OECD
PIAAC: Programme for the International Assessment of Adult Competencies
Summary of the Survey Results for Japan

From August 2011 to February 2012, Japan participated in the Programme for the International Assessment of Adult Competencies (PIAAC) conducted by the Organization for Economic Cooperation and Development (OECD). OECD released the results from the survey on October 8th, 2013. This document describes an overview of the survey results in Japan. The details of the survey in Japanese will be published by the National Institute for Educational Policy Research (NIER).

1. WHAT IS OECD PIAAC

- The Survey of Adult Skills (PIAAC) assesses the proficiency of adults from age 16 onwards in literacy, numeracy and problem solving in technology-rich environments. These skills are "key information-processing competencies" that are relevant to adults in many social contexts and work situations. The survey also examines the relationship between the skills and the background data such as age, education and earnings.
- The results are from the first round of the survey of Adult Skills which is conducted by OECD internationally.
- Around 157,000 adults were surveyed in 24 countries and sub-national regions.

[Purpose]
- The survey of Adult Skills is designed to measure the competency of adults in key information-processing skills. The result from this survey will help countries enhance human resource development policies such as education and training systems by examining how these skills effect societies and economies, and educational and training institutions in improving skills.

[Background]
- OECD countries face globalization of the economies and transition to knowledge-based economies which resulted in the decline of tasks that require only low skill proficiency. To ensure employment and enhance economic growth, improving proficiencies in skills demanded in the 21st century has become a glowing concern in many countries. The survey of Adult Skills (PIAAC) is designed to measure proficiency of information-processing skills of adults and to acquire knowledge that may influence policies of participating countries.

[Design]
- The project was steered by the PIAAC Board of Participating Countries. The survey was operated by international consortium led by Educational Testing Service (ETS) .
- National Institute of Educational Policy Research (NIER) conducted the survey in Japan under the international agreements.

[Participating Countries]
- 24 countries and sub-national regions
  - OECD Countries: Australia, Austria, Canada, Czech Republic, Denmark, Estonia, Finland,

France, Germany, Ireland, Italy, Japan, Netherlands, Norway, Poland, Republic of Korea, Slovak Republic, Spain, Sweden, United States
- Non-OECD Countries: Cyprus, Russian Federation
- OECD sub-national entities: Flanders (Belgium), the United Kingdom (England and Northern Ireland).

[Survey Period]
- August 2011 to February 2012

[Coverage]
- 11,000 adults between the ages of 16 and 65 as of December 1, 2011 were selected randomly from Basic Resident Registers. They were chosen by stratified two-stage sampling. The responses were collected from 5,173 respondents.
- The interviews to respondents under 20 were administered with the consent of their guardians.
- As foreign residents were not included in Basic Resident Registers at 2011, they were excluded from the samples.
- Because of Great East Japan Earthquake of March 11, 2011, earthquake disaster areas (areas covered by the Disaster Relief Act) were excluded from survey locations.
- The residents who are institutionalized at hospital, nursing home, prison, or military bases and those who are abroad were excluded from the samples

[Sampling]
- Participating countries were required to use a probability sample representatives of the target population. Each individual in the target population had a calculable non-zero probability of being selected as part of the sample.
- Japan implemented stratified two-stage sampling method using Basic Resident Register.
  - All the cities and towns were divided into 30 groups by their size and region.(stratification)
  - The target area was selected from the group. (1^{st} stage)
  - The respondents were selected from the target areas. (2^{nd} stage)
- Registered foreigners and illegal immigrants were excluded from the samples as they were not included in the Basic Resident Register. Also, earthquake disaster areas (areas covered by the Disaster Relief Act) were excluded from survey locations.

[What is assessed]
- The survey assesses proficiency in three skills, literacy, numeracy, and problem solving in technology-rich environments. Background questionnaires regarding age, gender, education, and occupation were also administered.
- The survey focuses on the key information-processed skills, the skills to make use of the information in various situations in the everyday life. The knowledge of formal mathematical contents was not required.

[Literacy]
- Literacy is defined as the ability to understand, evaluate, use and engage with written texts to participate in society, to achieve one's goals and to develop one's knowledge and potential.
  - Read instructions on how to make a phone call at the hotel. Make phone call to designed party.
  - Under given conditions, select a book using library catalogues search system.

[Numeracy]

- Numeracy is the ability to access, use, interpret, and communicate mathematical information and ideas in order to engage in and to manage the demands of a range of situations in adult life.
  - Calculate acceptable intake of food from its ingredients label.
  - Create a graph from a table which summarizes production of a certain product.

[Problem solving in technology-rich environments]

- Problem-solving in technology-rich environments is defined as the ability to use digital technology, communication tools, and networks to acquire and evaluate information, communicate with others and perform practical tasks.
  - Under given conditions, purchase a product on internet.
  - Under given conditions, create a list of people from the spreadsheet and send it by email.

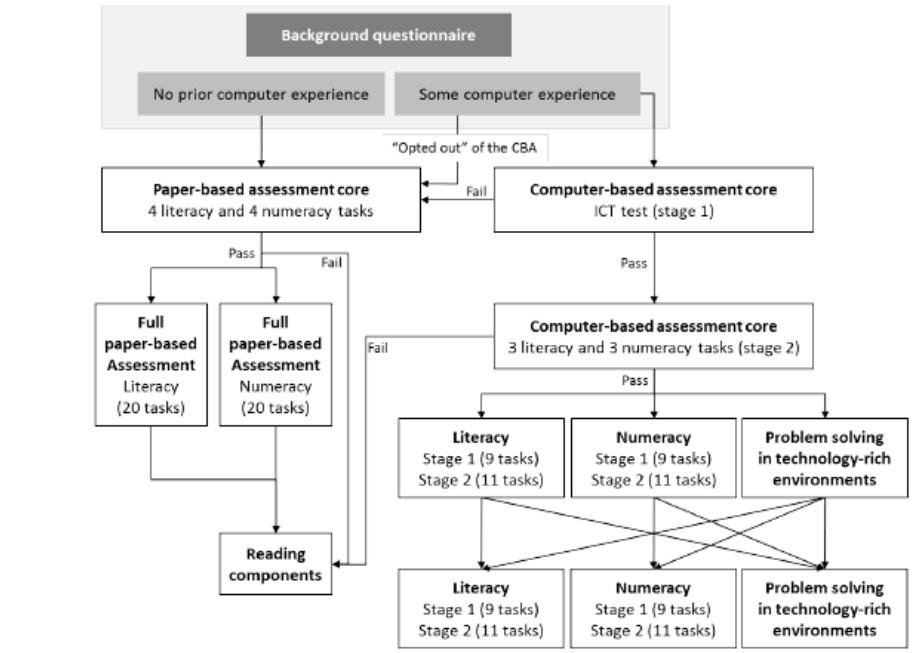
[Methods]

- The survey was administered under the supervision of trained interviewers either in the respondent's home or in a location agreed between the respondent and the interviewer.
- The background questionnaire was administered in Computer-Aided Personal Interview format by the interviewer. After having answered the background questionnaire, the respondent completed the assessment of literacy, numeracy, and problem solving in technology-rich environments.
- Respondents completed about 20 tasks each from one or two skills.
- Respondents could take as much or as little time as needed to complete the assessment. Average time taken to answer the questionnaires and complete the assessment was between 1 hour and 30 minutes to 2 hours.
- Respondents completed the assessment on a laptop computer unless otherwise
  1. respondents had no prior computer experience.
  2. respondents opted out of the computer-based assessment.
  3. respondents failed the computer-based assessment core (ICT Core).

[Scales]

- The results are represented on a 500-point scale.
- The scales have been divided into "proficiency levels", defined by the level of difficulty of the tasks. Six proficiency levels are defined for literacy and numeracy (Levels 1 through 5 plus below Level 1) and four for problem solving in technology-rich environments (Levels 1 through 3 plus below Level 1)

Figure 1: Different pathways in the Survey of Adult Skills (PIAAC)



Note: Japan did not participate in the reading components assessment.

3

2. SUMMARY

- Japan has the highest average level of proficiency in literacy and numeracy.
- The proportion of adults (including those who took paper-based assessment) scoring at Level 2 and 3 for problem solving in technology-rich environments is almost as same as that of the OECD average.
- When the target population consists of those who took computer-based assessment only, Japan has the highest average level of proficiency in problem solving in technology-rich environments also.

Table 1: Mean proficiency scores of 16-65 year-olds in literacy, numeracy, and problem solving in technology-rich environments and the percentage of 16-65 year-olds scoring at Level 2 or 3 in problem solving in technology-rich environments

Countries and regions	Literacy	Numeracy	Problem solving in technology-rich environments	
	(mean score)	(mean score)	(% at level 2 or 3)	(mean score)
OECD				
National entities				
Australia	280	268	38	289
Austria	269	275	32	284
Canada	273	265	37	282
Czech Republic	274	276	33	283
Denmark	271	278	39	283
Estonia	276	273	28	278
Finland	288	282	42	289
France	262	254	m	m
Germany	270	272	36	283
Ireland	267	256	25	277
Italy	250	247	m	m
Japan	296	288	35	294
Korea	273	263	30	283
Netherlands	284	280	42	286
Norway	278	278	41	286
Poland	267	260	19	275
Slovak Republic	274	276	26	281
Spain	252	246	m	M
Sweden	279	279	44	288
United States	270	253	31	277
Sub-national entities				
Flanders (Belgium)	275	280	35	281
England/N. Ireland (UK)	272	262	35	280
Average	**273**	**269**	**34**	283
Partners				
Cyprus	269	265	m	m

Significantly above the average

Not significantly different from the average

Significantly below the average

(1) PROFICIENCY IN LITERACY

- Japan has the highest average level of proficiency in literacy. Mean score for literacy was 296 points while OECD average was 273 points.
- Japan has the largest proportion of adults scoring at level 3 and 4 and the smallest proportion of adults scoring at level 2 (Figure 2, 3). Japan is among countries with largest proportion of adults scoring at level 5.
- Japan is the only country to have less than 10% of adults scoring at level 1 and below (Figure 2).
- In Japan , the mean score difference between adults at 5th percentile and the adults at 95th percentile is 129 points. This difference is significantly lower than OECD average.

1. Proficiency level

For literacy, proficiency is described in terms of a scale of 500 points based upon the difficulty of each item and divided into 6 levels. Table 1 shows the distribution of the adults by proficiency level.

Proficiency at Level 5: scores equal to or higher than 376 points.
Proficiency at Level 4: scores from 326 points to less than 376 points.
Proficiency at Level 3: scores from 276 points to less than 325 points.
Proficiency at Level 2: scores from 226 points to less than 275 points.
Proficiency at Level 1: scores from 176 points to less than 225 points.
Proficiency below Level 1: scores below 176 points

- Finland has the largest proportion of the adults at level 5 (2.2%), followed by Australia and Netherland (both at 1.3%) Sweden and Japan (both at 1.2%) OECD average is 0.7%.
- Japan has the largest proportion of adults at Level 4 (21.4%). OECD average is 11.1%.
- Japan has the largest proportion of adults at Level 3 (48.6%). OECD average is 38.2%.
- Japan has the smallest proportion of adults at Level 2 (22.8%). OECD average is 33.3%.
- Japan has the smallest proportion of adults at Level 1 (4.3%). OECD average is 12.2%.
- Japan has the smallest proportion of adults below Level 1 (0.6%). OECD average is 3.3%.

Table 1: Percentage of adults scoring at each proficiency level in literacy

	Below Level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Missing	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD														
National entities														
Australia	3.1	(0.3)	9.4	(0.5)	29.2	(0.7)	39.4	(0.9)	15.7	(0.7)	1.3	(0.2)	1.9	(0.2)
Austria	2.5	(0.3)	12.8	(0.7)	37.2	(0.9)	37.3	(0.9)	8.2	(0.5)	0.3	(0.1)	1.8	(0.2)
Canada	3.8	(0.2)	12.6	(0.5)	31.7	(0.7)	37.3	(0.7)	12.8	(0.5)	0.9	(0.1)	0.9	(0.1)
Czech Republic	1.5	(0.3)	10.3	(0.7)	37.5	(1.6)	41.4	(1.4)	8.3	(0.8)	0.4	(0.2)	0.6	(0.2)
Denmark	3.8	(0.3)	11.9	(0.6)	34.0	(0.9)	39.9	(0.8)	9.6	(0.5)	0.4	(0.1)	0.4	(0.1)
Estonia	2.0	(0.2)	11.0	(0.5)	34.3	(0.7)	40.6	(0.8)	11.0	(0.5)	0.8	(0.2)	0.4	(0.1)
Finland	2.7	(0.2)	8.0	(0.5)	26.5	(0.9)	40.7	(0.8)	20.0	(0.6)	2.2	(0.3)	0.0	(0.0)
France	5.3	(0.3)	16.2	(0.5)	35.9	(0.8)	34.0	(0.7)	7.4	(0.4)	0.3	(0.1)	0.8	(0.1)
Germany	3.3	(0.4)	14.2	(0.7)	33.9	(1.0)	36.4	(0.9)	10.2	(0.6)	0.5	(0.2)	1.5	(0.2)
Ireland	4.3	(0.4)	13.2	(0.8)	37.6	(0.9)	36.0	(0.9)	8.1	(0.5)	0.4	(0.1)	0.5	(0.1)
Italy	5.5	(0.6)	22.2	(1.0)	42.0	(1.0)	26.4	(1.0)	3.3	(0.4)	0.1	(0.0)	0.7	(0.2)
Japan	0.6	(0.2)	4.3	(0.4)	22.8	(0.8)	48.6	(1.0)	21.4	(0.7)	1.2	(0.2)	1.2	(0.1)
Korea	2.2	(0.2)	10.6	(0.5)	37.0	(0.9)	41.7	(0.9)	7.9	(0.5)	0.2	(0.1)	0.3	(0.1)
Netherlands	2.6	(0.3)	9.1	(0.5)	26.4	(0.7)	41.5	(0.8)	16.8	(0.6)	1.3	(0.2)	2.3	(0.2)
Norway	3.0	(0.3)	9.3	(0.6)	30.2	(0.8)	41.6	(0.8)	13.1	(0.6)	0.6	(0.1)	2.2	(0.2)
Poland	3.9	(0.3)	14.8	(0.6)	36.5	(0.9)	35.0	(0.9)	9.0	(0.5)	0.7	(0.1)	0.0	(0.0)
Slovak Republic	1.9	(0.2)	9.7	(0.5)	36.2	(1.0)	44.4	(0.9)	7.3	(0.5)	0.2	(0.1)	0.3	(0.1)
Spain	7.2	(0.5)	20.3	(0.8)	39.1	(0.7)	27.8	(0.7)	4.6	(0.4)	0.1	(0.1)	0.8	(0.1)
Sweden	3.7	(0.3)	9.6	(0.6)	29.1	(1.0)	41.6	(0.9)	14.9	(0.6)	1.2	(0.2)	0.0	(0.0)
United States	3.9	(0.5)	13.6	(0.7)	32.6	(1.2)	34.2	(1.0)	10.9	(0.7)	0.6	(0.2)	4.2	(0.6)
Sub-national entities														
Flanders (Belgium)	2.7	(0.3)	11.3	(0.5)	29.6	(0.8)	38.8	(0.9)	11.9	(0.5)	0.4	(0.2)	5.2	(0.2)
England (UK)	3.3	(0.4)	13.1	(0.7)	33.1	(1.0)	36.0	(1.0)	12.4	(0.7)	0.8	(0.2)	1.4	(0.2)
Northern Ireland (UK)	2.5	(0.5)	14.9	(0.9)	36.2	(1.5)	34.3	(1.6)	9.4	(0.6)	0.5	(0.2)	2.2	(0.3)
England/N. Ireland (UK)	3.3	(0.4)	13.1	(0.7)	33.2	(1.0)	35.9	(1.0)	12.3	(0.7)	0.8	(0.2)	1.4	(0.2)
Average	3.3	(0.1)	12.2	(0.1)	33.3	(0.2)	38.2	(0.2)	11.1	(0.1)	0.7	(0.0)	1.2	(0.0)
Partners														
Cyprus	1.6	(0.2)	10.3	(0.5)	33.0	(0.9)	32.1	(0.9)	5.2	(0.4)	0.2	(0.1)	17.7	(0.4)
Russian Federation	1.6	(0.5)	11.5	(1.2)	34.9	(1.9)	41.2	(2.0)	10.4	(1.6)	0.4	(0.2)	0.0	(0.0)

2. Comparison of scores (Table 2, 3)

- Japan has the highest mean scores (296 points) which is significantly higher than OCED average (273 points).
- The 16-24 population in Japan has the highest scores (299 points) which is significantly higher than OECD average. There is no statistically significant difference between Japan and Finland (297 points).

Table 2: Mean literacy proficiency scores of 16-65 year-olds

Mean	Comparison country	Countries whose mean score is NOT significantly different from the comparison country
296	Japan	
288	Finland	
284	Netherlands	
280	Australia	Norway, Sweden
279	Sweden	Australia, Norway
278	Norway	Australia, Sweden
276	Estonia	Czech Republic, Flanders (Belgium)
275	Flanders (Belgium)	Czech Republic, Estonia, Slovak Republic
274	Czech Republic	Canada, Estonia, Korea, Slovak Republic, Flanders (Belgium), England/N. Ireland (UK)
274	Slovak Republic	Canada, Czech Republic, Korea, Flanders (Belgium), England/N. Ireland (UK)
273	Canada	Czech Republic, Korea, Slovak Republic, England/N. Ireland (UK)
273	**Average**	**Canada, Czech Republic, Korea, Slovak Republic, England/N. Ireland (UK)**
273	Korea	Canada, Czech Republic, Slovak Republic, England/N. Ireland (UK)
272	England/N. Ireland (UK)	Canada, Czech Republic, Denmark, Germany, Korea, Slovak Republic, United States
271	Denmark	Austria, Germany, United States, England/N. Ireland (UK)
270	Germany	Austria, Denmark, United States, England/N. Ireland (UK), Cyprus
270	United States	Austria, Denmark, Germany, England/N. Ireland (UK), Cyprus
269	Austria	Denmark, Germany, United States, Cyprus
269	Cyprus	Austria, Germany, Ireland, United States
267	Poland	Ireland
267	Ireland	Poland, Cyprus
262	France	
252	Spain	Italy
250	Italy	Spain

Significantly above the average

Not significantly different from the average

Significantly below the average

Table 3: Mean literacy proficiency scores of 16-24 year-olds

Mean	Comparison country	Countries whose mean score is NOT significantly different from the comparison country
299	Japan	Finland
297	Finland	Japan, Korea, Netherlands
295	Netherlands	Finland, Korea
293	Korea	Finland, Netherlands
287	Estonia	Australia, Flanders (Belgium)
285	Flanders (Belgium)	Australia, Czech Republic, Estonia, Poland, Sweden
284	Australia	Czech Republic, Estonia, Germany, Poland, Sweden, Flanders (Belgium)
283	Sweden	Australia, Czech Republic, Germany, Poland, Flanders (Belgium)
281	Poland	Australia, Czech Republic, Germany, Sweden, Flanders (Belgium)
281	Czech Republic	Australia, Austria, Canada, Denmark, Germany, Poland, Slovak Republic, Sweden, Flanders (Belgium)
280	**Average**	**Austria, Czech Republic, Germany, Poland, Sweden**
279	Germany	Australia, Austria, Canada, Czech Republic, Denmark, France, Norway, Poland, Slovak Republic, Sweden
278	Austria	Canada, Czech Republic, Denmark, France, Germany, Norway, Slovak Republic
276	Denmark	Austria, Canada, Czech Republic, France, Germany, Norway, Slovak Republic, United States
276	Slovak Republic	Austria, Canada, Czech Republic, Denmark, France, Germany, Norway, United States
276	Canada	Austria, Czech Republic, Denmark, France, Germany, Norway, Slovak Republic, United States
275	Norway	Austria, Canada, Denmark, France, Germany, Ireland, Slovak Republic, United States
275	France	Austria, Canada, Denmark, Germany, Norway, Slovak Republic, United States
272	United States	Canada, Denmark, France, Ireland, Norway, Slovak Republic, England/N. Ireland (UK), Cyprus
271	Ireland	Norway, United States, England/N. Ireland (UK), Cyprus
267	Cyprus[1]	Ireland, Spain, United States, England/N. Ireland (UK)
266	England/N. Ireland (UK)	Ireland, Italy, Spain, United States, Cyprus
264	Spain	Italy, England/N. Ireland (UK), Cyprus
261	Italy	Spain, England/N. Ireland (UK)

Significantly above the average

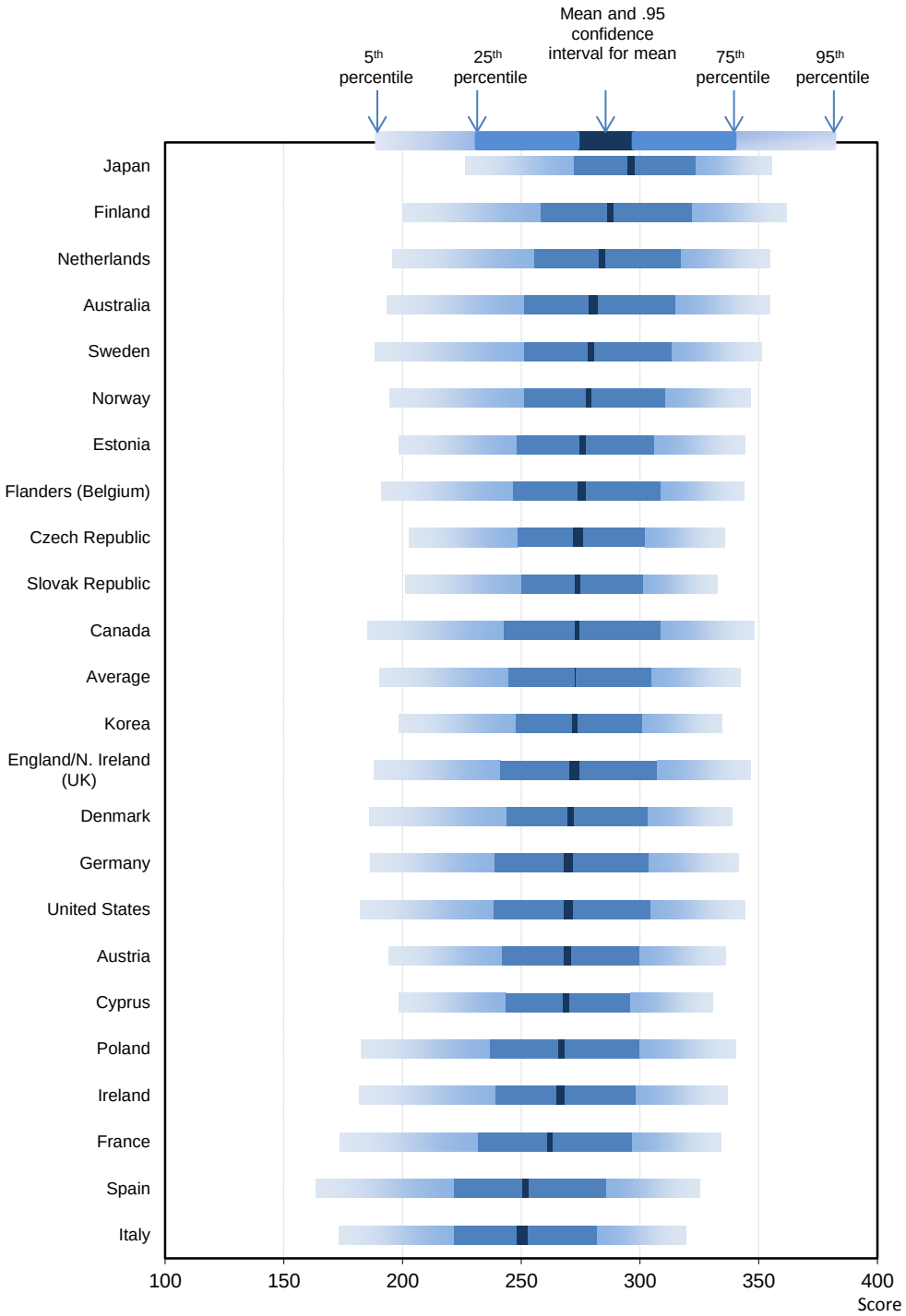
Not significantly different from the average

Significantly below the average

3. Distribution of scores (Figure 1)

- Japan has the smallest difference in score points between adults at 5th percentile and the adults at 95th percentile (129 points). OECD average is 155 points.

Figure1: Distribution of literacy proficiency scores



(2) PROFICIENCY IN NUMERACY

- Japan has the highest average level of proficiency in numeracy. Mean score for literacy was 288 points while OECD average was 269 points (Figure 4).
- Japan has the largest proportion of adults scoring at level 3 and 4 and second smallest proportion of adults scoring at level 2 (Figure 4, 5). Japan is among countries with largest proportion of adults scoring at level 5.
- Japan is the only country to have less than 10% of adults scoring at level 1 and below (Figure 5).
- In Japan, the mean score difference between the adults at 5th percentile and the adults at 95th percentile is 143 points. This difference is significantly lower than OECD average (167 points). Japan has the smallest variation in literacy proficiency (Figure 5).

1. Proficiency level

For numeracy, proficiency is described in terms of a scale of 500 points based upon the difficulty of each item and divided into 6 levels. Table 4 shows the distribution of the adults by proficiency level.

Proficiency at Level 5: scores equal to or higher than 376 points.
Proficiency at Level 4: scores from 326 points to less than 376 points.
Proficiency at Level 3: scores from 276 points to less than 325 points.
Proficiency at Level 2: scores from 226 points to less than 275 points.
Proficiency at Level 1: scores from 176 points to less than 225 points.
Proficiency below Level 1: scores below 176 points

- Finland has the largest proportion of the adults at level 5 (2.2%), followed by Sweden (1.9%), Norway and Denmark (both at 1.6%), Australia (1.5%) and japan (1.5%). OECD average is 1.1%.
- Japan has the largest proportion of adults at Level 4 (17.3%). OECD average is 11.4%.
- Japan has the largest proportion of adults at Level 3 (43.7%). OECD average is 34.4%.
- Belgium has the smallest proportion of adults at Level 2 (27.7%), followed by Japan (28.1%). OECD average is 33.0%.
- Japan has the smallest proportion of adults at Level 1 (7.0%). OECD average is 14.0%.
- Japan has the smallest proportion of adults below Level 1 (1.2%). OECD average is 5.0%.

Table 4: Percentage of adults scoring at each proficiency level in numeracy

	Below Level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Missing	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD														
National entities														
Australia	5.7	(0.4)	14.4	(0.7)	32.1	(0.9)	32.6	(0.9)	11.7	(0.6)	1.5	(0.2)	1.9	(0.2)
Austria	3.4	(0.3)	10.9	(0.6)	33.1	(0.9)	37.2	(1.0)	12.5	(0.6)	1.1	(0.2)	1.8	(0.2)
Canada	5.9	(0.3)	16.4	(0.4)	31.9	(0.5)	32.4	(0.7)	11.3	(0.4)	1.3	(0.2)	0.9	(0.1)
Czech Republic	1.7	(0.3)	11.1	(0.8)	34.7	(1.2)	40.4	(1.3)	10.6	(0.7)	0.9	(0.3)	0.6	(0.2)
Denmark	3.4	(0.3)	10.8	(0.5)	30.7	(0.8)	38.0	(0.7)	14.9	(0.5)	1.7	(0.2)	0.4	(0.1)
Estonia	2.4	(0.2)	11.9	(0.5)	36.2	(0.6)	38.0	(0.6)	10.4	(0.4)	0.8	(0.2)	0.4	(0.1)
Finland	3.1	(0.3)	9.7	(0.5)	29.3	(0.7)	38.4	(0.8)	17.2	(0.6)	2.2	(0.3)	0.0	(0.0)
France	9.1	(0.3)	18.9	(0.6)	33.8	(0.7)	29.0	(0.6)	7.8	(0.3)	0.5	(0.1)	0.8	(0.1)
Germany	4.5	(0.4)	13.9	(0.7)	31.0	(0.8)	34.9	(0.9)	13.0	(0.6)	1.2	(0.2)	1.5	(0.2)
Ireland	7.1	(0.5)	18.1	(0.8)	38.0	(0.9)	28.8	(0.9)	7.0	(0.6)	0.6	(0.1)	0.5	(0.1)
Italy	8.0	(0.6)	23.7	(1.0)	38.8	(1.1)	24.4	(1.0)	4.3	(0.4)	0.2	(0.1)	0.7	(0.2)
Japan	1.2	(0.2)	7.0	(0.5)	28.1	(0.8)	43.7	(0.8)	17.3	(0.7)	1.5	(0.2)	1.2	(0.1)
Korea	4.2	(0.3)	14.7	(0.6)	39.4	(1.0)	34.6	(0.9)	6.6	(0.5)	0.2	(0.1)	0.3	(0.1)
Netherlands	3.5	(0.3)	9.7	(0.6)	28.2	(0.8)	39.4	(0.9)	15.6	(0.6)	1.3	(0.2)	2.3	(0.2)
Norway	4.3	(0.3)	10.2	(0.5)	28.4	(0.8)	37.4	(0.8)	15.7	(0.7)	1.7	(0.3)	2.2	(0.2)
Poland	5.9	(0.4)	17.6	(0.6)	37.7	(0.9)	30.5	(0.9)	7.7	(0.5)	0.7	(0.1)	0.0	(0.0)
Slovak Republic	3.5	(0.3)	10.3	(0.6)	32.2	(0.9)	41.1	(1.0)	11.8	(0.7)	0.8	(0.2)	0.3	(0.1)
Spain	9.5	(0.5)	21.1	(0.7)	40.1	(0.9)	24.5	(0.7)	4.0	(0.3)	0.1	(0.1)	0.8	(0.1)
Sweden	4.4	(0.4)	10.3	(0.7)	28.7	(1.1)	38.0	(1.1)	16.7	(0.6)	1.9	(0.3)	0.0	(0.0)
United States	9.1	(0.6)	19.6	(0.8)	32.6	(1.0)	25.9	(0.8)	7.8	(0.6)	0.7	(0.2)	4.2	(0.6)
Sub-national entities														
Flanders (Belgium)	3.0	(0.3)	10.4	(0.5)	27.7	(0.7)	36.8	(0.9)	15.4	(0.7)	1.6	(0.2)	5.2	(0.2)
England (UK)	6.4	(0.5)	17.8	(0.9)	33.3	(1.0)	29.8	(1.1)	10.4	(0.8)	0.9	(0.2)	1.4	(0.2)
Northern Ireland (UK)	5.6	(0.8)	18.7	(1.2)	35.9	(1.1)	29.0	(1.1)	7.8	(0.7)	0.7	(0.2)	2.2	(0.3)
England/N. Ireland (UK)	6.3	(0.5)	17.8	(0.9)	33.4	(1.0)	29.8	(1.0)	10.3	(0.7)	0.9	(0.2)	1.4	(0.2)
Average	5.0	(0.1)	14.0	(0.1)	33.0	(0.2)	34.4	(0.2)	11.4	(0.1)	1.1	(0.0)	1.2	(0.0)
Partners														
Cyprus	3.4	(0.3)	12.1	(0.7)	31.8	(0.9)	28.4	(0.8)	6.3	(0.4)	0.3	(0.1)	17.7	(0.4)
Russian Federation	2.0	(0.7)	12.1	(1.2)	39.7	(1.8)	38.1	(1.7)	7.7	(1.4)	0.3	(0.2)	0.0	(0.0)

2. Comparison of scores (Table 5, 6)

- Japan has the highest mean scores (288 points) which is significantly higher than OCED average (269points).
- The 16-24 population in Netherland has the highest mean scores (285 points), followed by Finland (285 points) and Japan (283 points). The mean proficiency score for Japan is significantly higher than OECD average. There is no statistically significant difference between Netherland, Finland, Belgium, Korea, Austria, Estonia, Sweden, Czech Republic and Slovak Republic.

Table5: Mean numeracy proficiency scores of 16-65 year-olds

Mean	Comparison country	Countries whose mean score is NOT significantly different from the comparison country
288	Japan	
282	Finland	Netherlands, Flanders (Belgium)
280	Flanders (Belgium)	Denmark, Finland, Netherlands, Norway, Sweden
280	Netherlands	Finland, Norway, Sweden, Flanders (Belgium)
279	Sweden	Denmark, Netherlands, Norway, Flanders (Belgium)
278	Norway	Denmark, Netherlands, Sweden, Flanders (Belgium)
278	Denmark	Norway, Sweden, Flanders (Belgium)
276	Slovak Republic	Austria, Czech Republic
276	Czech Republic	Austria, Slovak Republic
275	Austria	Czech Republic, Estonia, Slovak Republic
273	Estonia	Austria, Germany
272	Germany	Estonia
269	**Average**	**Australia**
268	Australia	Canada
265	Canada	Australia, Cyprus
265	Cyprus	Canada, Korea
263	Korea	England/N. Ireland (UK), Cyprus
262	England/N. Ireland (UK)	Korea, Poland
260	Poland	England/N. Ireland (UK)
256	Ireland	France, United States
254	France	Ireland, United States
253	United States	France, Ireland
247	Italy	Spain
246	Spain	Italy

Significantly above the average

Not significantly different from the average

Significantly below the average

Table 6: Mean numeracy proficiency scores of 16-24 year-olds

Mean	Comparison country	Countries whose mean score is NOT significantly different from the comparison country
285	Netherlands	Finland, Japan, Korea, Flanders (Belgium)
285	Finland	Japan, Korea, Netherlands, Flanders (Belgium)
283	Japan	Austria, Czech Republic, Estonia, Finland, Korea, Netherlands, Slovak Republic, Sweden, Flanders (Belgium)
283	Flanders (Belgium)	Austria, Finland, Japan, Korea, Netherlands, Slovak Republic, Sweden
281	Korea	Austria, Czech Republic, Estonia, Finland, Japan, Netherlands, Slovak Republic, Sweden, Flanders (Belgium)
279	Austria	Czech Republic, Estonia, Germany, Japan, Korea, Slovak Republic, Sweden, Flanders (Belgium)
279	Estonia	Austria, Czech Republic, Germany, Japan, Korea, Slovak Republic, Sweden
278	Sweden	Austria, Czech Republic, Estonia, Germany, Japan, Korea, Slovak Republic, Flanders (Belgium)
278	Czech Republic	Austria, Estonia, Germany, Japan, Korea, Slovak Republic, Sweden
278	Slovak Republic	Austria, Czech Republic, Estonia, Germany, Japan, Korea, Sweden, Flanders (Belgium)
275	Germany	Australia, Austria, Czech Republic, Denmark, Estonia, Norway, Slovak Republic, Sweden
273	Denmark	Australia, Germany, Norway
271	**Average**	**Australia, Canada, Denmark, Norway, Poland**
271	Norway	Australia, Canada, Denmark, Germany, Poland
270	Australia	Canada, Denmark, Germany, Norway, Poland, Cyprus
269	Poland	Australia, Canada, Norway, Cyprus
268	Canada	Australia, Norway, Poland, Cyprus
264	Cyprus	Australia, Canada, France, Poland
263	France	Cyprus
258	Ireland	Italy, Spain, England/N. Ireland (UK)
257	England/N. Ireland (UK)	Ireland, Italy, Spain
255	Spain	Ireland, Italy, England/N. Ireland (UK)
251	Italy	Ireland, Spain, United States, England/N. Ireland (UK)
249	United States	Italy

Significantly above the average

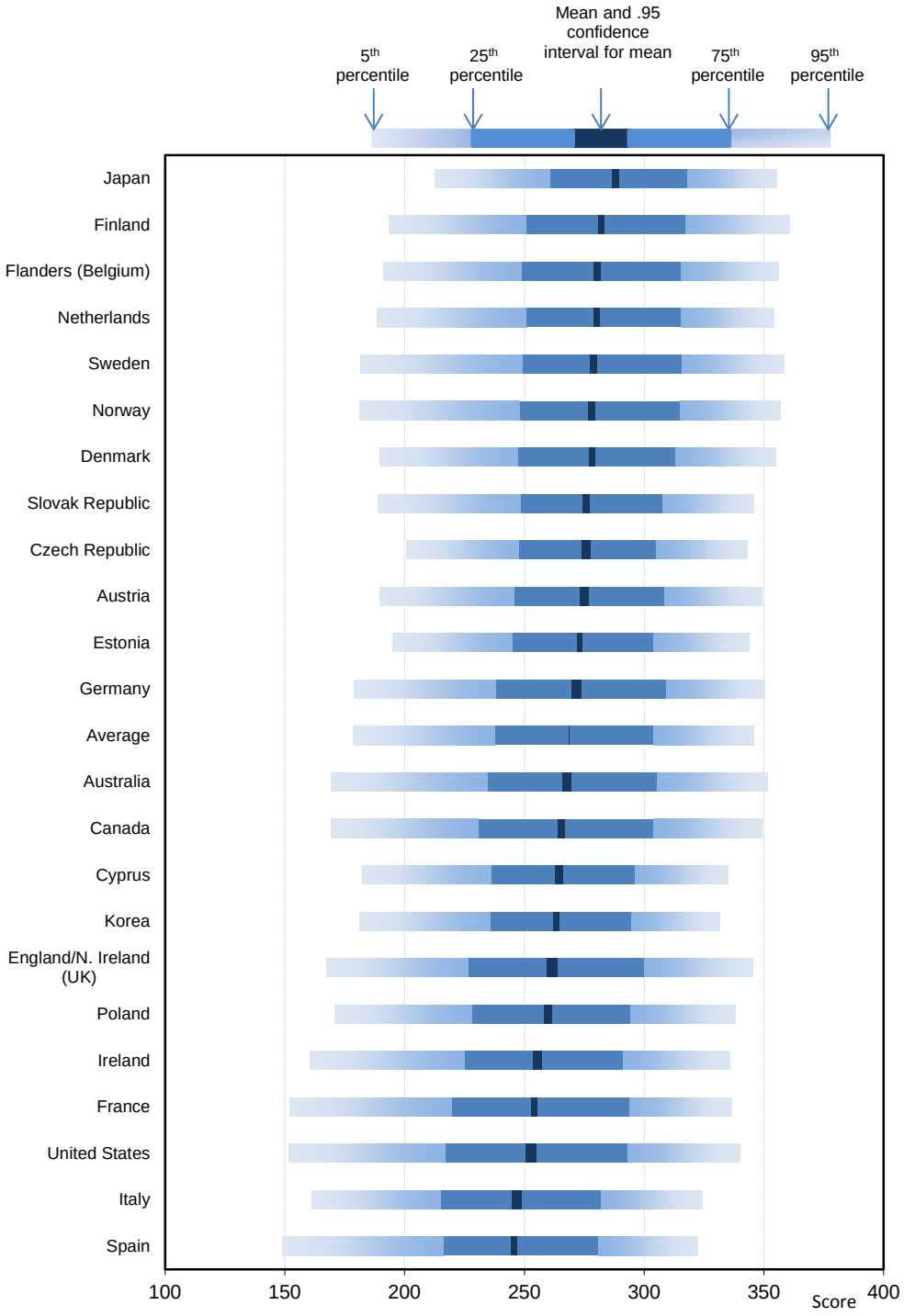
Not significantly different from the average

Significantly below the average

3. Distribution of scores (Figure 2)

- Japan has the smallest difference in score points between adults at 5th percentile and 95th percentile (142 points). OECD average is 171 points.

Figure 2: Mean numeracy proficiency and distribution of numeracy scores, by percentile



(3) PROFICIENCY IN PROBLEM-SOLVING IN TECHNOLOGY-RICH ENVIRONMENTS

- The proficiency in problem solving in technology-rich environments was measured among the respondents who took computer-based assessments.
- The proficiency in problem solving in technology-rich environments is scaled according to the proportion of adults who took paper-based assessments and are at level 2 and 3.
- In Japan, since the proportion of adults who took paper-based assessments is 36.8% which exceeds OECD average (24.4%), the proportion of adults at level 2 and 3 is almost equal to that of OECD average (Figure 5,6).
- When the target population consists of respondents who took computer-based assessments only, Japan has the highest mean score in problem solving in technology-rich environments (294 points) which is considerably higher than OECD average (283 points).
- Japan has the largest proportion of the adults at level 3, and the smallest proportion of the adults at level 1 and below.

1. Proficiency level

For problem-solving in technology-rich environments, proficiency is described in terms of a scale of 500 points based upon the difficulty of each item and divided into 4 levels. Those who took the paper-based assessment are divided into 3 groups. Table 7 shows the distribution of the adults by proficiency level.

Proficiency at Level 3: scores equal to or higher than 341 points.
Proficiency at Level 2: scores from 291 points to less than 340 points.
Proficiency at Level 1: scores from 241 points to less than 290 points.
Proficiency below Level 1: scores below 240 points
No prior computer experience
Failed ICT Core
Opted out of computer based assessment

[16-65 population]

- Sweden has the largest proportion of the adults at level 3 (8.8%), followed by Finland (8.4%), and Japan (1.5%). OECD average is 5.8%.
- Sweden has the largest proportion of adults at Level 2 (35.2%), followed by Norway (34.9%), Netherland (34.3%), Finland (33.2%), Denmark (32.3%), Australia (31.8%), Canada (29.4%), Germany (29.2%), England (29.1%), Belgium (28.7%), Austria (28.1%), Korea (26.8%), Czech Republic (26.5%) and Japan (26.3%). OECD average is 28.2%.
- Poland has the smallest proportion of adults at Level 1 (19.0%), followed by Japan (19.7%). OECD average is 29.4%.
- Japan has the smallest proportion of adults below Level 1 (7.6%). OECD average is 12.3%.
- The proportion of the adults who had no prior computer experience in Japan is 10.2% which is higher than OECD average (9.3%).
- Japan has the largest proportion of the adults who failed ICT Core (10.7%). OECD average is 4.9%.
- Poland has the largest proportion of adults who opted out of taking computer-based assessment (23.8%), followed by Ireland (17.4%) and Japan (15.9%). OECD Average is 10.2%.

Table 7: Percentage of adults scoring at each proficiency level in problem solving in technology-rich environments

	Proficiency levels								No computer experience		Opted out of computer based assessment		Failed ICT core		Missing	
	Below Level 1		Level 1		Level 2		Level 3									
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD																
National entities																
Australia	9.2	(0.6)	28.9	(0.8)	31.8	(1.0)	6.2	(0.5)	4.0	(0.3)	13.7	(0.6)	3.5	(0.3)	2.7	(0.3)
Austria	9.9	(0.5)	30.9	(0.9)	28.1	(0.8)	4.3	(0.4)	9.6	(0.4)	11.3	(0.5)	4.0	(0.3)	1.8	(0.2)
Canada	14.8	(0.4)	30.0	(0.7)	29.4	(0.5)	7.1	(0.4)	4.5	(0.2)	6.3	(0.3)	5.9	(0.2)	1.9	(0.1)
Czech Republic	12.9	(0.9)	28.8	(1.3)	26.5	(1.1)	6.6	(0.6)	10.3	(0.5)	12.1	(0.8)	2.2	(0.3)	0.6	(0.2)
Denmark	13.9	(0.6)	32.9	(0.8)	32.3	(0.7)	6.3	(0.4)	2.4	(0.2)	6.4	(0.3)	5.3	(0.2)	0.4	(0.1)
Estonia	13.8	(0.5)	29.0	(0.7)	23.2	(0.6)	4.3	(0.4)	9.9	(0.3)	15.8	(0.4)	3.4	(0.2)	0.5	(0.1)
Finland	11.0	(0.5)	28.9	(0.8)	33.2	(0.7)	8.4	(0.6)	3.5	(0.3)	9.7	(0.4)	5.2	(0.3)	0.1	(0.1)
France	m	m	m	m	m	m	m	m	10.5	(0.3)	11.6	(0.4)	6.0	(0.3)	m	m
Germany	14.4	(0.8)	30.5	(0.8)	29.2	(0.8)	6.8	(0.6)	7.9	(0.5)	6.1	(0.5)	3.7	(0.4)	1.5	(0.2)
Ireland	12.6	(0.7)	29.5	(0.9)	22.1	(0.8)	3.1	(0.3)	10.1	(0.4)	17.4	(0.7)	4.7	(0.4)	0.6	(0.1)
Italy	m	m	m	m	m	m	m	m	24.4	(0.8)	14.6	(0.9)	2.5	(0.3)	m	m
Japan	7.6	(0.6)	19.7	(0.8)	26.3	(0.8)	8.3	(0.5)	10.2	(0.5)	15.9	(0.9)	10.7	(0.7)	1.3	(0.1)
Korea	9.8	(0.5)	29.6	(0.9)	26.8	(0.8)	3.6	(0.3)	15.5	(0.4)	5.4	(0.3)	9.1	(0.4)	0.3	(0.1)
Netherlands	12.5	(0.6)	32.6	(0.7)	34.3	(0.8)	7.3	(0.4)	3.0	(0.2)	4.5	(0.3)	3.7	(0.3)	2.3	(0.2)
Norway	11.4	(0.6)	31.8	(0.8)	34.9	(0.9)	6.1	(0.4)	1.6	(0.2)	6.7	(0.4)	5.2	(0.3)	2.2	(0.2)
Poland	12.0	(0.6)	19.0	(0.7)	15.4	(0.7)	3.8	(0.3)	19.5	(0.5)	23.8	(0.7)	6.5	(0.4)	0.0	(0.0)
Slovak Republic	8.9	(0.5)	28.8	(0.9)	22.8	(0.7)	2.9	(0.3)	22.0	(0.7)	12.2	(0.4)	2.2	(0.2)	0.3	(0.1)
Spain	m	m	m	m	m	m	m	m	17.0	(0.5)	10.7	(0.5)	6.2	(0.3)	m	m
Sweden	13.1	(0.5)	30.8	(0.8)	35.2	(0.9)	8.8	(0.6)	1.6	(0.2)	5.7	(0.3)	4.8	(0.3)	0.1	(0.0)
United States	15.8	(0.9)	33.1	(0.9)	26.0	(0.9)	5.1	(0.4)	5.2	(0.4)	6.3	(0.6)	4.1	(0.4)	4.3	(0.6)
Sub-national entities																
Flanders (Belgium)	14.8	(0.6)	29.8	(0.8)	28.7	(0.8)	5.8	(0.4)	7.4	(0.3)	4.7	(0.3)	3.5	(0.3)	5.2	(0.2)
England (UK)	15.1	(0.8)	33.8	(1.1)	29.3	(0.9)	5.7	(0.5)	4.1	(0.3)	4.6	(0.4)	5.8	(0.4)	1.6	(0.2)
Northern Ireland (UK)	16.4	(1.5)	34.5	(1.2)	25.0	(1.2)	3.7	(0.6)	10.0	(0.6)	2.3	(0.3)	5.8	(0.4)	2.2	(0.3)
England/N. Ireland (UK)	15.1	(0.8)	33.9	(1.0)	29.1	(0.9)	5.6	(0.5)	4.3	(0.3)	4.5	(0.4)	5.8	(0.3)	1.6	(0.2)
Average	12.3	(0.1)	29.4	(0.2)	28.2	(0.2)	5.8	(0.1)	9.3	(0.1)	10.2	(0.1)	4.9	(0.1)	1.5	(0.0)
Partners																
Cyprus	m	m	m	m	m	m	m	m	18.4	(0.4)	18.0	(0.5)	1.9	(0.2)	m	m
Russian Federation	14.9	(2.2)	25.6	(1.3)	20.4	(1.4)	5.5	(1.1)	18.3	(1.7)	12.8	(1.6)	2.5	(0.6)	0.0	(0.0)

2. Percentage of adults scoring at Level 2 or 3 and comparison of scores (Table 8)

- Sweden has the largest proportion of adults scoring at Level 2 or 3 (44%), followed by Finland (42%), Netherland (42%), Norway (41%), Denmark (39%), Australia (38%), Canada (37%), Germany (36%), Belgium (35%) and Japan (35%). OECD average is 34%. The proportion includes respondents who took paper-based assessment.
- When the target population consists of respondents who took the computer-based assessment only, Japan has the highest mean proficiency score (294 points) for problem-solving in technology-rich environments which is significantly higher than OECD average (283 points).

Table 8: Mean proficiency scores of 16-65 year-olds and the percentage of 16-65 year-olds scoring at Level 2 or 3 in problem solving in technology-rich environments

Countries	Problem solving in technology-rich environments	
	(% at level 2 or 3)	mean
OECD ***National entities***		
Australia	38%	289
Austria	32%	284
Canada	37%	282
Czech Republic	33%	283
Denmark	39%	283
Estonia	28%	278
Finland	42%	289
France	m	m
Germany	36%	283
Ireland	25%	277
Italy	m	m
Japan	35%	294
Korea	30%	283
Netherlands	42%	286
Norway	41%	286
Poland	19%	275
Slovak Republic	26%	281
Spain	m	m
Sweden	44%	288
United States	31%	277
Flanders (Belgium)	35%	281
England/N. Ireland (UK)	35%	280
OECD Average	**34%**	283
Cyprus	m	m

	Significantly above the average
	Not significantly different from the average
	Significantly below the average

Notes:
Target population for percentage of adults at skill 2 and 3 for problem-solving in technology-rich environments includes all respondents. (computer-based and paper-and-pencil)
Target population for mean score for problem-solving in technology-rich environments excludes respondents who took paper and pencil assessments.
Cyprus, France, Italy, Spain did not field the problem-solving in technology-rich environments assessments.
Source: Survey of Adult Skills (PIAAC)（2013a） Figure 2.13. Mean scores for the problem-solving in technology-rich environments are calculated originally by NIER using PIAAC data.

3. Mean ICT use at work and at home (Table 9)

- Japan has the smallest proportion of adults who use email, internet, spreadsheets, and word processors both at work and at home.
- The percentage of adults who took computer-based- assessment and the mean proficiency score for the problem-solving in technology-rich environments have a strong positive relationship to mean ICT use at work and at home.

Table 9: Mean ICT use at home and at work, by age group

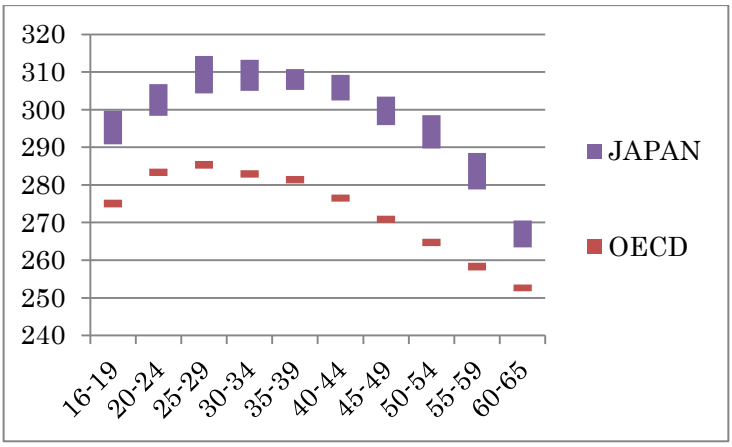
	16-24 year-olds				25-54 year-olds				55-65 year-olds			
	ICT at work		ICT at home		ICT at work		ICT at home		ICT at work		ICT at home	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
OECD												
National entities												
Australia	1.6	(0.1)	2.2	(0.0)	2.2	(0.0)	2.1	(0.0)	2.0	(0.0)	1.9	(0.0)
Austria	1.7	(0.0)	1.9	(0.0)	2.0	(0.0)	1.9	(0.0)	1.9	(0.0)	1.7	(0.1)
Canada	1.4	(0.0)	2.3	(0.0)	2.2	(0.0)	2.1	(0.0)	2.0	(0.0)	1.9	(0.0)
Czech Republic	1.8	(0.1)	2.4	(0.1)	2.1	(0.0)	2.2	(0.0)	2.0	(0.1)	1.8	(0.1)
Denmark	1.4	(0.1)	2.5	(0.0)	2.2	(0.0)	2.2	(0.0)	2.0	(0.0)	2.1	(0.0)
Estonia	1.8	(0.1)	2.4	(0.0)	2.2	(0.0)	2.0	(0.0)	2.0	(0.0)	1.4	(0.0)
Finland	1.3	(0.0)	2.2	(0.0)	2.0	(0.0)	2.0	(0.0)	1.8	(0.0)	1.6	(0.0)
Germany	1.6	(0.1)	2.2	(0.0)	2.0	(0.0)	1.9	(0.0)	1.9	(0.0)	1.7	(0.1)
Ireland	1.5	(0.1)	2.1	(0.1)	2.1	(0.0)	1.9	(0.0)	1.8	(0.1)	1.6	(0.1)
Italy	1.7	(0.1)	1.6	(0.1)	2.2	(0.0)	1.7	(0.0)	1.9	(0.1)	1.7	(0.1)
Japan	1.2	(0.1)	1.3	(0.1)	1.7	(0.0)	1.4	(0.0)	1.6	(0.1)	1.1	(0.1)
Korea	1.6	(0.1)	1.8	(0.1)	2.2	(0.0)	1.5	(0.0)	1.8	(0.1)	1.1	(0.1)
Netherlands	1.5	(0.1)	2.5	(0.0)	2.2	(0.0)	2.2	(0.0)	2.1	(0.0)	2.1	(0.0)
Norway	1.2	(0.0)	2.3	(0.0)	2.1	(0.0)	2.1	(0.0)	1.9	(0.0)	1.8	(0.0)
Poland	1.7	(0.0)	2.2	(0.0)	2.0	(0.0)	1.8	(0.0)	1.8	(0.1)	1.4	(0.1)
Slovak Republic	2.0	(0.1)	2.4	(0.0)	2.1	(0.0)	2.1	(0.0)	2.0	(0.1)	1.8	(0.1)
Spain	1.7	(0.1)	2.2	(0.1)	2.1	(0.0)	1.9	(0.0)	1.9	(0.1)	1.5	(0.1)
Sweden	1.3	(0.1)	2.2	(0.0)	1.9	(0.0)	2.0	(0.0)	1.8	(0.0)	1.8	(0.0)
United States	1.6	(0.1)	2.4	(0.1)	2.2	(0.0)	2.1	(0.0)	2.1	(0.1)	2.0	(0.1)
Sub-national entities												
Flanders (Belgium)	1.9	(0.1)	2.2	(0.0)	2.1	(0.0)	2.0	(0.0)	2.0	(0.0)	1.9	(0.0)
England (UK)	1.7	(0.1)	2.2	(0.1)	2.3	(0.0)	2.1	(0.0)	2.0	(0.0)	1.8	(0.1)
Northern Ireland (UK)	1.7	(0.1)	2.1	(0.1)	2.1	(0.0)	1.8	(0.0)	1.8	(0.1)	1.6	(0.1)
England/N. Ireland (UK)	1.7	(0.1)	2.2	(0.1)	2.3	(0.0)	2.1	(0.0)	2.0	(0.0)	1.8	(0.1)
Average	1.6	(0.0)	2.2	(0.0)	2.1	(0.0)	2.0	(0.0)	1.9	(0.0)	1.7	(0.0)
Partners												
Cyprus	1.6	(0.1)	1.6	(0.1)	1.9	(0.0)	1.6	(0.0)	1.6	(0.1)	1.1	(0.1)

3. RELATIONSHIP BETWEEN SKILLS AND BACKGROUND QUESTIONNAIRES (Figure 3-5)

(1) AGE

- In most countries, the proficiency in all three skills rises after graduation, reaching a peak at around age 30. Skills proficiency falls off steadily for those in their 30s and older.
- In Japan, the proficiency in literacy and numeracy is above OECD average for all age groups. Especially, proficiency in numeracy is maintained over the long term. The proficiency in problem-solving in technology-rich environments is above OECD average for most of the age groups.

Figure 3: Relationship between age and proficiency in literacy (Japan and OECD average)

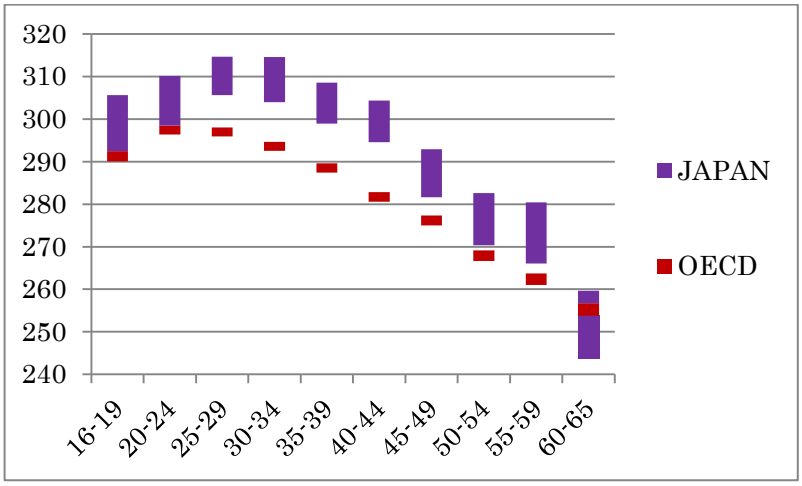


Notes: Each bar for age group indicates 95% confidence interval.
Source: Figure 3 is originally computed by NIER based on the data from Survey of Adult Skills (PIAAC) (2012)

Figure 4: Relationship between age and proficiency in numeracy (Japan and OECD average)

Notes: Each bar for age group indicates 95% confidence interval.
Source: Figure 4 is originally computed by NIER based on the data from Survey of Adult Skills (PIAAC) (2012)

Figure 5: Relationship between age and proficiency in problem-solving in technology-rich environments (Japan and OECD average)



Notes: Each bar for age group indicates 95% confidence interval.
Source: Figure 5 is originally computed by NIER based on the data from Survey of Adult Skills (PIAAC) (2012)

(2) GENDER

- In keeping with the general trend of OECD countries, on average, men have higher scores on all three skills than woman in Japan.
- However, unlike other countries, there is almost no difference between men and women with same degrees.

(3) PARENTS' EDUCATIONAL ATTAINMENT

- In keeping with the general trend of OECD countries, parents' education and proficiency show positive relationship in Japan. However, Japan is among countries where the relationship between parents' education and skills proficiency is weak.

(4) EDUCATIONAL ATTAINMENT

- In keeping with the general trend of OECD countries, adults who have not attained upper secondary education score lowest and adults who have attained tertiary education score highest. Japan is one of the countries where every qualification group has highest skills proficiency.
- It is noted that in Japan and the United States, there is sharp distinction in the distribution of literacy skills between adults aged 16-29 who have a university degree and those who do not.

(5) OCCUPATION

- In keeping with the general trend of OECD countries, adults in skilled occupations score highest, followed by those in semi-skilled white-collar occupations, those in semi-skilled blue-collar occupations, and those in elementary occupations. Japan stands out as a country with small score differences between occupational categories.

4. USE OF SKILLS AT WORK AND QUALIFICATION MISMATCH AND SKILLS MISMATCH

(1) USE OF SKILLS AT WORK

- In Japan, the use of reading and writing skills at work is more frequent than OECD average, but the use of numeracy, ICT and problem-solving skills is less frequent than OECD average.

(2) QUALIFICATION MISMATCH AND SKILLS MISMATCH

- In Japan, the percentage of workers whose highest qualification is higher than the qualification they deem necessary to get their job today (over-qualification) is 31% and is among the highest countries. The share of under-qualification is 8% and is one of the lowest countries.
- In Japan, about 10% of workers are over-skilled in literacy and 8% in literacy which is close to OECD average. On the other hand, about 3% of the workers are under-skilled in literacy and about 4% are under-skilled in numeracy.
- In Japan, over-qualified workers earn about 15% less than well-matched workers with the same qualification and proficiency levels.

5. COMPARING THE RESULTS FROM PISA AND PIAAC

(1) CONCEPTS OF PISA AND PIAAC

- The concepts of literacy in the Survey of Adult Skills and reading literacy in PISA, and the concepts of numeracy in the Survey of Adult Skills and mathematical literacy in PISA are closely related. However, there are no linking items between PISA and PIAAC and the measurement scales are distinct. The literacy and the numeracy scales used in the Survey of Adult Skills are not the same as their counterparts in PISA and cannot be directly compared.
- The content descriptions in the PISA frameworks include more knowledge of formal mathematical content than do those of the Survey of Adult Skills.
- As PISA measures the skills of 15-year-old students only, it focuses on secondary school-level. On the other hand, the survey of Adults Skills measures key information-processing skills of adults from 16 to 65 and examine the relationship between skills proficiency and participation in education and training, and relationship between skills proficiency and economic and social outcomes.

(2) SCORES OF PISA AND PIAAC (Figure 6-9)

- The target population for the Survey of Adult Skills includes the cohorts that participated in PISA 2000, 2003, 2006 and 2009.
- The survey results shows that mean reading scores in PISA (2000 and 2009) for Japan is above-average and almost average in 2003 and 2006, but mean literacy score in the Survey of Adult Skills (2012) is above average for all cohorts,

Figure 6: Mean reading score in PISA 2000 and literacy score in the Survey of Adult Skills 2012, 26-28 year-olds

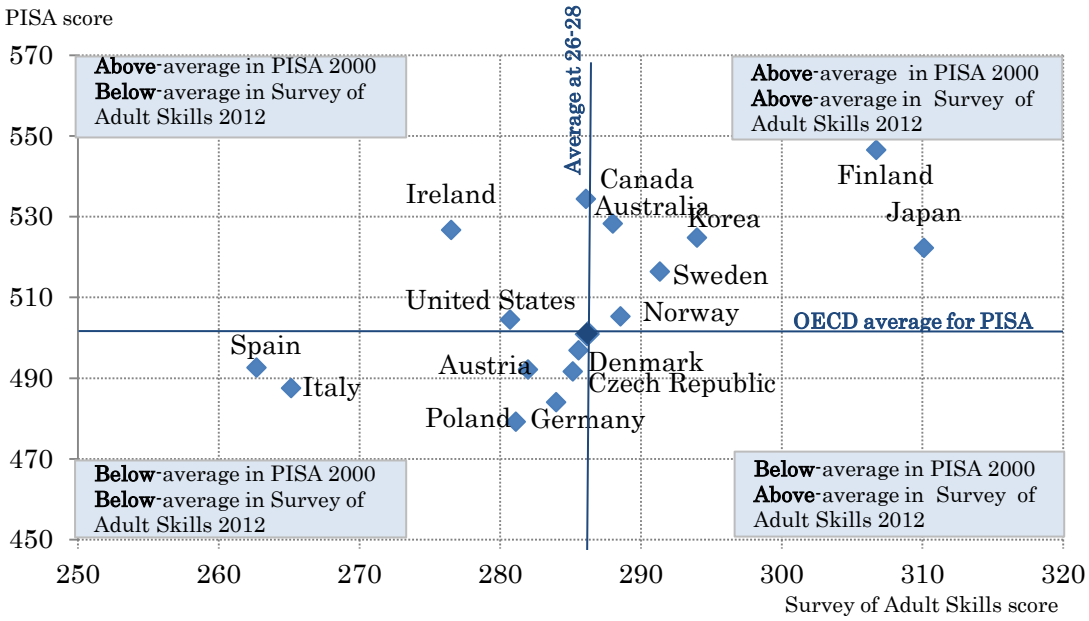


Figure 7: Mean reading score in PISA 2003 and literacy score in the Survey of Adult Skills 2012, 23-25 year-olds

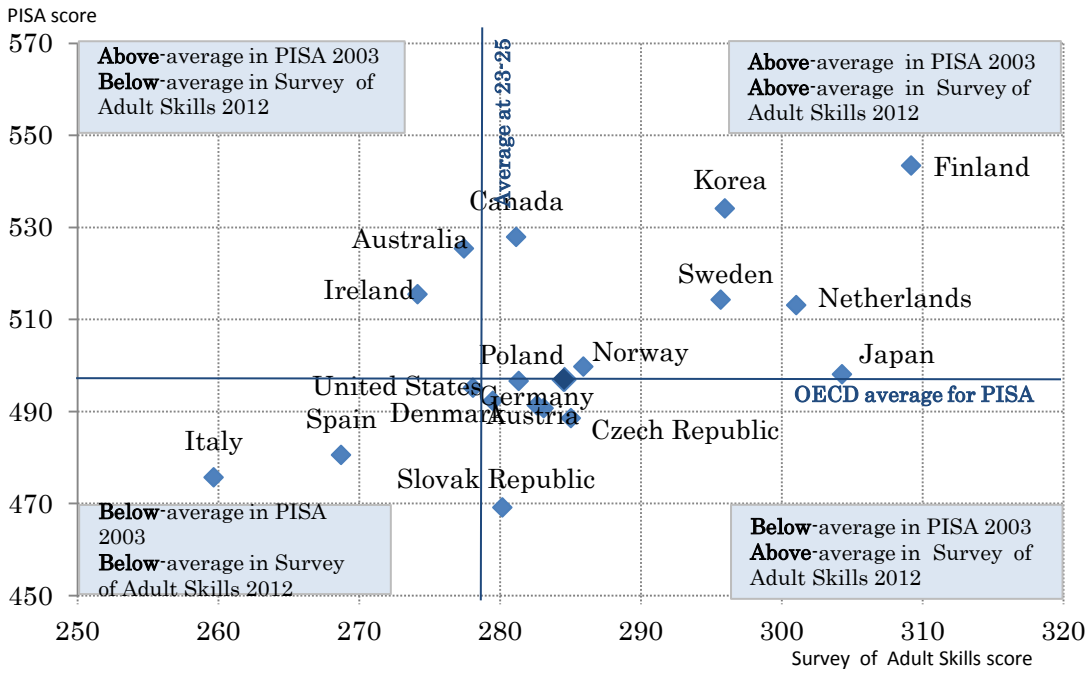


Figure 8: Mean reading score in PISA 2006 and literacy score in the Survey of Adult Skills 2012, 20-22 year-olds

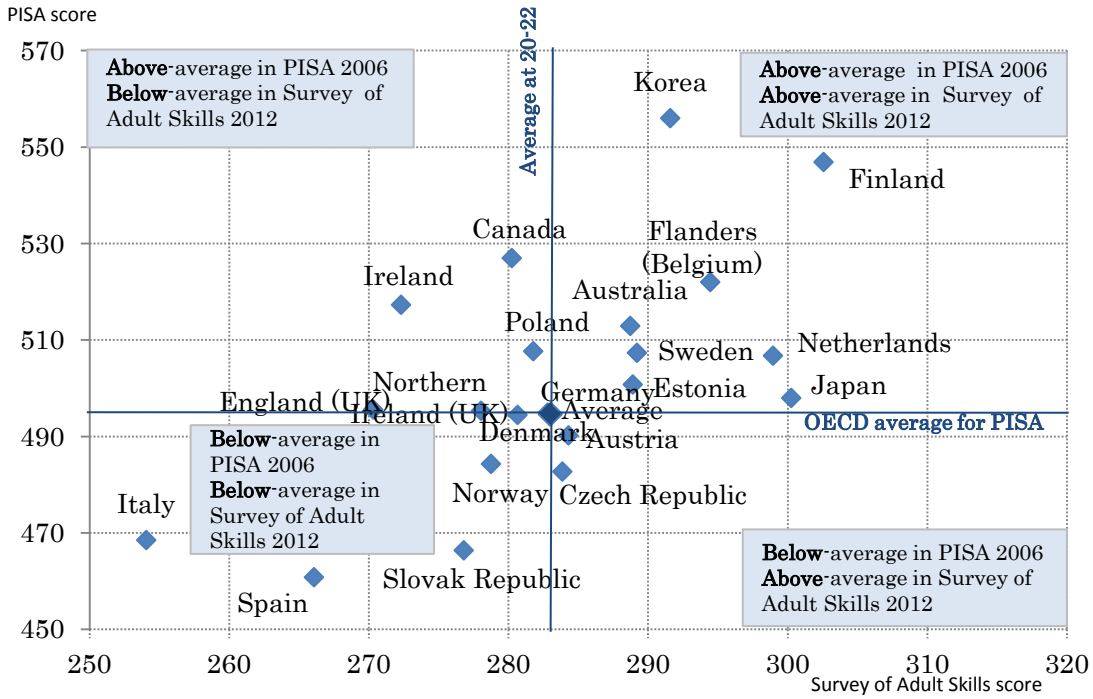
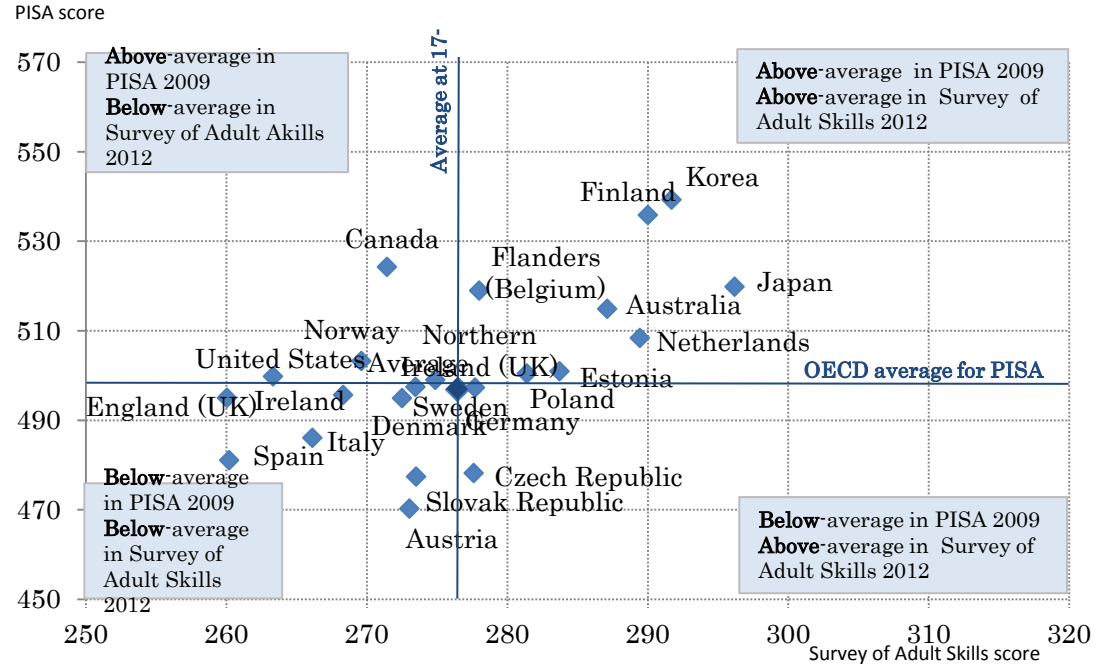


Figure 9: Mean reading score in PISA 2009 and literacy score in the Survey of Adult Skills 2012, 17-19 year-olds



5. SKILLS AND ECONOMIC-SOCIAL OUTCOMES

(1) SKILLS AND ECONOMIC OUTCOMES

- On average, literacy proficiency has positive relationship to employment and wages.
- In Japan, there is no positive relationship between occupation and literacy proficiency but this may be caused by the relatively small share of the unemployed respondents.
- The skills proficiency has a positive relationship to wages, but relationship between qualification (years of education) and wages are stronger.

(2) SKILLS AND SOCIAL OUTOMES

- In most countries, literacy proficiency has a positive relationship to social outcomes.
- In Japan, literacy proficiency has statistically positive relationship to participation in volunteer activities and political efficacy or the sense of influence on the political process. There is no statistically positive relationship between literacy proficiency and the level of trust in others and self-assessed health status. In Japan, lower levels of literacy and educational attainment are associated with negative social outcomes for all four dimensions.