23rd International Conference on Science and Technology Indicators

All papers published in this conference proceedings have been peer reviewed through a peer review process administered by the proceedings Editors. Reviews were conducted by expert referees to the professional and scientific standards expected of a conference proceedings.

Chair of the Conference

Paul Wouters

Scientific Editors

Rodrigo Costas
Thomas Franssen
Alfredo Yegros-Yegros

Layout

Andrea Reyes Elizondo
Suze van der Luijt-Jansen

The articles of this collection can be accessed at <https://hdl.handle.net/1887/64521>

ISBN: 978-90-9031204-0

© of the text: the authors

© 2018 Centre for Science and Technology Studies (CWTS), Leiden University, The Netherlands



This ARTICLE is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License

University Performance Indicators in Use: Administrative Data on State Control of Russian Universities

Katerina Guba*

*kguba@eu.spb.ru

Center for Institutional Analysis of Science & Education, European University at St. Petersburg, Gagarinskaya st. 6/1A, St. Petersburg, 191187 (Russia)

Introduction

Evaluation of university performance is one of the most controversial topics in Russian higher education. During the last five years, the government has produced a vibrant discourse on the necessity to reduce the number of low-quality and weak institutions. As part of the task to 'clean the system of higher education,' the state agency developed a methodology to evaluate the performance of educational organizations. All Russian universities are obliged to participate in the annual evaluation and provide reliable information about more than one hundred statistical indicators. The state agency claims that metrics are used for making decisions about enforcement actions like onsite inspections, pending accreditation and even shut down a university. The literature on evaluation systems and practices has covered different topics from the consistency and reliability of indicators to effects of indicator uses (Rijcke et al., 2016), but the research less focuses on the question about decision-making based on quantitative indicators. The following question is rarely raised: Have the results of the evaluations lied on the basis of decisions made by the state agency? Administrative dataset gathered by the Russian state agency has the potential to contribute to the analysis of the consequences of evaluations.

This research uses the case of evaluation of university performance and decisions to inspect a university to study how state agencies apply information in decision making. This question is the critical question for the research on information processing in organizations (Blom & Carraro, 2014; Baumgartner & Jones, 2012; Workman, Jochim & Jones, 2009). Feldman and March in their seminal paper show that there are some behavior patterns in organizations that do not seem to fit the rational perspective (Feldman, March, 1981). Notably, there is a considerable body of research on non-rationality in public agencies (Shulock, 1999; Baumgartner & Jones, 2012). They often seem to deny all principles of reasoned judgment. Regarding information processing, organizations gather information ostensibly for decisions but use it for other purposes or do not use it at all (Dahler-Larsen, 2000).

Accordingly, we raise the following questions: Is there a mismatch between the official grounds of using information and empirical behavior? What can explain (non)use performance indicators in decision making? Are there any other factors which impact the decisions?

Data

This research relies on big administrative data. Administrative data can be described as data which are derived from the operation of administrative systems such as governmental agencies (Connelly et al., 2016). Despite all the differences between government data and online data, usually implied under this heading, such data have several common features: cover the entire population, available electronically, have impressive size, produced not for analysis, but as a result of a functioning of an organization (Connelly et al., 2016). In the Russian social science, the use of administrative data is on a stage of recognition as a new agenda. At the same time, state agencies provide excellent opportunities for the implementing of administrative data analysis. The Ministry of Science and Education collects an enormous amount of information about academic organizations. This study uses administrative data on the inspections of universities. The data about inspections are merged with results of annual evaluations of universities conducted by the Ministry in 2013-2016 (7785 cases).

The starting point is to divide information acquisition and utilization. It would be misleading to assume that one stage automatically leads to the next. Decision makers can acquire information without using it. By taking into account the difference between stages we can be closer to an accurate description of reality. The annual evaluations of universities are the information which could or could not influence on decisions. The inspections are the decisions which were made by the state agency. The agency officially claims that the decisions are based on the performance indicators. The main purpose of the inspections is to assess the compliance with the highly-detailed standards which regulates many aspects of educational activities. During an inspection the agency decides punish or not to punish the university if any violations are found. As a result of an inspection a university can lose state accreditation or even a license.

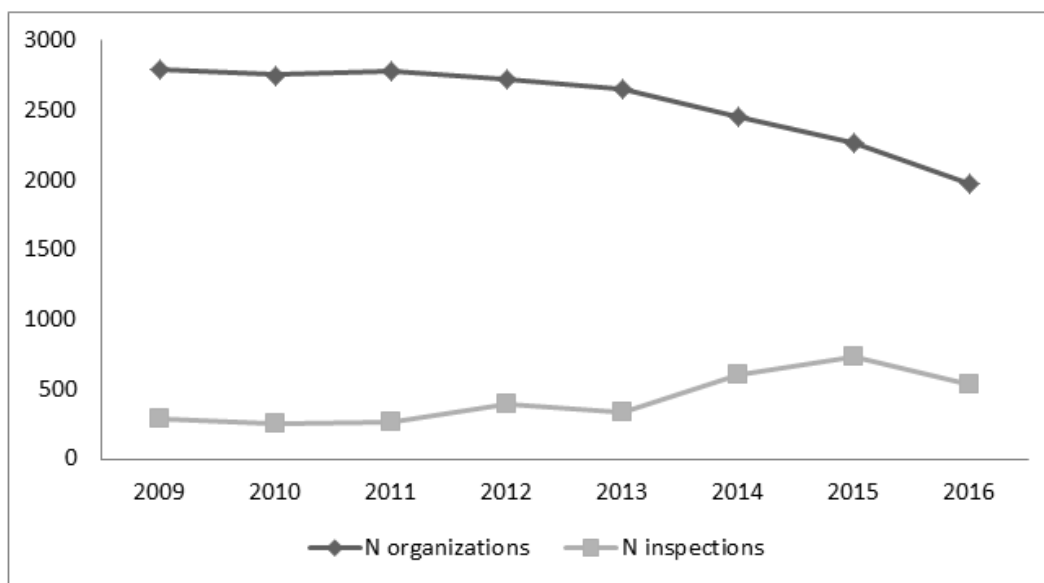
However, how can we understand that information has influenced a decision? The mere fact that a person or an organization referred to the information does not mean that the information was used. This study based on evaluations of universities and subsequent decisions to inspect or not inspect the university. At the minimum, the empirical data ought to show that universities which have low-performance results are inspected more often than those universities that have higher performance results.

Results

The Russian system of higher education is represented by 1257 public and 718 private institutions and slightly more than 1,000 regional branches—approximately two-thirds of which belong to the public sector. Public universities are provided with basic infrastructures, public funding for training students, and support to finance their research activities. At the same time, private higher education institutions do not have access to public funding to cover the costs of enrolling even the most talented students or supporting research activities (Androuschak & Yudkevich, 2012). Withal private institutions are obliged to have a state license.

The state launched the federal executive body officially named Rosobrnadzor to watch educational organizations. In 2014 the agency started a campaign to "clean the system of higher education." If the state intends to close a university the first step is to inspect a university. So the number of inspections has been growing. The data demonstrate that in 2013 there were 329 inspections, then in 2014 almost twice as many - 612. It has resulted in a decreasing number of educational institutions (see the fig.1).

Figure 1. The dynamic of inspections conducted by the state agency



Did the agency use the performance indicators in decision-making? The next table shows two things: the number of universities which were labelled as ineffective or effective and the number of universities which were inspected during this year. It is evident that there were universities which were non-effective but non-inspected as well as effective universities which the agency did not watch.

Table 1. The number inspected universities during 2015-2016

	Non-effective	Effective	N
Not inspected	583 (76%)	1 639 (81%)	2 222
Inspected	185 (24%)	388 (19%)	573
N	768 (100%)	2 027 (100%)	

We conducted linear probability model with inspection as dependent variable and performance indicators measured in different ways as the independent variable. Monitoring of Russian universities (2013-2016) contains the indicators of the effectiveness of universities in the different domains of activity: educational activity, research activity, international activity, finance, teaching staff, employment of former students.¹ These indicators are presumably

¹ Some of the measures of domains such as the number of Web of Science and Scopus publications and citations are highly conventional. Others such as the size of the dormitories are more local. Educational activity is measured by United State Exam; research by income coming from grant activity of a university; international activity by the number if international enrollment; finance by all income of a university per one lecturer; teaching staff by the staff with academic degrees; employment by the share of student who found jobs after graduation.

reflecting principal domains of university development such as quality of education, research activity, international activity, finance, teaching staff, and employment of former students. A university's performance at each of the six principal indicators is compared to thresholds for these indicators. An effective university has to get the threshold at no less, than four main indicators.

We use (1) the fact that a university was indicated as effective, (2) the number domains in which an organization has indicated as effective (e.g., it is possible to be effective in education domain but non-effective in research domain) and (3) raw values of the key indicators. To account for the bias to the private universities the university type was included. We use between-effects here that means we estimate the difference between two universities when one was effective and other we ineffective in a previous year; one was the private and the other was the state. The models take time autocorrelation into consideration.

Table 2. Linear probability model of inspections on performance indicators

Variables	#1 AME	#2 AME	#3 AME	#4 AME	# 5 AME
Private	0.107*** (0.0203)	0.0839*** (0.0276)	0.115*** (0.0229)	0.115*** (0.0243)	0.117*** (0.0236)
Number of indicators	-0.0488*** (0.00943)				
Education (raw)		-0.0595*** (0.0139)			
Research (raw)			0.0137 (0.113)		
Finance (raw)				0.0163 (0.0705)	
Internationalization (raw)					-0.0252** (0.0113)
N	4.919	4.217	4.218	4.22	3.824
*** p<0.01, ** p<0.05, * p<0.1 All variables are measured in previous year.					

Different models demonstrate that the state systematically penalizes the universities which are simultaneously evaluated as effective organizations. Instead of using different kinds of metrics about research and educational activity the state bases their decisions on the university type. The fact of being inspected depends on whether the university is a private organization.

Discussion

The data demonstrate the over-interest in performance indicators and under-use of this information. What explains this paradox? Why does the Ministry invest so heavily in gathering performance indicators, lacking evidence that it makes much difference in decisions? It is hard to answer this question directly but instead, we can ask about the alternative information which seems is used in decision-making about inspections.

First of all, the type of university is much more simple information compared with the performance indicators. Decision-makers especially in the authoritarian system form “the temptation of clarity” (Baumgartner & Jones, 2012; Black, 2008). Their decisions are based on clear but low-quality information that fails to capture the complexity of the environment. Actors are interested in minimizing noise in the signals they receive. For them, information processing involves a trade-off between diversity and clarity. The monitoring of the universities gives the very sophisticated information about how they operate. It seems the agency has too much information to use it.

From this point of view, the state agencies operate as functionally-stupid organizations (Alvesson, 2012; Miller, 1993). Functional stupidity is organizationally-supported lack of reflexivity, substantive reasoning, and justification. It entails a refusal to use intellectual resources outside a narrow and ‘safe’ terrain. However, it can provide a sense of certainty that allows organizations to function smoothly. In this sense, to be stupid is not just to lack knowledge, it is also to lack the ability or willingness to use knowledge or a lack of willingness to question deeply held beliefs who is bad and who is good.

From the point of view of state control, it is natural to suspect private organizations as the main candidate for inspection and shut-down even if their performance results are passable. On average, private institutions tend to focus their offer on the bachelor level and less on master degrees while doctoral programs are almost absent. Comparing with public institutions, private universities offer more often distance learning and evening classes. It seems that private institutions do not have enough resources to hire an academic staff of high quality. With regards to salary rates, salaries in private universities are less than in public organizations.² Fore mentioned facts let us conclude that private institutions could be categorized as a low-status sub-category. In this respect, the agency confirms social expectations. Private institutions are bad institutions which must be closed. They construct the narrative that the private institutions are non-effective, and this narrative has a sense to them even it is not true.

References

Androuschak, G., Yudkevich, M. (2012). Russian higher education: salaries and contracts. In P. Altbach, L. Reisberg, M. Yudkevich, G. Androuschak & I. Pacheco (Eds), *Paying the Professoriate: A Global Comparison of Compensation and Contracts* (pp. 225-239). New York and London: Routledge.

Alvesson, M., Spicer, A. (2012). A stupidity-based theory of organization. *Journal of Management Studies*, 49, 1194–1220.

² Based on data about the population of Russian universities we calculate the median of the percentage of full-time students. On average, only 10% of their students are full-time students while public institutions enrol almost half of their students on full-time programs. We also calculate the ratio of faculty members per students and found that this ratio is less in case of private universities – the median is 0.053 for the private and 0.037 for the public. In other words, in half of private institutions, there are no more than 3.7 lectures per 100 students while in public institutions this number is five lectures. There is no statistical difference between public and private universities in the number of lecturers who have academic degrees. At the same time, with regards to salary rates, salaries in private universities are less than in public organizations. In half of private institutions average wage of a faculty member in comparison to a regional average wage is less than 59.4% while in public universities this number is 104%.

Black, J. (2008) Constructing and contesting legitimacy and accountability in polycentric regulatory regimes. *Regulation & Governance* 2:2, 137–164.

Blom, T., & Carraro, V. (2014). An information processing approach to public organizations: The case of the European Union Fundamental Rights Agency. *European Integration online Papers (EIoP)*, 18.

Burrows, R. (2012). Living with the h-index? Metric assemblages in the contemporary academy. *The Sociological Review*, 60, 355-372.

Connelly, R., Playford, C., Gayle, V., & Dibben, C. (2016). The role of administrative data in the big data revolution in social science research. *Social Science Research*, 59, 1-12.

Dahler-Larsen, P. (2016). Surviving the routinization of evaluation. *Administration & Society*, 32, 70–92.

Feldman, M. & March, J. (1981). Information in organizations as signal and symbol. *Administrative Science Quarterly*, 26, 171-186.

Jones, B., & Baumgartner, F. (2012). From there to here. Punctuated equilibrium to the general punctuation thesis to a theory of government information processing. *Policy Studies Journal*, 40, 1–20.

Lipman, P. (2013). Economic crisis, accountability, and the state's coercive assault on public education in the USA. *Journal of Education Policy*, 28, 557-573.

Miller, D. (1993). The architecture of simplicity. *The Academy of Management Review*, 18.

Shulock, N. (1999) The paradox of policy analysis. If it is not used, why do we produce so much of it? *Journal of Policy Analysis and Management*, 18, 226–244.

Rijcke, S., Wouters, P., Rushforth, A., Franssen, T., & Hammarfelt, B. (2016). Evaluation practices and effects of indicator use—a literature review. *Research Evaluation*, 25, 161–169.

Workman, S., Jones, B., & Jochim, A. (2009). Information processing and policy dynamics. *Policy Studies Journal*, 37, 75–92.