

# **Impact of school inspections on teaching and learning.**

## **Technical report ISI-TL project year 1-3 data**

### **THE CZECH REPUBLIC**

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## **1. Sampling approach and characteristics of the collected data**

### ***1.1 Definition of target population***

Our target populations are schools serving students attending primary and lower secondary level. Due to differences in type of school and inspection we have not included selective track –multi-year gymnasium (10 % of students from lower secondary level) in our sample and they are not part of the target population then. We have also excluded special schools. Exact definition of target sample is:

- primary school = school that have at least 1 student in 4th grade, excluding special schools.
- lower secondary school = school that have at least 1 student in 8<sup>th</sup> grade, excluding special schools.

### ***1.2 Sampling model applied***

We have used probability proportional to size (PPS) sample of schools with explicit stratum for district/region where the school is located (N = 14), since we also have 14 regional offices of Czech school inspectorate. Implicit stratum therefore was the size of the school, defined as number of students in grade 4 (for primary school sample) / grade 8 (for secondary school sample).

### ***1.3 Information used in creating the school sampling frame***

Database of all schools including the region and size of the school (in respective grades as described above) from the Ministry of Education, Youth and Sports of the Czech Republic.

	Number of schools/principals	Percentage of schools/principals
Total population (total number of schools in the country)	primary: 4124 schools lower secondary:	100%
Schools not meeting inclusion criteria (considered out of scope)	primary: 643 special schools lower secondary:	15,5%
Target population	primary: 3481 lower secondary:	84,5%

#### **1.4 Explicit stratification**

For sampling frame the explicit stratification was based on location of the school in one of the 14 districts/regions. Table below specifies strata allocation in target population and sample.

	Target population	Target sample
No stratification used	primary: 3596 schools secondary: 2314 schools	primary: 174 schools secondary: 200 schools
Schools in stratification region 1	primary: 210 secondary: 188	primary: 18 secondary: 17
Schools in stratification region 2	primary: 456 secondary: 276	primary: 20 secondary: 23
Schools in stratification region 3	primary: 221 secondary: 155	primary: 9 secondary: 10
Schools in stratification region 4	primary: 194 secondary: 126	primary: 5 secondary: 6
Schools in stratification region 5	primary: 91 secondary: 72	primary: 16 secondary: 16
Schools in stratification region 6	primary: 234 secondary: 191	primary: 10 secondary: 13
Schools in stratification region 7	primary: 170 secondary: 106	primary: 8 secondary: 8
Schools in stratification region 8	primary: 233 secondary: 133	primary: 9 secondary: 12
Schools in stratification region 9	primary: 225 secondary: 128	primary: 9 secondary: 10
Schools in stratification region 10	primary: 241 secondary: 131	primary: 11 secondary: 12
Schools in stratification region 11	primary: 429 secondary: 243	primary: 19 secondary: 22
Schools in stratification region 12	primary: 266 secondary: 154	primary: 11 secondary: 12
Schools in stratification region 13	primary: 225 secondary: 135	primary: 21 secondary: 26
Schools in stratification region 14	primary: 401 secondary: 276	primary: 8 secondary: 13

## 2. Response rates and analysis of representativeness of the Czech data in 3 years data collection

### 2.1 Response rates

Numbers of returned questionnaires and Response rates for 2011, 2012 and 2013

	2011 sample		2012 sample		2013 sample		Target sample
	N	Response rate	N	Response rate	N	Response rate	N
Primary schools	56	32%	43	25%	15	9%	174
Secondary schools	69	35%	46	23%	17	9%	200
Primary + secondary schools	125	33%	89	24%	32	9%	374

For the first round of data collection the response rate was at the level around 30 % as reported in methodological literature on on-line surveys. We have used several ways of reminding notices via email, support of professional school-leaders association to raise the response rates. In 2<sup>nd</sup> and 3<sup>rd</sup> year of data collection we even used phone-call alerts to school principles. However they were unwilling to fill in the questionnaire repeatedly, that considerably lowered the response rates in consecutive years. In the table below we also present how many school principles responded to questionnaire once, twice or in all replied three waves.

Number of principles that responded repeatedly to the questionnaire

Number of respondents that responded to questionnaire	Responded only once	Responded twice	Responded in all 3 waves
Number of school principles	68	59	20

Number of schools that reported they have been inspected in previous year for each data file

	2011 data	2012 data	2013 data
Number of school inspected last year	43	22	6

## 2.2 Evaluation of the representativeness of regional coverage in 2011, 2012 and 2013 data files

Actual response rates compared to target sample and target population, according to sampling criteria – 14 regions used as an explicit stratum

	Target population	Target sample	Schools in year 1 data collection, <a href="#">year 2</a> , <a href="#">year 3</a>
No stratification used	primary: 3596 schools secondary: 2314 schools	primary: 174 secondary: 200	primary: 56 schools <b>(32% response rate)</b> secondary: 69 schools <b>(34,5% response rate)</b>
Schools in stratification region 1	primary: 210 secondary: 188	primary: 18 secondary: 17	primary: 7, <a href="#">3</a> , <a href="#">1</a> secondary: 7, <a href="#">3</a> , <a href="#">2</a>
Schools in stratification region 2	primary: 456 secondary: 276	primary: 20 secondary: 23	primary: 6, <a href="#">4</a> , <a href="#">2</a> secondary: 7, <a href="#">6</a> , <a href="#">1</a>
Schools in stratification region 3	primary: 221 secondary: 155	primary: 9 secondary: 10	primary: 3, <a href="#">3</a> , <a href="#">1</a> secondary: 5, <a href="#">4</a> , <a href="#">1</a>
Schools in stratification region 4	primary: 194 secondary: 126	primary: 5 secondary: 6	primary: 1, <a href="#">3</a> , <a href="#">0</a> secondary: 1, <a href="#">1</a> , <a href="#">1</a>
Schools in stratification region 5	primary: 91 secondary: 72	primary: 16 secondary: 16	primary: 6, <a href="#">3</a> , <a href="#">1</a> secondary: 6, <a href="#">3</a> , <a href="#">0</a>
Schools in stratification region 6	primary: 234 secondary: 191	primary: 10 secondary: 13	primary: 3, <a href="#">3</a> , <a href="#">0</a> secondary: 3, <a href="#">2</a> , <a href="#">1</a>
Schools in stratification region 7	primary: 170 secondary: 106	primary: 8 secondary: 8	primary: 3, <a href="#">3</a> , <a href="#">0</a> secondary: 3, <a href="#">2</a> , <a href="#">1</a>
Schools in stratification region 8	primary: 233 secondary: 133	primary: 9 secondary: 12	primary: 2, <a href="#">2</a> , <a href="#">0</a> secondary: 2, <a href="#">2</a> , <a href="#">1</a>
Schools in stratification region 9	primary: 225 secondary: 128	primary: 9 secondary: 10	primary: 2, <a href="#">2</a> , <a href="#">0</a> secondary: 3, <a href="#">2</a> , <a href="#">2</a>
Schools in stratification region 10	primary: 241 secondary: 131	primary: 11 secondary: 12	primary: 5, <a href="#">3</a> , <a href="#">1</a> secondary: 5, <a href="#">3</a> , <a href="#">0</a>
Schools in stratification region 11	primary: 429 secondary: 243	primary: 19 secondary: 22	primary: 5, <a href="#">4</a> , <a href="#">2</a> secondary: 8, <a href="#">6</a> , <a href="#">3</a>
Schools in stratification region 12	primary: 266 secondary: 154	primary: 11 secondary: 12	primary: 3, <a href="#">3</a> , <a href="#">2</a> secondary: 7, <a href="#">4</a> , <a href="#">3</a>
Schools in stratification region 13	primary: 225 secondary: 135	primary: 21 secondary: 26	primary: 5, <a href="#">5</a> , <a href="#">3</a> secondary: 6, <a href="#">5</a> , <a href="#">0</a>
Schools in stratification region 14	primary: 401 secondary: 276	primary: 8 secondary: 13	primary: 5, <a href="#">5</a> , <a href="#">2</a> secondary: 6, <a href="#">3</a> , <a href="#">1</a>

As the table proves the data collected in Year 1 correspond well to the regional coverage based on 14 administrative regions/districts. Principals from all the 14 region responded to the questionnaire and also the number of filled in questionnaires in each region

corresponded well to the size of the region. And even in the third year of data collection when the response rate dropped significantly, from each region at least one school principle responded to the questionnaire. So the respondents well distributed among whole republic and region may not influence the results. **Keeping in mind, that Czech School Inspectorate has different units for each of the 14 regions and they are sometimes seen as more or less innovative in their inspection work, good regional coverage proved by the data in this table is an important asset of the quality of data collected.**

### 2.3 Evaluation of the other characteristics of sample in relation to target population

Since the regional coverage was used as explicit strata in sampling, we have documented it in detail divided into primary and secondary samples. This way we have constructed the sample to follow agreed upon methodology proposed in the project. However in the Czech education system (contrary to other countries of partners in the project) the primary and lower secondary school is in one type of institution and majority of students do not transfer between these levels of education. Also the school inspection emphasizes whole school as an organization, comprising of both level of education. Therefore for any analysis of the Czech data it is highly recommended to use overall data file with no comparison of primary and secondary, since these are actually schools with no difference. Only for purposes of the project, to separate samples have been drawn based on size of the targeted school population in either grade 4 or 8 (see part 1.1). Also other characteristics of the schools that we were able to get from the national databases and other sources have been analysed on complete datasets. We compare proportions of various characteristics of the school in target population and each year samples.

#### School size (pupils intake)

No of pupils in school	Target population	2011 data	2012 data	2013 data
Les then 250	20%	22 %	21 %	15 %
251-350	18 %	14 %	16 %	20 %
351-450	15 %	20 %	18 %	23 %
451-550	22 %	20 %	19 %	17 %
551-650	14 %	13 %	16 %	19 %
More then 650	11%	11 %	10 %	6 %

#### Private and public schools:

	Target population	2011 sample	2012 sample	2013 sample
Public schools	97 %	96,8 % (N = 121)	97,8 % (N = 87)	100 %
Private and denominational/church schools	3 %	3,2% (N = 4)	2,2% (N = 2)	0 %

**Also based on the comparison of the size of the school (total student intake) and whether the school is private or denominational, the data gathered represent all categories of target population in respect to these two categories and also the proportions are in right balance. Only year 3 data collection (2013 sample) with very low response rates deviate from the proportions in categories in target population.**

With respect to additional data we have been able to get about the schools from which principles responded to our questionnaire, we could see that data even with lower response rate well represent categories of schools in relation to its regional coverage, school size and type of school provider (public/private). This holds true for data collected in year 1 and 2.

### **3. Data analysis and findings**

Due to low response rates in Year 3 data collection, we report in this part mainly data from year 1 and 2 for which we have proved above to have a quite good coverage. Where analysis allows, year 3 data are included in overall combined datasets of all three years, or results of analyses are reported shortly.

#### **3.1 Descriptive statistics**

Recent OECD report on the evaluation and assessment in education in the Czech Republic (Santiago, 2012) noted in evaluation of Czech school inspection that "...currently external school evaluation tends to emphasise compliance with legislation rather than the promotion of school improvement" (Santiago, 2012, p. 11)

The report also recommended:

"...the external school evaluation process should strengthen its focus on school improvement and move away from the current "compliance" driven model. This would imply providing advice for improvement to all schools evaluated, rather than just focusing on lower performing schools." (Santiago, 2012, p. 11)

Findings of the OECD expert team based on interviews with various stakeholders is also confirmed by the descriptive from our research data collection and in comparison to other countries and their inspection system Czech school inspection seems to be an outlier case.

Percentage of school principles that strongly agreed or agreed with the following statement  
(Year 1 data)

	CZE	IRL	NED	AUT	SWE
The feedback provided to the school during the last inspection visit was insightful	61%	73%	72%	75%	60%
The feedback received from the school inspectors was useful	54%	85%	83%	72%	83%
Overall, the inspection process is a worthwhile exercise	42%	76%	71%	56%	80%
Written inspection reports are helpful in identifying areas for improvement in the school	35%	82%	71%	66%	86%
The Inspectorate identified additional weaknesses that the school had not identified	15%	35%	21%	32%	35%
Preparation for school inspection is mainly about putting protocols and procedures in writing that are in place in the school and gathering documents and data.	82%	37%	52%	46%	79%

This data could be also supported by various quotes from interviews with school heads, were often they openly clarify inspection is mainly about putting papers in order and checks of compliance with rules and legislation, rather than an effort for improvement. This is now being the main discussion about the move of the mission of Czech school inspection, that newly elected Chief school inspector since October 2013 is declaring (Greger and Simonová 2014). From that point of view, it will be useful to repeat the questionnaire after few years to see, if changes have been reflected also by school principles. Further analysis presented in other parts however shows, that inspection has a rather low impact on school improvement till date.

### 3.2 Differences in Scale Averages for Year 1 and 2 – Czech Republic

First we analysed reliability of the scales used in our conceptual model and we are looking for differences between year 1 and 2 (year three low response rate does not enable to run this analyses). Mean scores and realibility of the scales is presented in following table:

Scale	Year 1 (2011)				Year 2 (2012)			
	Cronbach's Alpha	No. of items	Mean score	N Year 1	Cronbach's Alpha	No. of items	Mean score	N Year 2
Capacity Building	0.627	6	4.5	125	0.594	6	4.5	89
Improvement in Capacity Building	0.786	11	3.4	125	0.754	11	3.4	89

Improvement in Teacher Participation in Decision Making	0.565	4	3.6	125	0.554	4	3.5	89
Improvement in Teacher Cooperation	0.704	2	3.4	125	0.691	2	3.4	89
Improvement in Transformational Leadership	0.645	2	3.4	125	0.494	2	3.3	89
Promoting Self-Evaluations	0.862	3	3.3	125	0.860	3	3.3	89
School effectiveness	0.503	5	4.1	125	0.45	5	4.0	89
Improvement in School Effectiveness	0.803	10	3.4	118	0.832	12	3.5	89
Improvement in Opportunity to Learn	0.637	3	3.3	125	0.499	3	3.3	89
Improvement in Assessment of Students	0.751	2	3.3	120	0.950	2	3.5	89
Improvement in Assessment of School	0.705	2	3.4	118	0.945	2	3.8	89
Improvement in Clear and Structured Learning	0.771	3	3.6	125	0.701	3	3.5	89
Change in School Effectiveness	0.803	12	3.4	118	0.832	12	3.5	89
Accepting feedback	0.908	4	3.6	43	0.902	4	3.5	22
Setting expectations	0.879	6	3.4	43	0.791	6	3.3	22
Stakeholders sensitive to reports	0.843	3	2.9	43	0.839	3	2.9	22
Unintended responses	0.630	5	2.3	43	0.626	5	2.5	22
Inspection measures	NA	NA	NA	NA	0.56	10	1.4	22
Feedback on capacity building	NA	NA	NA	NA	0.243	4	1.4	22
Feedback on effective school and teaching conditions	NA	NA	NA	NA	0.522	5	1.3	22

From the values of means for scales in Y1 and Y2 the results prove to be very stable, and also use of t-test confirmed there is no change in these scales between Y1 and Y2. It corresponds to findings from the interviews, when school principals refer to little impact of school inspection on their work. We have computed also scales for 3<sup>rd</sup> year data collection, but due to very low response rate we do not report them separately. There has been change however this is attributable to sampling error and shall not be interpreted separately.



### 3.3 Differences between inspected and non-inspected schools

We also used independent samples T-test to analyse for differences between schools that have been inspected in past 12 months and those schools that have had no inspection visit. However data for Y2 with biggest response rate show no difference between responses to any of the scales constructed and reported above. **We could thus summarise, that having inspection visit in schools or not does not differentiate principals reporting significantly in Year 1 data.** No differences in any of the scales between inspected and non-inspected school were found even in Y2 data.

**Only for Year 3 data analysis revealed statistically significant and positive difference in favour of inspected school** in case of following scales: School Effectiveness, Accepting Feedback, Feedback on Capacity building and Feedback on Effective school. However this could be also the reason of low response rates and little representativeness of data from third round.

#### References:

Greger, D. and Simonová, J. *School inspection in the Czech Republic: A critical reflection on intended effects and causal mechanisms*. Available at: <http://schoolinspections.eu/czech-republic/conceptual-model/>

Santiago, P., et al. (2012). *OECD Reviews of Evaluation and Assessment in Education: Czech Republic 2012*. Paris: OECD Publishing. <http://dx.doi.org/10.1787/9789264116788-en>