



# SUBNATIONAL LEVEL VARIATION IN EDUCATION INDICATORS IN OECD COUNTRIES

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## Introduction: the relevance of distribution

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- From national *averages* for benchmarking to focus on *distribution* for policy-making
- Among the relevant criteria of distribution, *regional variation* certainly is one of the most important
- Necessity of *inclusive* growth and development
- Methodological implications for OECD surveys: sampling, costs, data collection
- For example: PISA
- New work in INES



# Regional differences in PISA 2012 Math scores

Country/Region	Score	Country/Region	Score	Country/Region	Score
<i>Shanghai-China</i>	613	<b>Finland</b>	519	<i>Connecticut (United States)</i>	506
<b>Singapore</b>	573	<b>Canada</b>	518	<b>Austria</b>	506
<i>Hong Kong-China</i>	561	<i>Australian capital territory</i>	518	<i>Basque Country (Spain)</i>	505
<i>Chinese Taipei</i>	560	<b>Poland</b>	518	<b>Australia</b>	504
<b>Korea</b>	554	<i>Lombardia (Italy)</i>	517	<i>Madrid (Spain)</i>	504
<i>Macao-China</i>	538	<i>Navarre (Spain)</i>	517	<i>Queensland (Australia)</i>	503
<b>Japan</b>	536	<i>Western Australia</i>	516	<i>La Rioja (Spain)</i>	503
<b>Liechtenstein</b>	535	<b>Belgium</b>	515	<b>Ireland</b>	501
<b>Switzerland</b>	531	<b>Germany</b>	514	<b>Slovenia</b>	501
<i>Flemish community (Belgium)</i>	531	<i>Massachusetts</i>	514	<i>Victoria (Australia)</i>	501
<i>Trento (Italy)</i>	524	<b>Viet Nam</b>	511	<i>Emilia Romagna (Italy)</i>	500
<i>Friuli Venezia Giulia (Italy)</i>	523	<i>German-speaking community (Belgium)</i>	511	<b>Denmark</b>	500
<b>Netherlands</b>	523	<i>New South Wales</i>	509	<b>Italy</b>	485
<i>Veneto (Italy)</i>	523	<i>Castile and Leon (Spain)</i>	509	<b>Spain</b>	484
<b>Estonia</b>	521	<i>Bolzano (Italy)</i>	506	<b>United States</b>	481



# Indicators of Educational Systems (INES) Project on Subnational-level Indicators

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- Regional governments play the primary decision-making role in federal countries such as Canada, Germany, and the United States.
- But also huge interest in non-federal countries.
- Utility of EAG enhanced when regional policy makers can compare to national and sub-national data from other countries.
- In global economy, need to monitor potential disparities in sub-national units, and identify world class systems.



## Statistics on percentages of 25- to 34-year-olds with tertiary education (table A1.3a)

Statistic	OECD	Canada	Germany	United States
Lowest value	17.4	28.0	17.0	28.6
Highest value	65.0	64.0	35.0	71.0
Ratio of highest to lowest value	3.7	2.3	2.1	2.5
Mean	37.8	56.0	26.0	40.2
Standard deviation	11.2	8.8	5.2	7.8

**OECD:** 17 percent in Turkey to 65 percent in South Korea.

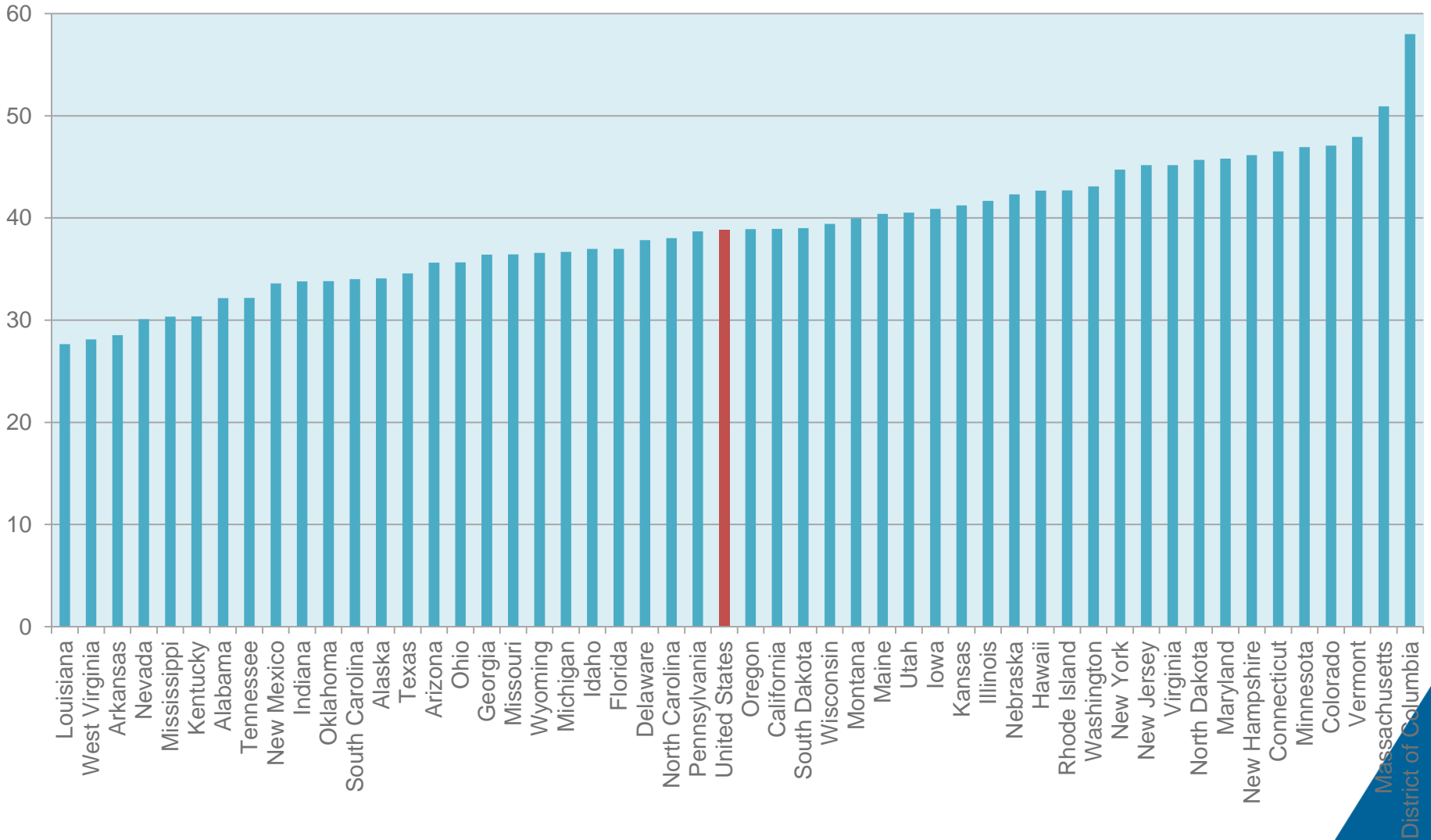
**United States:** 29 percent in Nevada to 71 percent in Washington.

**Canada:** 28 percent in Nunavut to 64 percent in Ontario.

**Germany:** 17 percent in Sachsen-Anhalt to 35 percent in Berlin.

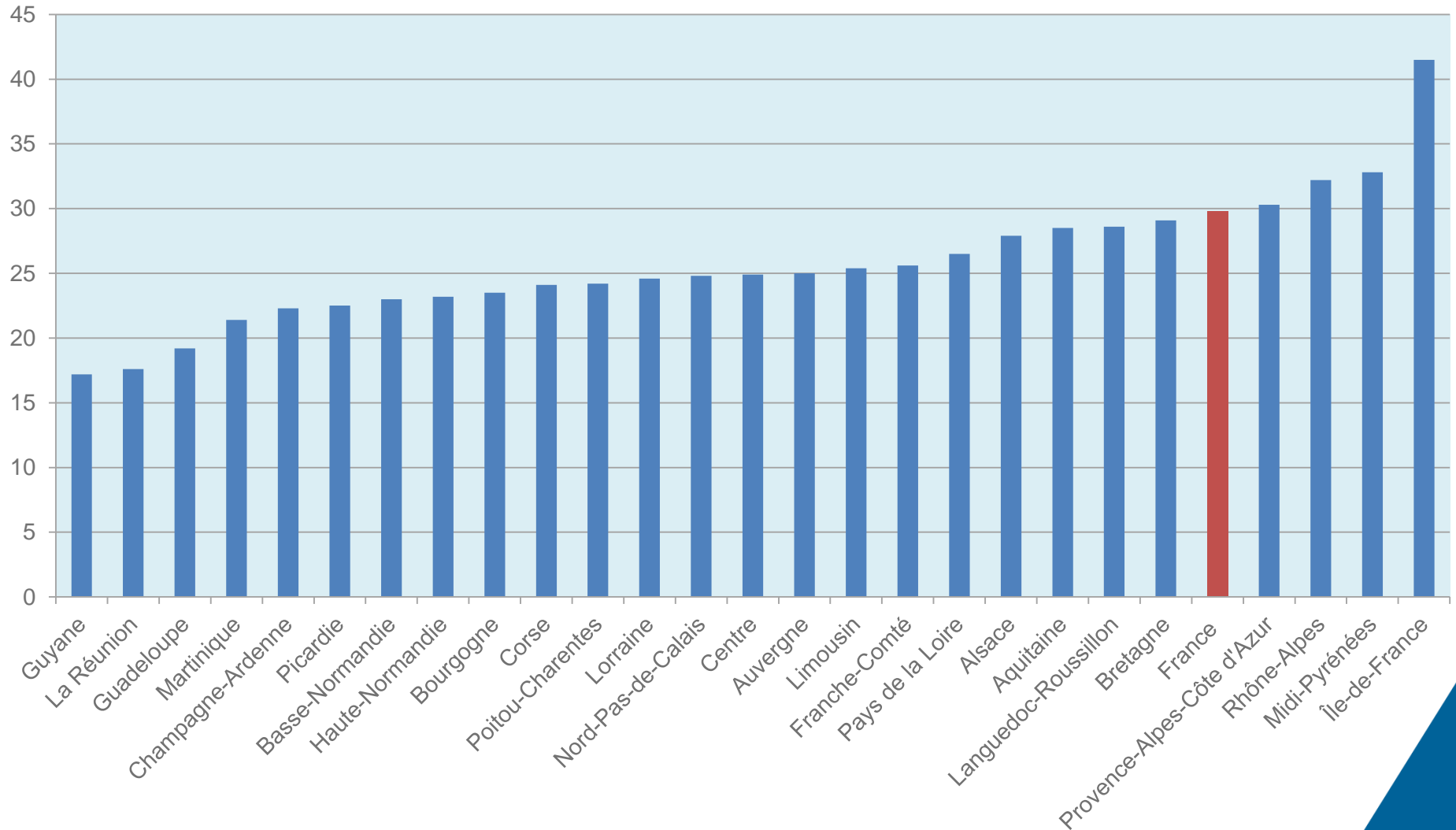


# Percentage of population 25-64y old who has attained tertiary education in the USA (2011)





# Percentage of population 25-64y old who has attained tertiary education in France (2011)





## Statistics on employment rates of 25- to 64-year-olds with ISCED 2 education (table A7.1b)

Statistic	OECD	Canada	Germany	United States
Lowest value	31	43	---	31
Highest value	77	69	---	70
Ratio of highest to lowest value	2.4	1.6	---	2.3
Mean	59	60	---	51
Standard deviation	10.5	6.6	---	7.5

**OECD:** 31 percent in the Slovak Republic to 77 percent in Portugal.

**United States:** 31 percent in the Washington to 70 percent in Wyoming.

**Canada:** 43 percent in Newfoundland and Labrador to 69 percent in Saskatchewan.





## Statistics on employment rates of 25- to 64-year-olds with ISCED 3 education (table A7.1b)

Statistic	OECD	Canada	Germany	United States
Lowest value	57	61	44	59
Highest value	83	88	68	80
Ratio of highest to lowest value	1.5	1.4	1.5	1.4
Mean	73	72	60	68
Standard deviation	5.7	6.3	2.2	4.6

**OECD:** 57 percent in Turkey to 83 percent in the Netherlands.

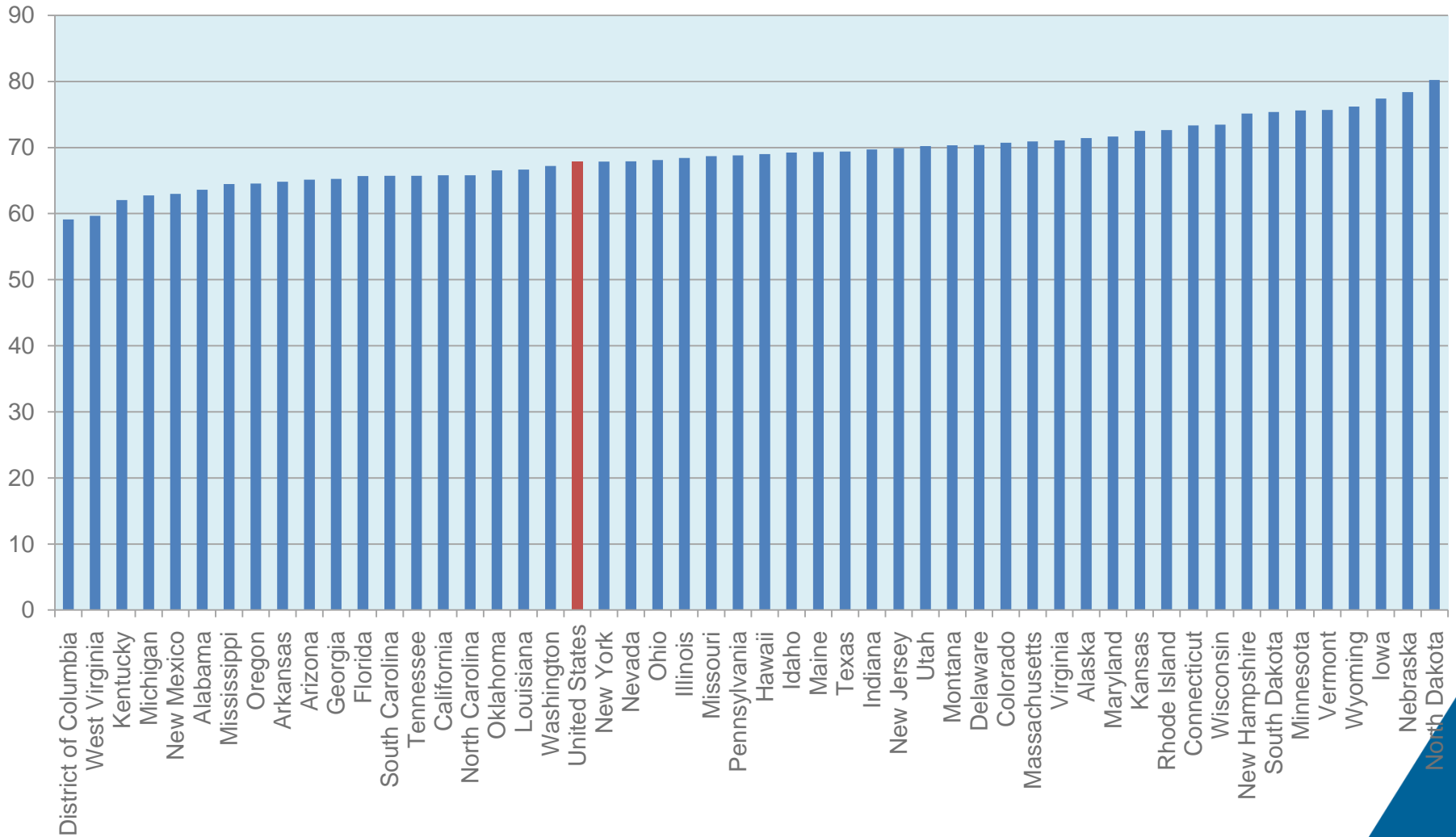
**United States:** 59 percent in the Washington to 80 percent in North Dakota.

**Canada:** 61 percent in Newfoundland and Labrador to 88 percent in the Northwest Territories.

**Germany:** 44 percent in Saarland to 68 percent in Hamburg and Mecklenburg-Vorpommern.



# Employment rates for 25-64 year-olds in the USA, ISCED 3 (2011)





## Statistics on enrollment rates of 3- and 4-year-olds (table C1.1a)

Statistic	OECD	Canada	Germany	United States
Lowest value	10.3	---	84.0	31.0
Highest value	100.0	---	96.8	73.4
Ratio of highest to lowest value	9.7	---	1.2	2.4
Mean	71.9	---	92.4	47.7
Standard deviation	24.9	---	3.7	8.2

**OECD:** 10.3 percent in Turkey to about 100 percent in France.

**United States:** 31.0 percent in Nevada to 73.4 percent in Washington.

**Germany:** 84.0 percent in Hamburg to 96.8 percent in Rheinland-Pfalz.



## Statistics on enrollment rates of 15- to 19-year-olds (table C1.1a)

Statistic	OECD	Canada	Germany	United States
Lowest value	53.8	---	81.0	81.7
Highest value	95.7	---	100.0	91.2
Ratio of highest to lowest value	1.8	---	1.2	1.1
Mean	82.9	---	89.5	87.5
Standard deviation	9.3	---	7.3	2.2

**OECD:** 53.8 percent in Mexico to 95.7 percent in Ireland.

**United States:** 81.7 percent in West Virginia to 91.2 percent New Jersey.

**Germany:** 81.0 percent in Sachsen-Anhalt and 100.0 percent in Bremen.



## Statistics on rates of 15- to 19-year-olds not in education and not in labor force (table C5.2a)

Statistic	OECD	Canada	Germany	United States
Lowest value	1	3	1	1
Highest value	22	18	2	9
Ratio of highest to lowest value	21.5	6.9	1.6	6.7
Mean	5	5	2	5
Standard deviation	5.1	4.0	0.3	1.8

**OECD:** 1 percent in Slovenia to 16 percent in Mexico, 21 percent in Turkey, and 22 percent in Israel.

**Canada:** 3 percent for Prince Edward Island and New Brunswick to 18 percent in Nunavut.

**United States:** 1 percent in Vermont to 9 percent in West Virginia.

**Germany:** 1 percent in Bayern to 2 percent in Hessen (many Länder missing).



# INES Survey: Respondents and General Summary

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- 24 Respondents
  - Australia, Austria, Belgium (Flemish), Belgium (French), Canada, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Japan, Korea, Mexico, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States
- Results indicate:
  - Significant interest in sub-national comparisons
  - Many countries unsure of the best approach
  - Concerns about resources required
  - More discussion and elaboration of alternative approaches necessary before making a final decision on approach



# INES Survey: Data Availability

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- Out of 24 responding countries:
  - 21 countries reported that sub-national units oversaw education activities of some type
  - 22 countries reported that sub-national data were collected
  - 21 countries publicly release sub-national data
    - Population (21 countries)
    - Educational attainment (20 countries)
    - Enrollment (22 countries)
    - Other topics (20 countries)
  - 14 countries released at least some sub-national data in English




## INES Project follow-up

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- Pilote INES subnational site:  
<http://nces.ed.gov/surveys/AnnualReports/oecd/>
- New OECD findings on subnational regions:  
<http://www.oecd.org/newsroom/poorer-regions-falling-behind-in-advanced-economies.htm>
- Box in *Education at a Glance 2014* indicator A1 on educational attainment





### **Box A1.1. Policy relevance of sub-national comparisons**

The main purpose of *Education at a Glance* is to provide an authoritative compilation of key international comparisons of education statistics. While countries attain specific values in these comparisons, readers should not assume that countries themselves are homogeneous. The country averages include significant variations among sub-national jurisdictions, much as the OECD average encompasses a variety of national experiences.

In most OECD countries, at least some education policy decisions are made by sub-national government authorities, while national decisions may affect sub-national entities differently. In some countries, the structure of the education system and the relatively small geographic expanse may limit the policy relevance of sub-national comparisons. In countries with federal education systems, sub-national governments have the primary role for managing education programmes; even in countries with more centralised education systems, sub-national education authorities may have specific administrative responsibilities. It is not surprising, then, that large federal countries, such as Canada, Germany and the United States, in which education is largely controlled by regional authorities, might have large internal variations in education measures. But, many other countries with centralised education systems, such as France and Italy, have substantial variations within their countries as well. The proportion of 25-34 year-olds with a tertiary degree in the United States in 2011 ranged from a low of 29% in the state of Nevada to a high of 71% in the District of Columbia (treated by the United States as a state for statistical purposes). In Canada, the proportion of 25-34 year-olds in 2010 who attained tertiary education ranged from 28% in Nunavut to 64% in Ontario. In Germany, the proportion of 25-34 year-olds with tertiary education ranged from 20% in Sachsen-Anhalt to 38% in Berlin.

Although France has a national education system, there is still a substantial variation in tertiary attainment across regions. The percentage of 25-34 year-olds with a tertiary degree ranged from a low of 19% in Guyane to a high of 55% in Île-de-France. The tertiary attainment of 30-34 year-olds in Italy in 2011 ranged from a low of 15% in Campania to a high of 27% in Puglia [Apulia], based on data compiled for the European Union by Eurostat. The tertiary attainment rates for 30-34 year-olds in the United Kingdom ranged from 32% in Merseyside to 69% in Inner London. Examples of countries with large differences in tertiary education attainment rates (i.e. more than double) among 30-34 year-olds in sub-national regions include Greece, Hungary, Portugal, the Slovak Republic, Spain, and Turkey. OECD countries with smaller ranges include Austria, Finland, Ireland, Norway, Poland, Slovenia, Sweden and Switzerland.

Other types of education statistics show substantial sub-national variations as well, including those preceding the tertiary level of attainment. In some countries, the proportions of 15-19 year-olds enrolled in secondary school or tertiary education varied widely among sub-national units in 2011. For example, the enrolment rates for 15-19 year-olds in sub-national areas ranged from 58% to 87% in Italy, from 70% to 95% in Spain, and from 71% to 95% in Portugal. While still significant, the ranges were smaller in such countries as France (69% to 88%), the United Kingdom (71% to 88%), and the United States (82% to 91%). Some countries had small sub-national differences in enrolment rates for 15-19 year-olds, including Norway (84% to 92%) and Sweden (87% to 88%).



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**Thank you !**

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