

**LPSA Expert Working Group on Europe & Central Asia**

**Decentralization and Regional Development:  
Measuring Impact, Designing Policy Options**

**September 11, 2024**

**MEASURING STANDARD EXPENDITURE NEEDS  
AND LEVELS OF OUTPUT:  
ITALIAN AND LITHUANIAN EXPERIENCES**

Vieri Ceriani

Danilo Ballanti

Francesco Porcelli



# Standard Expenditure Needs in Italy (1)

## Background

- In 2009-2010 a reform of fiscal federalism took place
- Municipalities already had quite large tax autonomy (since 1998)
  - Real estate tax
  - Municipal personal income tax (as a surtax on national PIT)
  - On both taxes the rate could be manoeuvred around the standard national rate
- Grants from the State were determined according to past legislation and practices, with no precise connection to the actual needs
- The reform intended to introduce an estimation system for the expenditure needs, and upon them build an equalisation system



# Standard Expenditure Needs in Italy (2)

## A tentative approach

- The «ministerial» approach
  - Calculate average per-capita expenditures for the various functions performed by the municipalities
  - Correct them through the addition of cost variables, weighted with «a priori» parameters
- Shortcomings of the «ministerial» approach
  - Technical level: too few additional variables considered; parameters were poorly founded, no cluster analysis and methodologies were obscure
  - Institutional-political level: no involvement of municipalities



# Standard Expenditure Needs in Italy (3)

## The actual approach

### Technical level

- Collect a large number of variables
- Calculate parameters using statistical methodologies
  - Cluster analysis
  - Regression of cost and expenditure functions

### Institutional-political level

- The methodology and the calculation of the expenditure needs was devolved to technical «third party»: SOSE (a company owned and controlled by the Italian Ministry of Economy and Finance) and IFEL (Association of Municipalities)
- Endorsement of the methodologies and of the results by a special Commission (including representatives of Ministries and of municipalities)
- Opinion of Parliament (Committee on Fiscal Federalism)
- Entry into force: a Decree of the President of the Council of Ministers



# Standard Expenditure Needs in Italy (4)

## The actual approach

SOSE elaborated and implemented a system for the evaluation of Standard Expenditure Needs of Italian Local Governments, with the goal of distributing intergovernmental funds in an equitable and transparent way.

...in a shared process with

Institutions



MINISTRY OF ECONOMY AND FINANCE



IFEL REPRESENTING THE MUNICIPALITIES



UPI REPRESENTING THE PROVINCES



ITALIAN NATIONAL INSTITUTE OF STATISTICS



# Standard Expenditure Needs in Italy (5)

## The procedural steps

- Technical level
  - Identification of the functions performed by municipalities and their organizational setting
  - Identification of the relevant variables (cost function model and support from local experts)
  - Collection of data (official data and special questionnaire)
  - Selection of the clusters
  - Estimate parameters of expenditure through regression analysis
- Institutional-political level
  - Endorsement of the methodologies and of the results by the special Commission
  - Opinion of Parliament (Committee on Fiscal Federalism)
  - Decree of the President of the Council of Ministers



# Standard Expenditure Needs in Italy (6)

## The equalisation process

- Calculation of standard expenditure needs (SEN)
- Calculation of standard fiscal capacity (SFC)
  - Revenues attainable from the own taxes, at standard rates
- Fiscal Gap = difference between SFC and SEN
- Calculation of the equalisation subsidies based on the fiscal gap
- Determination of grants to municipalities
  - Transitional period (2015-2030) as a weighted average of historical needs and equalisation subsidies



# Standard Expenditure Needs in Italy (7)

## The indicators of performance

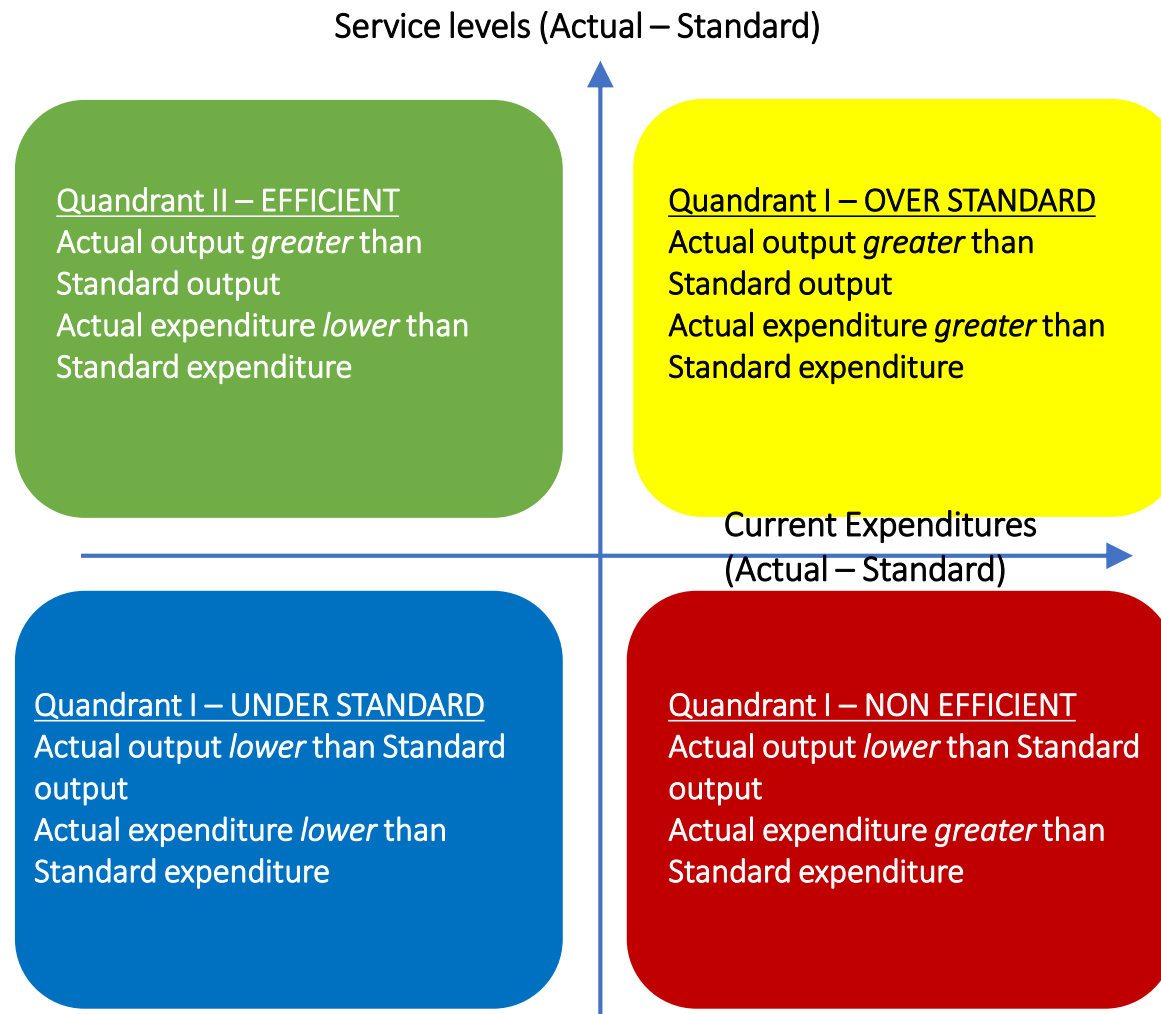
- Calculation of standard expenditure needs (SEN)
- Calculation of standard level of outputs (SLO)
- Determination of *expenditure gap* (historical expenditures - SEN)
- Determination of *output gap* (historical outputs - SLO) local
- Mapping each municipality into a four quadrants model
- Assessment of the performance of each municipality





# Performance analysis

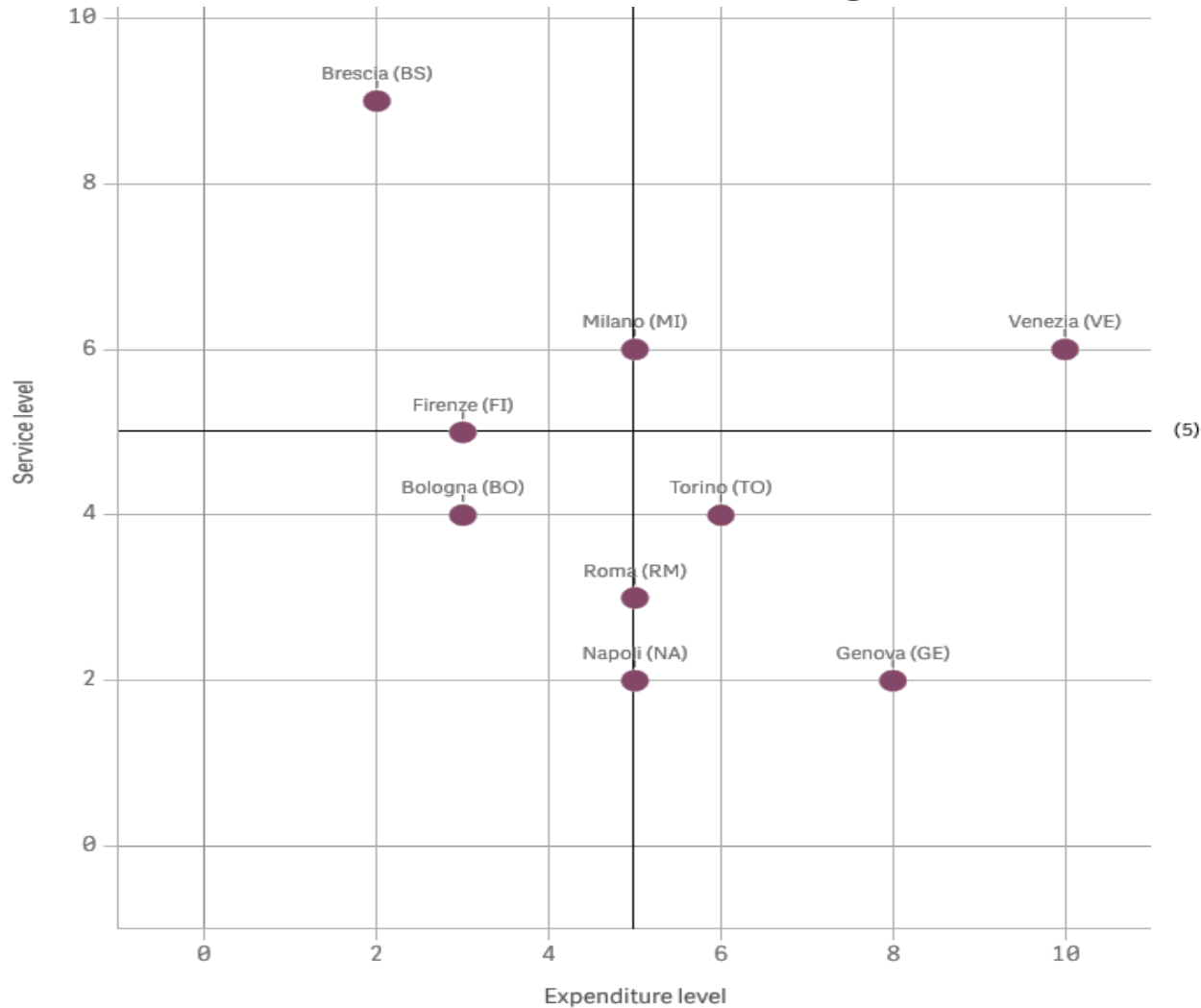
## Segmentation of municipalities in four quadrants





# Performance analysis of Italian municipalities

## Function: Waste Management





# Open Civitas

Standard expenditure needs analysis of performance of municipalities in Italy are available on-line at:



Online publication of municipal data on expenditures and performances in the provision of public services

Open access to all citizens

Open data

More information for local administrations

Stimulating higher electoral accountability and citizens' participation



2018 Previous years REMOVE SELECTION

The elaborations, starting from 2017, are not always comparable between the different years as a result of methodological changes that have affected some functions. The changes are reported in the methodological notes published in the project section.

Select a municipality or an aggregate	Select a municipality or an aggregate	Select a municipality or an aggregate	Select a municipality or an aggregate
<b>Municipality of Roma (RM)</b>  <b>Total of Functions</b> Population 31/12/2018 2.820.219 Historical expenditure € 2.996.931.208 Standard expenditure € 2.815.410.309 Difference € € +181.520.899 Difference % +6,45% Expenditure level (7,00) Level on 0:10 scale Service level (6,00) Level on 0:10 scale	<b>Municipality of Milano (MI)</b>  <b>Total of Functions</b> Population 31/12/2018 1.395.980 Historical expenditure € 1.458.470.702 Standard expenditure € 1.331.503.660 Difference € € +126.967.042 Difference % +9,54% Expenditure level (7,00) Level on 0:10 scale Service level (8,00) Level on 0:10 scale	<b>Municipality of Napoli (NA)</b>  <b>Total of Functions</b> Population 31/12/2018 954.318 Historical expenditure € 740.407.337 Standard expenditure € 805.389.681 Difference € € -64.982.344 Difference % -8,07% Expenditure level (4,00) Level on 0:10 scale Service level (4,00) Level on 0:10 scale	<b>Municipality of Torino (TO)</b>  <b>Total of Functions</b> Population 31/12/2018 860.793 Historical expenditure € 808.820.963 Standard expenditure € 784.059.231 Difference € € +24.761.732 Difference % +3,16% Expenditure level (6,00) Level on 0:10 scale Service level (6,00) Level on 0:10 scale

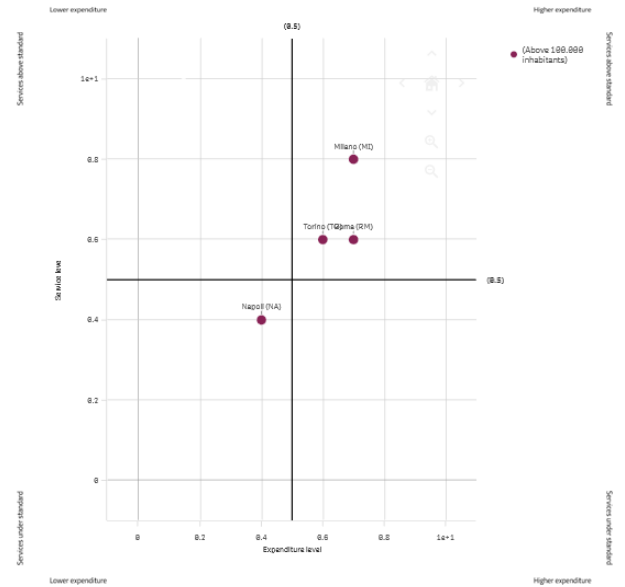
Indicator - Total of Functions

Indicator	▲	□	Comune di Roma (RM)	Comune di Milano (MI)	Comune di Napoli (NA)	Comune di Torino (TO)
Standard expenditure - Euro per inhabitant			998,29	953,81	843,94	919,86
Standard expenditure - Euro			2.815.410.309,49	1.331.503.659,90	805.389.681,12	784.059.230,91
Historical expenditure - Euro per inhabitant			1.062,66	1.044,76	775,85	939,62
Historical expenditure - Euro			2.996.931.208,19	1.458.470.701,99	740.407.336,88	808.820.963,26
Historical vs Standard service level - X			4,94	22,92	-11,89	1,22
Average labour cost - Euro per employee			44.358,47	43.744,93	42.260,59	42.282,28
Average labour cost - Euro per inhabitant			376,74	453,45	311,75	447,32

2018 Previous years REMOVE SELECTION

Municipality or aggregate

- Milano (MI) ✓
- Napoli (NA) ✓
- Torino (TO) ✓
- Roma (RM) ✓
- Italia
- Abruzzo
- Basilicata
- Calabria
- Campania
- Emilia Romagna
- Lazio
- Liguria
- Lombardia
- Marche
- Molise
- Piemonte
- Puglia



Municipalities are visualised only if they are assessable in terms of expenditure and services provided.

Municipalities are positioned in four quadrants based on the expenditure level and the quantity of services provided. Aggregating the two dimensions:

- Municipalities in the lower right quadrant record a historical expenditure higher than standard and offer a lower service level than the average of municipalities with the same number of inhabitants. On the opposite side, municipalities in the top left quadrant record a historical expenditure lower than the standard and a service level higher than the average of municipalities with the same number of inhabitants.
- Municipalities in the lower left quadrant record a historical expenditure lower than the standard and a service level lower than the municipalities with the same number of inhabitants. On the opposite side, municipalities in the top right quadrant record a historical expenditure higher than the standard and a service level higher than the average of municipalities with the same number of inhabitants.



# Standard Expenditure Needs in Lithuania (1)

## Background

- In 2018, the Lithuanian government requested support from the European Commission under Regulation (EU) 2017/825 (Structural Reform Support Programme), in order to introduce an **equalisation system for municipalities**
- Following the request, the European Commission considered several options and selected SOSE to deliver the requested technical support
- From December 2018, SOSE worked in strict cooperation with the Lithuanian authorities and under the supervision of the Structural Reform Support Service of the European Commission (now DG Reform)
- The final report was delivered in December 2020 and is available at:

[https://ppplietuva.lt/uploads/documents/files/Projekto%20ataskaita\\_Savivaldybiu%20paskoly%20restrukturizavimas%20ir%20efektyvaus%20turto%20valdymo%20priemoniu%20sukurimas.pdf](https://ppplietuva.lt/uploads/documents/files/Projekto%20ataskaita_Savivaldybiu%20paskoly%20restrukturizavimas%20ir%20efektyvaus%20turto%20valdymo%20priemoniu%20sukurimas.pdf)



# Standard Expenditure Needs in Lithuania (3)

## Procedural steps

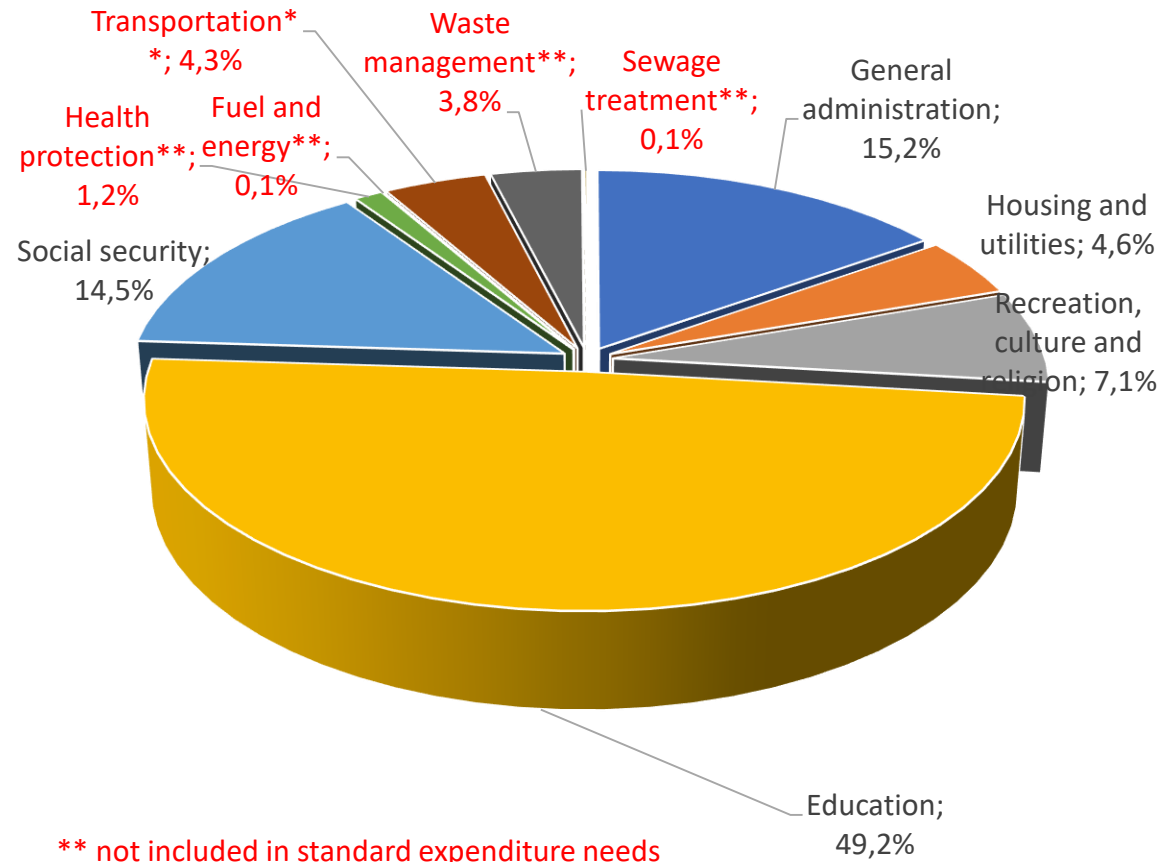
1. Definition of the services to be analysed
2. Definition of the dataset and collection of data
3. Definition of the methodology and estimation of SEN
4. Calculation of the standard level of output (SLO)
5. Determination of the *expenditure gap* (historical expenditures – SEN)
6. Determination of the *output gap* (historical outputs – SLO) local
7. Assessment of the performance of each municipality
8. Calculation of standard fiscal capacity
9. Calculation of fiscal gaps and analysis of the results
10. Policy scenarios for future reform of the Lithuanian intergovernmental fiscal relations and the fiscal equalisation system
11. Technical/Econometrics training of Lithuanian officials



# Standard Expenditure Needs in Lithuania (5)

Procedural steps: Definition of the services estimated

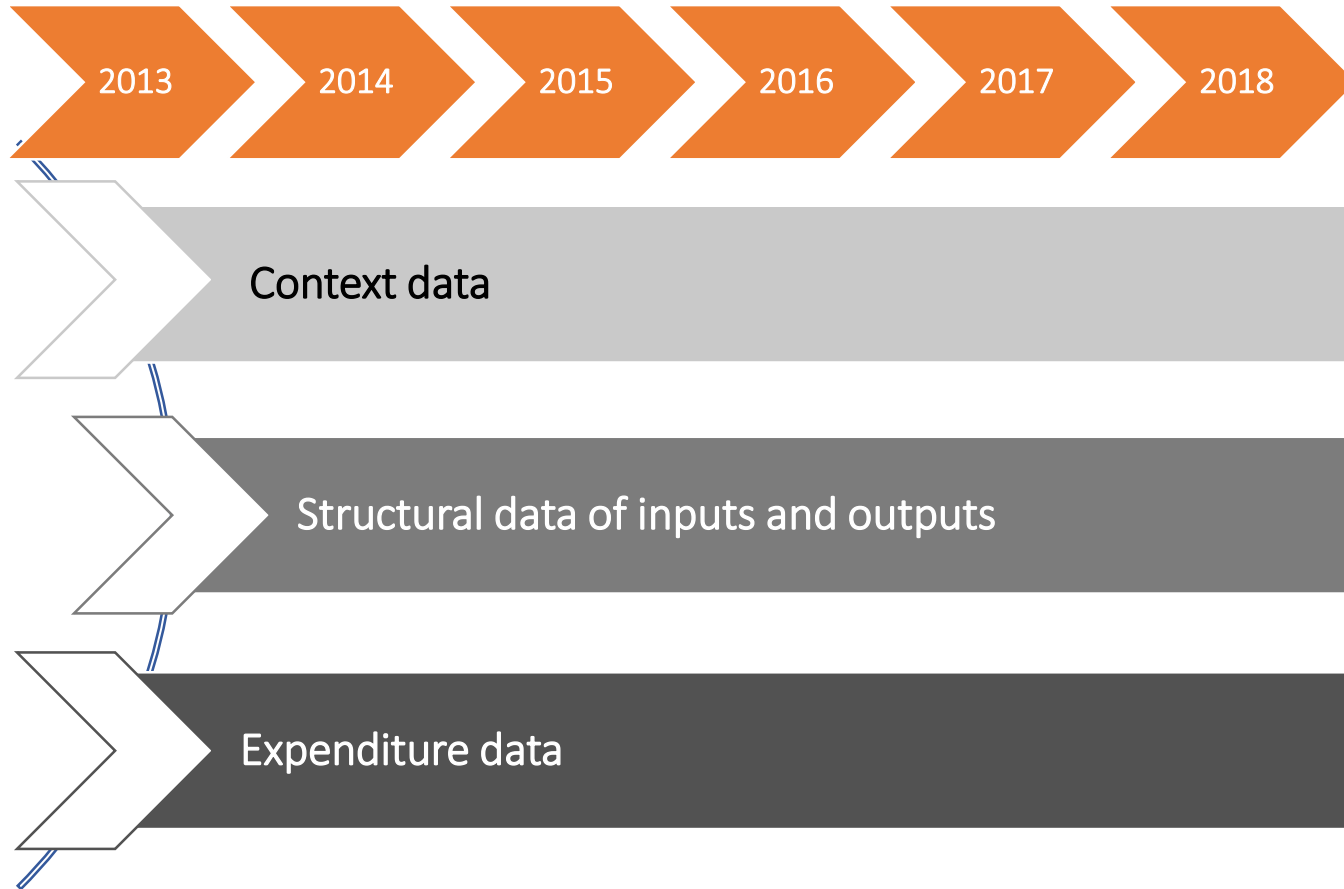
- GENERAL STATE SERVICES (incl. part of defence, public procedure and public protection, economy, environmental protection)
- HOUSING AND UTILITIES
- RECREATION, CULTURE AND RELIGION
- EDUCATION
- SOCIAL SECURITY





# Standard Expenditure Needs in Lithuania (7)

## Data by Municipality







# Standard Expenditure Needs in Lithuania (8)

## Overall Database



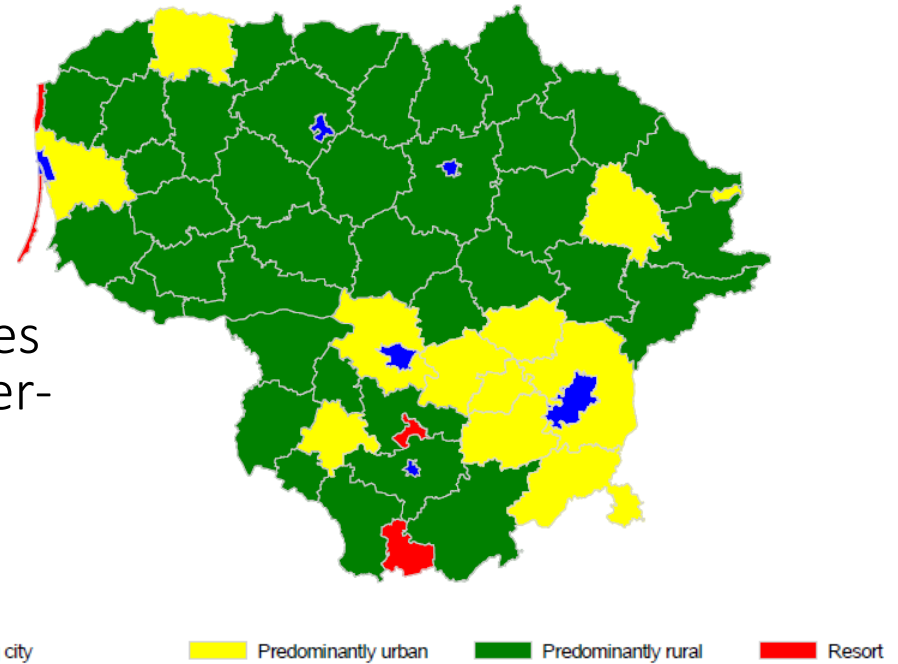
VARIABLE CATEGORY	NUMBER OF VARIABLES
Context variable	176
Expenditure (Balance sheet)	225
Expenditure / input (Balance sheet)	68
Other Expenditure (input or output)	24
Input	83
Output	74
Output / quality	34
Life Quality Index	7
CLUSTER	1
REVENUES	42
QUESTIONNAIRE	72
TOTAL	806



# Standard Expenditure Needs in Lithuania (16)

## Procedural steps: Definition of the clusters

- Cluster analysis identifies homogeneous groups, using all available variables
- Minimizes the differences between municipalities in the same cluster (intra-cluster variance) and maximizes the difference between clusters (inter-cluster variance)
- In the end 4 clusters identified:
  - Big cities (6)
  - Predominantly urban (12)
  - Predominantly rural (38)
  - Resort (4)





# Standard Expenditure Needs in Lithuania (17)

Performance of the municipalities (four quadrants model)

Function: Education

Output score	Expenditure score										Total
	1	2	3	4	5	6	7	8	9	10	
10							1		1		2
9								1	2	1	4
8			2			1		5	3	1	12
7			1		1		1	1			4
6								2			2
5			1	1							2
4			2	2			1	2			7
3		4	4	2	1	1	2	4			18
2	1		4				1	1			7
1	1	1									2
Total	2	5	14	5	2	2	6	16	6	2	60



# Standard Expenditure Needs in Lithuania (18)

Performance of the municipalities (clusters)

Function: education

## Big cities

Performance	Number
Efficient	
Non efficient	
Over Standard	6
Under standard	

## Predominantly urban

Performance	Number
Efficient	1
Non efficient	2
Over Standard	5
Under standard	4

## Predominantly rural

Performance	Number
Efficient	3
Non efficient	8
Over Standard	7
Under standard	20

## Resort

Performance	Number
Efficient	
Non efficient	2
Over Standard	2
Under standard	