

Fukuoka Growth

Growth Potential of Fukuoka City

11. Human & Innovation, Power of 1.5 million + x

(Version1.0)

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After going through the abnormal conditions of capitalism such as the Lehman crash and the Euro crisis, people in the world started to shift their focus onto the importance of “human resource” from “products” and “money”.

“Added value” which is the growth indicator of the country or region is what is generated by human. In the world trade, Japan still has a great presence in terms of generating “added value”. The ratio of added value among Japan’s exports is the world top level. Meanwhile, the number of countries and regions which have been recognizing the importance of human resources development for a long time and have focused on education is increasing in Asia, which would relatively be lowering the rating of Japan. Global-scale competition of hiring highly-skilled professionals is getting intense, and the Asian region where the level of education is rapidly rising is attracting the world’s attention. For example, Harvard University has set up a base in Asia and is diligent in securing highly-skilled professionals. Students in Asia also try to emigrate to USA and aim to enter universities like Harvard. The global mobility of highly-skilled professionals is becoming greater.

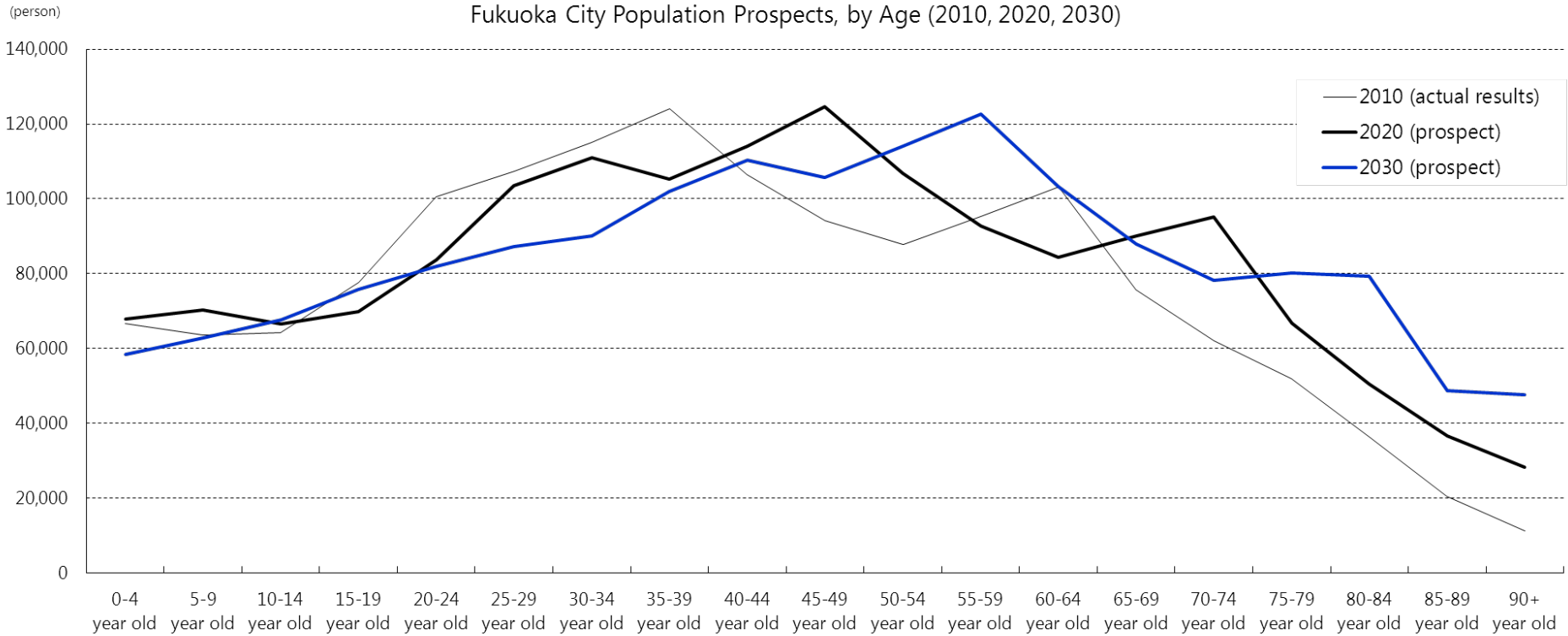
In Japan, it is only after the compulsory education when school starts to have students to focus on considering the career to pursue in the future. The academic achievement is lower in Japan than in Asian countries such as Korea and Singapore, already in the phase of elementary and junior high school.

In Fukuoka City, although the future population growth is expected, the number of young generation is expected to shift from upward to downward. It is necessary to compensate the quantitative reduction of human resources which generate added value with the improvement of quality.

In the global economy, it is urgently necessary to develop highly-skilled professionals who are competitive enough in the world, and the diversified educational environment needs to be arranged from the early stage of education before gaps occur. It is important to prevent the drain of highly-skilled professionals and to locally develop the business environment to make the best use of those talents as well as the professional knowledge, skills, and creativity that all citizens have. It is important to increase the added value in all Fukuoka area by organically coordinating these factors.

It also can be expected that the relationship to Asia and Fukuoka’s appealing point enable Fukuoka to attract highly-skilled foreign and national professionals, and generate greater power.

Improving individual productivity and accelerating accumulation of domestic and overseas human resources.



Growth of urban city is made by the participation of a large number of human resources to the labor market as well as the individual improvement in productivity.

According to the population prospect, population growth is expected for the next 20 years in Fukuoka City; however, the working age population (age 15-64) and the younger population (age under 15) are expected to take a downward turn.

The quantitative decrease of human resources in the labor market means slowing down the economic growth accordingly. In order to keep or accelerate the current growth, it is necessary to improve the human resources qualitatively to compensate for the decreasing quantity and to accumulate the external human resources generating value.

In Fukuoka City, there are many young people and a variety of educational environment, and it is important to reinforce the education of human resources leading the next generation and to keep them in the local community. The large number of foreign students in Fukuoka City can also be expected not only to demonstrate their abilities in the community but also to become the bridge between the community and their home countries, which will result in accelerating the economic growth.

International presence of human resources in Fukuoka City is not enough.

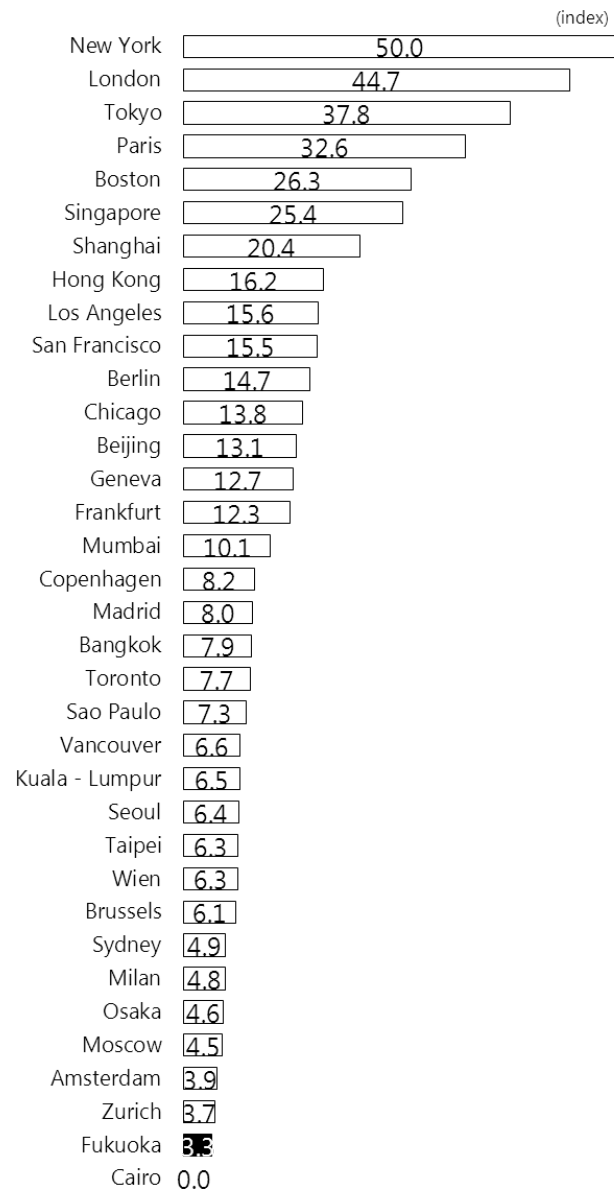
Under the global economic environment, investments gather in the place where excellent human resources gather, which creates the virtuous circle of accumulating excellent human resources. In other words, if there is no place for human resources to demonstrate their abilities, excellent human resources would drain away.

Universities in the US dominate the top world university rankings, and whether there is excellent human resources or not is also the important indicator in the global city ranking.

In the "Global Power City Index 2012" (The Mori Memorial Foundation) where Fukuoka City is selected as one of the subjected cities, Fukuoka City ranks in the 34th place out of 35 cities on the indicator "Easiness of Securing Human Resource".

Although Fukuoka City is not short of human resources because of the number of educational institutions accumulating in the city, the index evaluates that the presence of the city is not demonstrated well enough. It is important to show the international presence of Fukuoka City by enriching the educational environment in all stages such as elementary school, junior high school, high school, university, graduate university, and adult school, and preventing the talent drain and expanding the place of business activities in the area.

Easiness of Securing Human Resource (2012)



Hiring highly-skilled professionals is globally competitive.

The greater the global mobility of human resources becomes, the harder many nations focus on attracting highly-skilled professionals. (see more in the table on the next page)

Although Japan has been deploying a variety of policies to secure highly-skilled professionals, the achievement level of employing foreign workers and the usage of the points-based preferential immigration treatment for highly-skilled foreign professionals are low.

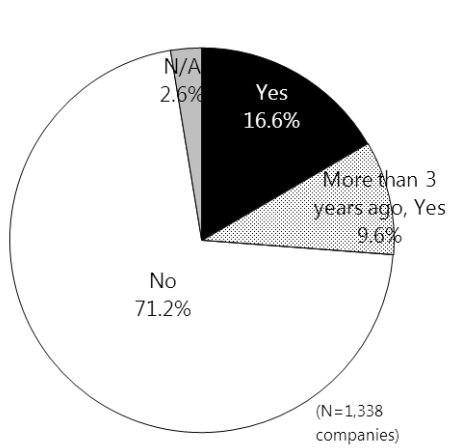
The global competition of hiring highly-skilled professionals starts from the younger generation, for example, a global-scale enterprise tries to secure highly-skilled human resources by proposing high salary even to a new graduate.

Especially in Asia where the rapid improvement of educational level has been seen, world top universities such as Harvard University and Yale University establish their bases in order to work on scouting talent. Countries whose students are willing to study abroad such as China and South Korea are increasing the number of Asian students at universities in the USA.

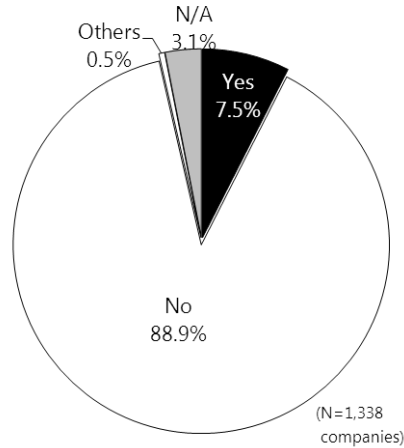
Renowned US Universities Alliances with Asian Universities and Institutes

- Harvard University: Singapore Lee Kuan Yew School, Tsinghua University School of Public Policy
- Yale University: Singapore University Liberal Arts College
- Duke University: Singapore University Medical School
- The University of Chicago: Singapore University Business School
- Massachusetts Institute of Technology: National Research Foundation of Singapore

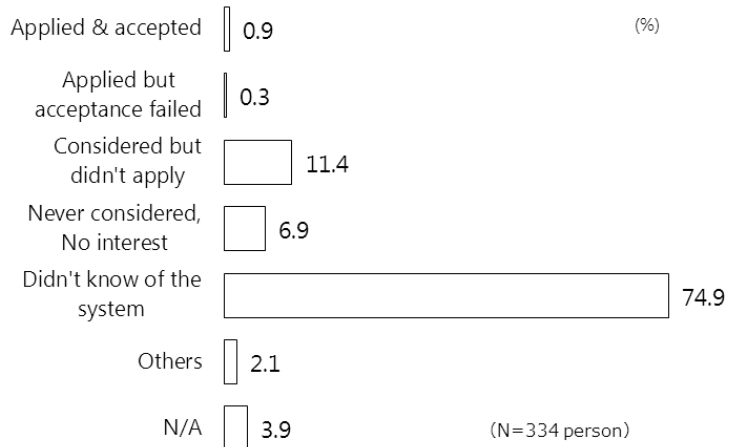
Have you hired any highly skilled foreign professionals in the past 3 years?



Do you know of "the Points-based System for Highly Skilled Foreign Professionals"?



Questioned to Highly Skilled Foreign Professionals: Have you applied/considered of "the Points-based System for Highly Skilled Foreign Professionals"?



Source: The Japan Institute for Labour Policy and Training. "企業における高度外国人材の受入れと活用に関する調査(Study on Employment Circumstances of Highly-Skilled Foreign Professionals)" (May 2013).

Each country strengthen policy of attracting highly-skilled human resources.

National Policy of Securing Highly Skilled Human Resources

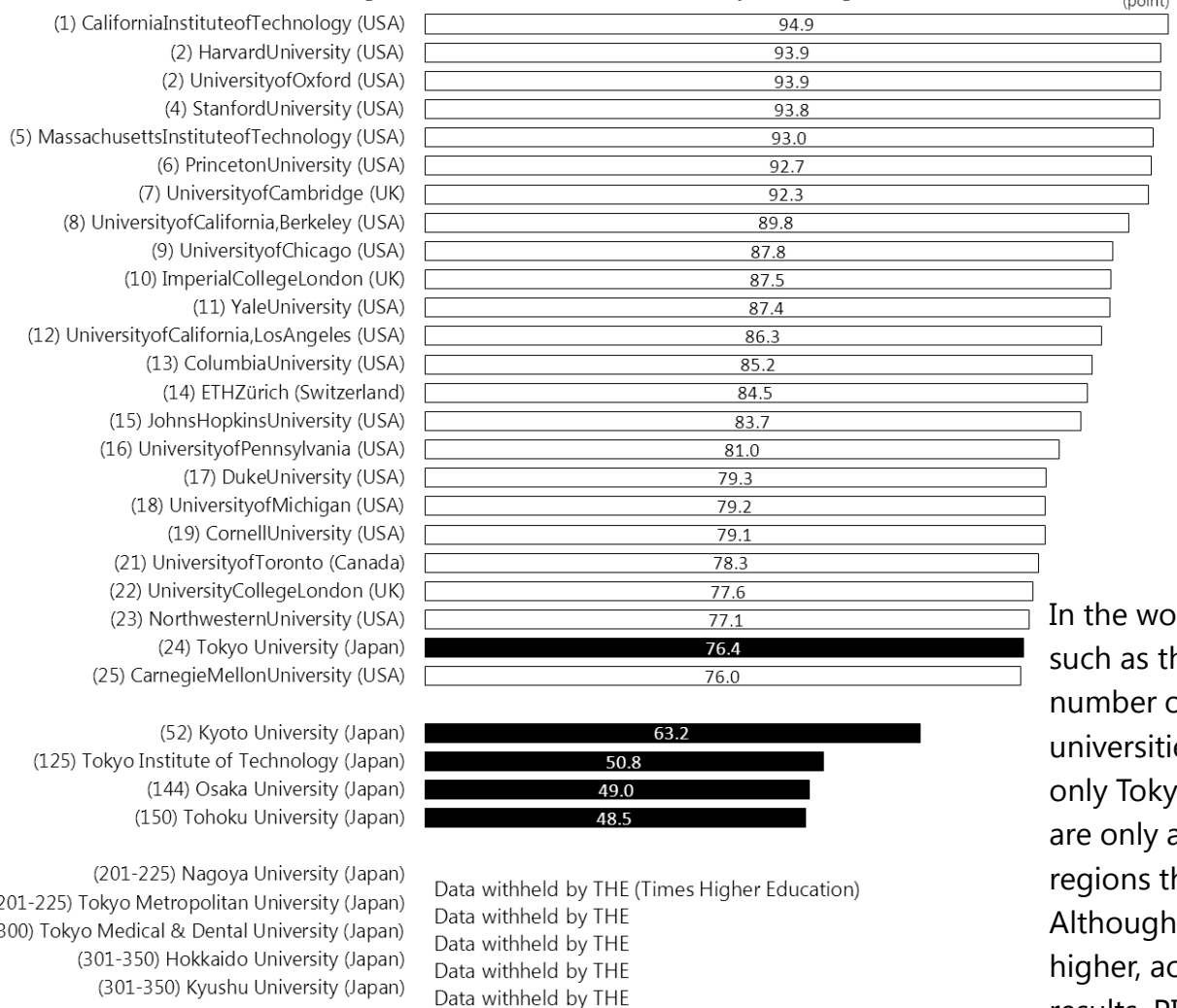
	Outline	Contents
UK	The points-based immigration system is composed of five "tiers" which replaced all the previous work permits and entry schemes. An applicant calculates the points based on the criteria such as age, past income, qualification, then apply for the permit. This points-based system enables application process efficient and clear as well as make it easy to select highly-skilled immigrants. It also helps to decrease the illegal immigrants by enforcing the residence control.	Permission can be given by following categories. Person in tier 1 and 2 can apply for the permanent residence after 5 years of employment, but person below tier 3 needs to leave the UK as soon as the visa expires, which focuses on attracting highly-skilled human resources. ①Tier 1 (Highly skilled migrant) (Investor, Entrepreneur, etc.) ②Tier 2 (Skilled worker) (Intra company transfer, Sportsperson, etc.) ③Tier 3 (Low skilled worker) ④Tier 4 (Student) ⑤Tier 5 (Youth mobility scheme, Temporary worker)
USA	The immigration system can be broadly classified into two types, for immigrant and non-immigrant. It is a unitary management system by visa system.	①Immigrant Visa: persons of extraordinary ability in the sciences, arts, education, business, or athletics (e.g. Nobel prize winner), the professions holding advanced degrees, professionals or skilled workers, special immigrants, investors, in preference order. ②Non-immigrant Visa for specialty occupation (bachelor degree or greater is required, limited to 65,000 persons), for non-specialty occupation (temporary workers)
Germany	In order to stay in Germany, "residence qualification" is required to obtain. "Residence qualification" has "residence permit" (valid for limited period) and "permanent residence permit" (valid permanently).	Permission can be given by following categories; ①Professional, technical category (highly-skilled professionals, researchers, self-employed) ②Skilled work category (specialized chefs, university graduation credit holders, company executives, special skilled workers, etc.) ③Non-skilled work category (seasonal workers, etc.) ④Refugees and others
Korea	Categorized in 3 systems: Highly-skilled Foreign Labor Policies, Employment Permit System, and Domestic Vessel Sailor Employment System.	Under the highly-skilled foreign labor policies, professionals such as highly-skilled workers and researchers are given preferential treatment. The employment permit system allows employers to hire foreign workers at the business less than 300 regular workers for maximum of 3 years when they cannot find workers domestically.
Japan	Residency Management System based on the Immigration Control and Refugee Recognition Act. Since May 7, 2012, the points-based※ preferential immigration treatment for highly-skilled foreign professionals has started ※Under the three categories of activities of highly-skilled foreign professionals: ①Academic research activities, ②Specialized/technical activities, ③ Business management activities, each talent is evaluated by item such as "academic background", "professional career", "annual salary", "research achievements", and the foreign professionals will be given the preferential treatments for points accordingly.	There are 30 categories of residence qualification depending on the purpose of stay. Under the points-based preferential immigration treatment for highly-skilled foreign professionals, activities of highly-skilled foreign professionals are categorized by three: ①Advanced academic research activities (research, research guidance or education) ②Advanced specialized/technical activities (work requires specialized knowledge or skills in the field of natural sciences or humanities) ③Advanced business management activities (operation or management aiming for the global business development) When an applicant has more than a certain amount of points for items such as "academic background", "professional career", "annual salary", preferential immigration treatment (such as grant of the "five years" period of stay, permission for the spouse of the highly-skilled foreign professional to work, permission for the parent(s) to accompany the highly-skilled foreign professional to Japan under certain conditions, preferential processing of entry and residence procedures) can be given to the applicant.

Note: Contents from Ministry of Health, Labour and Welfare. "Health, Labour and Welfare in the World 2011", documents by Ministry of Justice.

Source: Cabinet Office, Government of Japan. "Economic Financial Annual Report for Fiscal Year 2013".

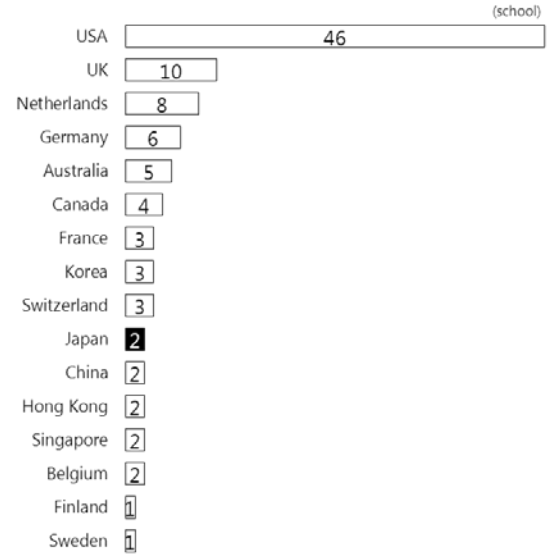
US universities dominate the world top rankings.

The Times Higher Education World University Rankings 2013-2014



*Number in brackets indicates the world rank.

World University Rankings 2013-2014
Number of Top 100 Schools, by Country, Region



In the world university rankings based on indicators such as the Citation frequency of papers and the number of students per member of the faculty, US universities dominate the top rankings. From Asia, only Tokyo University reached the top 25, and there are only a few universities in Asian countries and regions that reached the top 100.

Although Japan and other Asian countries rank higher, according to the adult academic proficiency results, PISA results by OECD and the international educational achievement test results by IEA, which are mentioned later, it indicates the situation where the world best talents in universities and higher education gather in Europe and America.

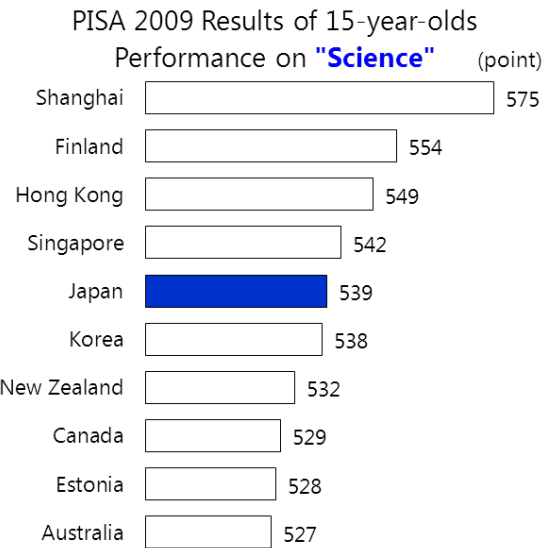
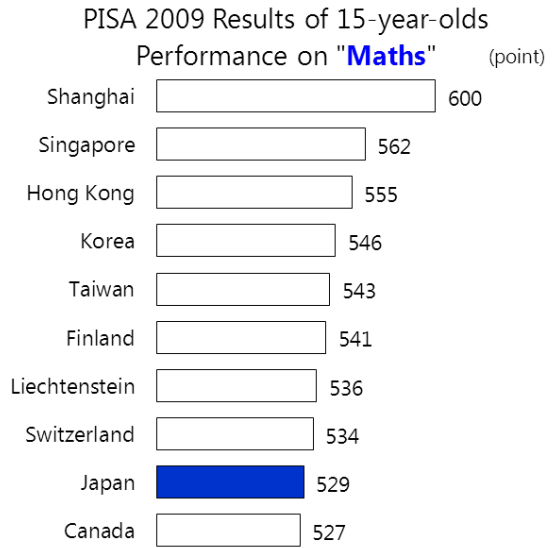
Relatively low Japanese educational level in the world.

While the global mobility of human resources is becoming greater, the ideal type of human resources is diversifying. As for the "literacy and numeracy proficiency" which is the basic talent, Japan triumphs as the top country among OECD member countries in regard to adults of 16 to 65 years old.

However, in regard to young generation of age 15 and below, China, South Korea and Singapore rank in top, and Japan falls in relative ranking. Just as the generation of highly-skilled professionals changes, it can be expected that the trend of world economy changes. It is necessary to recognize the importance of education once again.

Survey Results of Adult (16-65 year-olds) Skills

Literacy proficiency Rankings	Numeracy proficiency Rankings
1. Japan	1. Japan
2. Finland	2. Finland
3. Netherlands	3. Belgium
4. Australia	4. Netherlands
5. Sweden	5. Sweden
6. Norway	6. Denmark
7. Estonia	7. Norway
8. Belgium	8. Slovakia
9. the Czech Republic	9. the Czech Republic
10. Slovakia	10. Austria
11. Canada	11. Estonia
12. South Korea	12. Germany
13. England	13. Australia
14. Denmark	14. Canada
15. USA	15. South Korea
16. Germany	16. England
17. Austria	17. Poland
18. Northern Ireland	18. Northern Ireland
19. Poland	19. Ireland
20. Ireland	20. France
21. France	21. USA
22. Spain	22. Italy
23. Italy	23. Spain

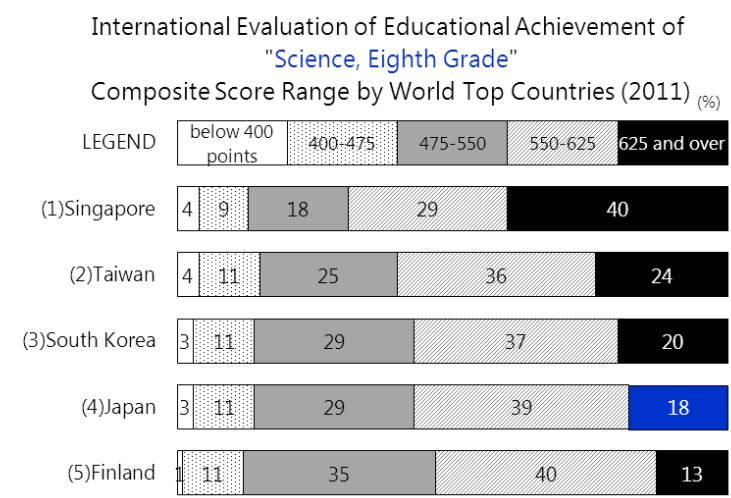
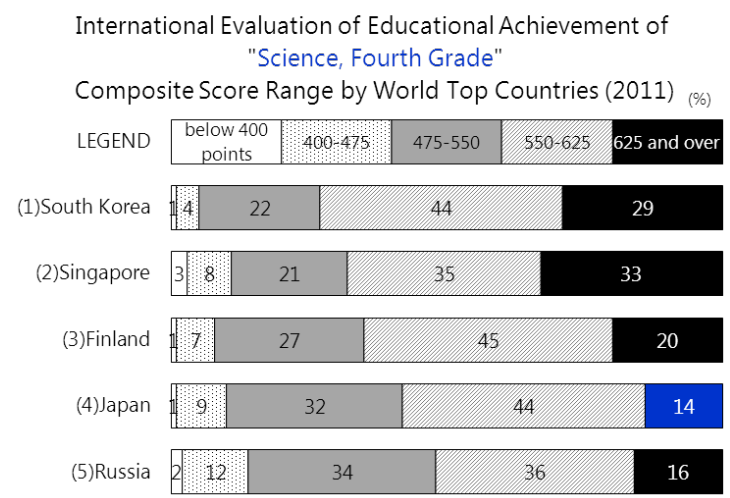
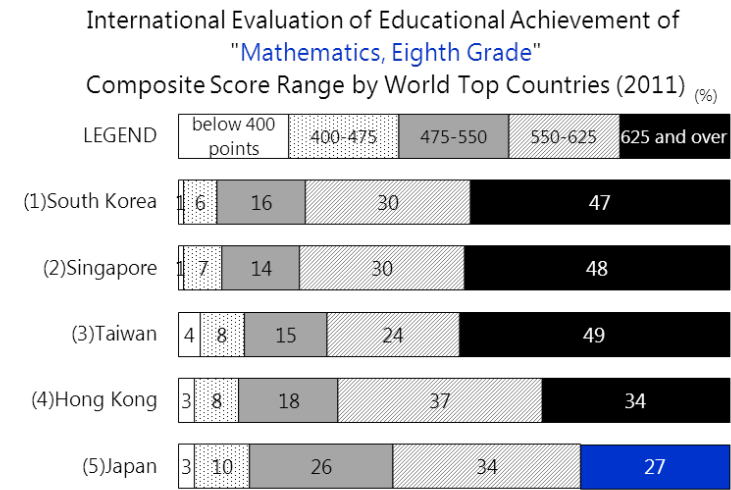
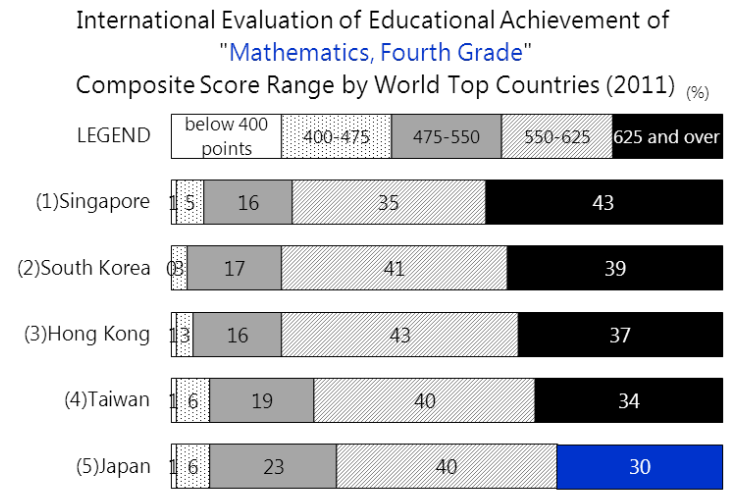


Sources: OECD. Programme for the International Assessment of Adult Competencies (PIAAC) Survey of Adult Skills (2013), Programme for International Student Assessment (2009).

Training of human resources for next generation: Academic development in Singapore, South Korea, Taiwan.

According to the international educational achievement test for elementary school and junior high school students by IEA (The International Association for the Evaluation of Educational Achievement), Asian regions dominate high ranking in the world, which matches to the current economic trend in the world.

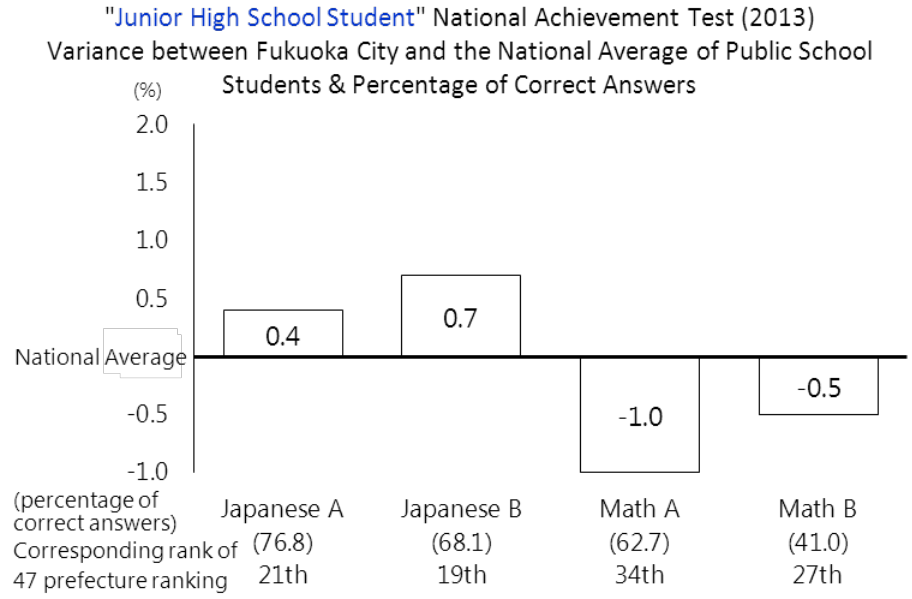
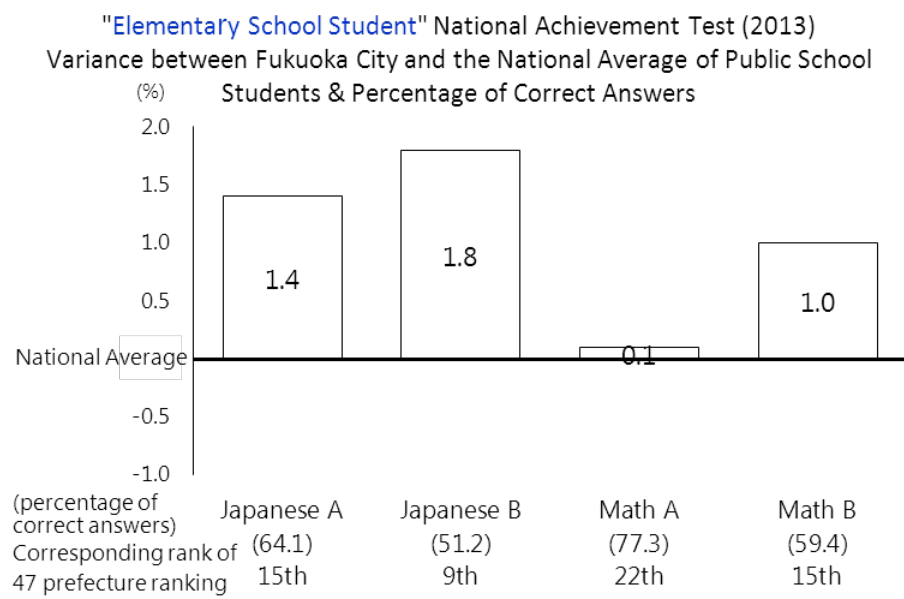
Japan ranks in the 4th or 5th place in the world; however, in the Asian region, it is lower than Singapore, South Korea and Taiwan. It is also expected that Japan relatively lowers its rank for a while since China is focusing on education as well as other countries.



Sources: Ministry of Education, Culture, Sports, Science and Technology in Japan; The International Association for the Evaluation of Educational Achievement (IEA). "Trends in International Mathematics and Science Study (TIMSS)" (2011).

During compulsory education, Fukuoka students are slightly over domestic avg.

Educational level during the period of compulsory education in Fukuoka City is higher than the national average except for mathematics of junior high school students which is slightly lower than the national average. After compulsory education, it becomes more highly competitive at high schools and universities. It is important to train internationally highly-skilled professionals while paying close attention to the educational trends not only domestically but also internationally such as in Asia.



Source: Ministry of Education, Culture, Sports, Science and Technology in Japan. "National Achievement Test" (Fiscal Year 2013).

Change of educational environment of highly-skilled human resources after the compulsory education in Japan.

Number of high schools with deviation score of more than 70 (reference)

Deviation Score (reference)	Prefecture	Administration	Number of schools		Deviation Score (reference)	Prefecture	Administration	Number of schools		
78	Tokyo	Private	1		71	Hokkaido	Prefectural	1		
	Hyogo	Private	1			Tokyo	Prefectural	3		
77	Tokyo	National	1					Private	4	
	Tokyo	National	2			Ibaragi	Prefectural	2		
76	Tokyo	Private	1			Tochigi	Prefectural	1		
	Nara	Private	1			Chiba	Prefectural	2		
75	Tokyo	Private	2			Saitama	Prefectural	3		
	Saitama	National	1				Private	3		
	Chiba	Private	1			Kanagawa	Prefectural	1		
	Osaka	Prefectural	1			Niigata	Prefectural	1		
	Nara	Private	1			Ishikawa	Prefectural	1		
			Private	1		Shizuoka	Prefectural	1		
			Private	1			Prefectural	1		
	Kagoshima	Private	1	Highest in Kyushu Region		Aichi	Private	1		
			Private	1			Mie	Prefectural	1	
			Private	2			Kyoto	National	1	
74	Saitama	Private	1				Private	4		
	Chiba	Private	2			Osaka	Prefectural	3		
	Shiga	Prefectural	1				Private	3		
	Kyoto	Private	1			Hyogo	Prefectural	1		
		National	2				Private	1		
	Osaka	Prefectural	3			Nara	Private	1		
		Private	2			Wakayama	Private	1		
	Hiroshima	National	1			Okayama	Private	1		
			Private	2		Hiroshima	Private	1		
	Fukuoka	Private(Kurume City)	1	Highest in Fukuoka Prefecture		Tokushima	Prefectural	1		
73	Tokyo	Private	1				Prefectural(Fukuoka City Minami-Ward)	1		
	Saitama	Prefectural	1				Prefectural(Fukuoka City Hakata-Ward)	1		
	Chiba	Prefectural	2				Prefectural(Kurume City)	1		
	Kanagawa	Private	1			Prefectural(Kurume City)	1			
	Kyoto	Private	2		Miyazaki	Prefectural	1			
		Private	2		Kagoshima	Prefectural	1			
	Osaka	National	1			Prefectural	1			
		Prefectural	3			Prefectural	1			
	Hyogo	Private	1			Prefectural	1			
Nara	Prefectural	1			Hokkaido	Prefectural	1			
Wakayama	Private	1			Aomori	Prefectural	1			
72	Tokyo	Prefectural	2			Akita	Prefectural	1		
		Private	4			Tokyo	Prefectural	1		
	Ibaragi	Prefectural	1			Private	7			
	Saitama	Prefectural	1			Ibaragi	Private	1		
	Chiba	Private	1			Saitama	Private	2		
	Kanagawa	Prefectural	1			Chiba	Prefectural	2		
	Aichi	Prefectural	2			Kanagawa	Prefectural	1		
		Private	2				Private	1		
	Kyoto	市立	1			Shizuoka	Prefectural	2		
		Private	3			Aichi	Prefectural	1		
	Osaka	Prefectural	3			Shiga	Prefectural	1		
		Private	2				Private	1		
	Hyogo	Private	1			Kyoto	Municipal	1		
	Ehime	Private	1				Private	1		
			Private	1			Prefectural	3		
			Private	1			Private	2		
	Fukuoka	Prefectural(Fukuoka City Sawara Ward)	1	Highest in Fukuoka City		Osaka	Prefectural	3		
Nagasaki	Private	1			Hyogo	Private	2			
	Prefectural	1			Nara	Municipal	1			
Kumamoto	Prefectural	1				Prefectural	1			
		Prefectural	1				Private	1		
		Private	1				Private	1		

Although the academic level in Fukuoka City is slightly higher than the national average under the compulsory education, the difference from Tokyo and Osaka becomes slightly obvious after the compulsory education.

There is a size difference of city and population, but many of schools with high deviation score, especially the private schools, are located in Tokyo and Osaka. Although the prefectural school in Fukuoka City rank in relatively high places, the number of schools is limited.

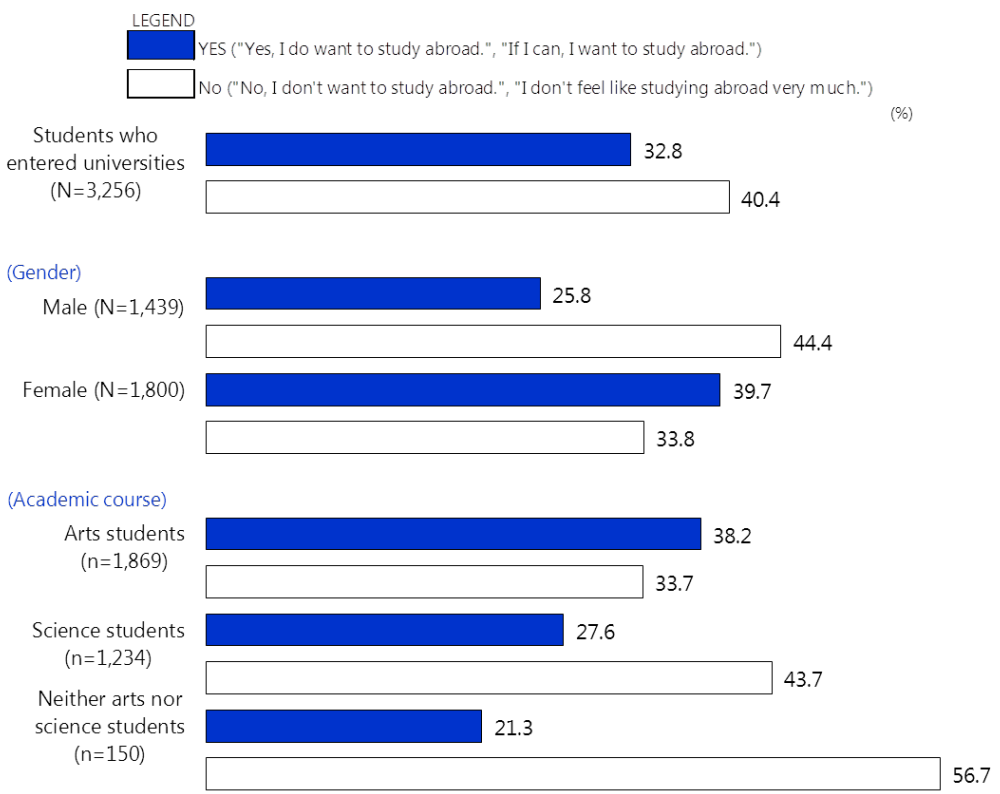
Since the difference between the universities in Tokyo and in regional cities are obvious in university ranking as well, it is expected that the accumulation of highly-skilled professionals will continue.

It can be considered that the educational environment after the compulsory education has a large impact on mobility of highly-skilled professionals.

Use of highly-skilled human resources staying in the community.

While recruiting highly-skilled human resources is conducted globally, it is important to earn international experience by studying abroad while young; however, it would be a negative impact on the local economy as a result if a student starts his/her own business or gets employed at the foreign country where he/she studies. Although there is a research result that Japanese university students are not willing to study abroad very much, it is an important task to use the highly-skilled professionals who are staying in the local community, especially in regional cities such as Fukuoka City.

Questioned to University Students in Japan: *Do you want to study abroad?* (2013)



Source: Recruit Shingaku Souken. "大学進学者の留学意向 Intention of University Students to Study Abroad" (2013).

Collaboration of abilities and roles with “Team Fukuoka”.

It goes without saying that the largest power which supports the local economy is the local people.

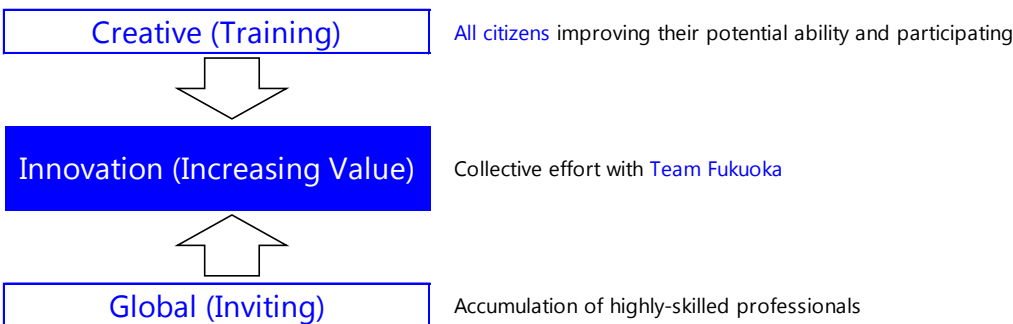
Only a handful of highly-skilled professionals cannot make the local economy grow. Creativity that generates value is what everyone has regardless of occupation or position, and it is important how to make the best use of the creativity.

Through the future, in order to improve the ability and the activity of all citizens, the educational environment and its contents need to be improved in each stages such as elementary school students, junior high school students, high school students, university students, graduate students, adults, and retirees.

In order for the local people to display their abilities, not only the individual ability but also a person who connect another person who supports others and another person who has a different ability from others are needed. The expanding connections will lead the community to create much larger value. The collaboration of diversified abilities and roles will demonstrate the large ability of local community. It is important to raise the presence of all Fukuoka as “Team Fukuoka” in the world.

With creativity of all people as a basis, innovation of “human resources” and “team” that boosts the local value creation by collaborations and stimuli from outside of the community and accelerates the economic growth is necessary.

Conceptual diagram by Fukuoka City on “Education”, “Accumulation”, “Innovation” of human resource



The identified roles:

- A**ctivator (initiating the innovation process)
- B**rowser (searching for information)
- C**reator (producing ideas for the rest of the group)
- D**eveloper (turning ideas into products and services)
- E**xecutor (taking care of everything to do with implementation and execution)
- F**acilitator (approving the new spending items and investment needed as the innovation process moves forwards as well as managing the process to prevent it getting stuck)

Source: Fernando Triás de Bes, Philip Kotler. “Winning At Innovation: The A-to-F Model” (2011)

As technology advances, it is expected that machines would play more roles which human beings had been playing. While there is concern that the sector of human beings becomes narrower, it can be expected that a variety of stress caused during the business activities would be drastically reduced because of the technological advance. For example, the language barrier might be resolved by technology such as automatic simultaneous machine interpretation in the relatively near future. This is the age where obtaining global human resources is competitive and the mobility of talent is intense. There will be more opportunities of borderless business activities and worldwide communication while being based in the local community. It can be said that as well as the technological advance it is also a challenge how to improve the individual ability of human beings which machines do not have and how to develop the environment to make the best use of those human resources.

Social Implementation Projected Year of Technologies Projected by Researchers

The Chronological Table on Future of Technologies (Future projection of technologies in sectors such as employment and education)

Year	Topic
2021	Due to the improvement of international management skills over different culture, the ability development program to understand foreign history, culture, language, law system, and sense of values is conducted.
2021	System to search across media and language.
2022	Recurrent education on postgraduate education and vocational training becomes common, and the mobility of human resources increases corresponding to social or economic change.
2022	International network human resource management system is constructed, which encourages highly-skilled professionals to move freely across borders.
2023	Method of system and design process structure that puts design production into practice with new form or at new level, by selectively using diversified human resources distributed globally and making the domestic base and the overseas base collaborate in order to solve the issues of complex global production.
2024	System (that enables employers to work and communicate with their coworkers as if they all are at the same office) to let all office workers in Japan conduct 80% of their tasks remotely.
2025	Due to the improvement of network infrastructure, there is no difference of physical place between residence and workplace. Instead of a real office, a virtual office becomes mainstream.
2025	Virtual Office System that halves the current real-office workers in Japan. (System gives workers realistic sensation as if all workers are at the same place by pointing out things in fingers, having secret conversations, sending out documents to the other's closest printer even though they all exist at the separate places.)
2026	50% of universities in Japan to establish a department which aims to educate human resource who can generate creative contents such as films, music, books, and <i>manga</i> (cartoons).
2026	Due to the development of globalization, approximately half of Japanese large enterprises to use English as an internal official language.
2027	Technology and system for human beings, robots and machines to share their workplaces and work safely and securely.
2028	At the Japanese large global enterprises that make half of sales abroad, a new collaboration system is constructed and they hire foreign workers for more than one third of key players such as executives and specialists are foreign workers.
2029	System to learn cultural background and proper noun such as place names and persons' names automatically and translate the language to another language.
2031	Technology to watch almost all TV programs all over the world without the language a language barrier through network in Japan. (in order to contribute to the international understandings)
2032	More than 20% of elementary school students study abroad or go to international schools.

Source: Ministry of Education, Culture, Sports, Science and Technology. "第9回デルファイ調査 (The 9th Delphi Survey)"(2010).