

Impact of World University Rankings on the Strategies of Japanese Universities

Katsuichi Uchida *

1. Introduction

(1) Objectives of World University Rankings

The purpose of this paper is to discuss the impact of World University Ranking (WUR) on Japanese universities from the viewpoint of university management. It is a revised version of the author's concluding remarks at the International Workshop on Global University Rankings and Improving International Competitiveness of Japan's Universities, held at the Research Institute for Higher Education (RIHE), Hiroshima University on November 5, 2015.

In 2003, Shanghai Jiao Tong University published the first Academic Ranking of World Universities. In order to enhance the academic level of higher education and to establish World Class Universities (WCU) in China, Prof. Nian Cai Liu and his team established criteria of WCU, and conducted a university ranking. An objective or intention of WUR was very clear and distinct from the beginning, and there was no intention to provide information to other addressees, such as international students. Then, the Chinese government and each university developed strategies to attain the objective of becoming WCU and they are achieving their objectives successfully. The publication of Academic Ranking of World Universities has attracted the attention of different audiences.

* Former vice-president for international affairs, Waseda University, email: uchida@waseda.jp
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Since then, many world university rankings have appeared, each having its own distinctive pedagogy, different objectives, and interesting results. However, several have been discontinued and only four rankings, Shanghai Jiao Tong University, QS, Times Higher Education (THE), and US News and World have remained influential. Among them, all except THE participated in the RIHE international workshop. Based on presentations of these three presentations, the author discusses a commercialization of university information on research and education, and the impacts of WUR on Japanese universities.

With regard to the objective of WUR, US News and World and QS have a clear objective of providing necessary information to international students. The US News and World has produced many rankings in different areas, and since 1983 the ranking of Universities and Colleges in the United States has provided useful information for students and parents. It has become a standard reference book for university applicants. As Mr. Morse explained, taking into account of global mobility of international students, U.S. News and World began to produce WUR in 2014. He summarized the methodology of Best Global Universities Rankings, a distribution of top universities within regions and countries, and a comparison between global rankings versus national rankings. The purpose of the US News and World is to provide information about universities to consumers, namely students who want to enter a university in a foreign country.

In the case of QS, as Mr. Ben Sowter explained, QS and THE jointly published WUR until 2009. Since 2010 each has published its own WUR independently. The mission of QS has been to provide useful information on the world's top 200 or 500 universities to prospective international students, and main audiences have been international students as well as international students recruitment organizations. Not only research quality but also educational standard of universities were provided, and it has developed combined criteria of both subjective and objective factors. From the beginning an objective has been to provide information to international university students recruitment organizations.

In addition to the aforementioned presentations, Mr. Matsumoto of the Ministry of Education, Culture, Sports, Science and Technology (MEXT) explained impacts of WUR on Japanese Universities and government initiatives for internationalization of them. In his presentation, he concluded that an improvement of research performances is the best way to get a better ranking, and he also mentioned several difficulties and challenges which Japanese Universities are facing.

(2) Existence of various World University Rankings

Irrespective of original purpose, WURs have been advertised by newspapers and other mass media and also referred by university peoples, such as management, faculty, staff, students, parents, alumni, and other related peoples, government offices in charge of higher education, research fund distributing organizations and so on.

The existence of four major WURs, of various types of ranking, evaluation, and assessment is of great value for users, especially university management who need useful information on the relative and comparative positions of a university in order to preserve stronger points and to rectify weaker points. As these four major WURs provide various assessments, management can understand different aspects of a university.

When one examines the ranking of a particular university among these four WURs, some occupy much the same ranking, but some rankings differ depending on the WURs. This means an unbalanced character of a particular university. A well balanced representation in major WURs is preferable. Also when one reads WURs, an absolute number or rank may be influenced by minor changes of data and methodology, so a relative position of a university is more useful, and comparison with competitors, or similar universities will clarify stronger and weaker points of a university. Not a yearly fluctuation of ranking, but midterm or long-term ranking changes, such as the last three years, or the last five year period, is an important index for a university as this shows the continuous tendency of decline or rise and makes easier identification of the reasons or causes for such phenomena.

2. Appearance of market orientated WURs: Commodification of university information

When a university intends to establish a future development plan, it pays attention to international comparisons or benchmarking. After a critical evaluation of its position, a university identifies its mission and establishes a strategy. Also national higher education system policy makers evaluate stronger and weaker points of each country's research and educational performances and establish development strategies.

In spite of the emergence of a global higher education market, there was insufficient information on the research and educational performances of

universities. Universities need this kind of information on research and education of university because it is necessary for policy makers and university management. WURs provide useful and important information on these areas, although, the original purpose of WURs was different.

The mission of WURs such as QS, THE, and the US News and World is to provide information on these fields, and QS and THE have succeeded in transforming information on university research and education performances to a commodity, a tangible thing, which is sold in the global higher education market, consumers of mobile international students and parents.

As WURs became commercialized commodities, they have been purchased by different consumers, originally by students and parents as criteria to choose a university; then by universities as a tool to recruit international students, a standard to conclude an exchange or cooperation agreement with a university in a different country, and a tool for branding and university reputation; and by the government as factors for the evaluation of university performance and as criteria to distribute competitive research funds. Then an increase in world university ranking became an objective of university development strategy and some countries required graduation of top 100 universities to receive a working visa, not a few universities and governments proposed objectives of becoming top 100 universities. Several universities attend to seminars organized by commercialized WURs in order to improve their ranking.

Before the emergence of global higher education markets, there were several national rankings on the quality of education and research within a particular country, students and parents relied on those national university ranking. From the beginning, ranking has been a commodity.

Then, because of rapid growth of global student mobility, people want an objective and scientific evaluation of educational and research performances of universities. Therefore an appearance of market orientated WURs is inevitable and WURs have been popular and attract interests of consumers.

Whether we like it or not, a commodification of university information on research and educational performance are here.

3. Evaluation of research performance

(1) Objective and subjective factors

Each WUR has its own methodology. Some use only objective data, and others use subjective factors such as a reputation of institution.

With regard to subjective factors, for example, institutional reputation is well established and deeply rooted in a society and very stable. Therefore, it is a good indicator of research performance of a university, but it depends on personal evaluation. Reviewers can know only a few universities among the approximately twenty thousand in the world; therefore, this factor tends to favor well-known, older universities.

On the other hand, objective factors are scientific and do not depend on any subjective discretion or prejudice, but there are not many reliable objective data in all research fields. There are a few plausible and useful data, such as the numbers of papers published in *Science* or *Nature*; papers of high impact factors; numbers of citation; numbers of Nobel Laureates. However, there is no consensus on how to combine and evaluate, for example, the number of research papers, reputation of journal, the numbers of citations. Both subjective and objective factors have merits and defects.

(2) Limits of data

Also, we need to recognize the following points. WURs cannot show the total conditions of research activities and performances of a university. Most WURs show the research activities of science and technology fields, mostly Mathematics, Physics, Chemistry, Computer and Information Sciences, Medicine and Life Science. In these fields, there is an established ranking of academic journals, but it is not so easy to evaluate or differentiate the quality of research by using the measurement of quality of journals and number of papers.

In the field of social sciences, most research concentrates on an examination and analysis of a particular society, and not intended to dispatch their research results outside of the national boundary. For example, in the case of law, except for general theory of philosophy of law or international public law, almost all legal studies focus on particular legal problems of its national law, and the audiences of legal research and sciences are practical and academic lawyers within a border. These considerations may apply to most of the social sciences and humanities. Therefore, WURs can't fully explain the research performances of social science and humanity, so WURs can't fully show academic performances and activities of a university.

The collection of reliable data on social science and humanities is not impossible, but there is no established international journal in the many fields of social sciences and humanities. Also because of the nature and characteristics of social sciences and humanities, except for limited fields, possibility for

establishing international journal is minimal.

Faculty members in the humanities and social sciences compose a certain percentages of faculty in most of comprehensive universities. For example at Waseda University, more than 65 percent of faculty members are in social sciences and humanities and at Hitotsubashi University, almost all are in the fields of social science. On the contrary, at Tokyo Medical and Dental University, almost all faculty belong to natural sciences. How can WURs evaluate such diversity by a single criterion?

(3) Diversity of universities

As mentioned previously, there are about twenty thousand universities in the world. We not only need comprehensive PhD- producing, research intensive universities but also ones serving the local needs of the people. Japanese universities have to redefine their own missions; to improve educational pedagogy; to innovate research activities; and to transform the governance system in proportion to size, location, discipline, educational purpose, and research levels. Generally speaking we need innovative and imaginative strategy. Because of the diversity of universities, the quality of research is only one criterion to evaluate various types of universities.

In addition, for research performances of a nation, national research institutes and research institutes of companies occupy large percentages of researchers. According to data on the composition of the number of researchers by sector, both in China and the United States, the university sector occupies ten percent of researchers. If WURs examine research performance of a country, an examination of the number of researchers and the amounts of research budgets and so on will become necessary.

Also people in non-English speaking countries may be critical of the prevalence of English. As most of research, especially in the social sciences and humanities are conducted and published in its national language. So how can WURs include research performances written in non-English journals? In addition, researchers in the humanities and social sciences emphasize the importance of academic freedom, no governmental intervention on the topics, contents, and publication of research results. This includes some political considerations, then how can WURs include these in rankings?

4. Assessment of education quality

Wikipedia lists 22 world university rankings. Each WUR has its distinctively different purpose, methodology, assessment factors and evaluation criteria. For example, the Center for World University Ranking, a Saudi Arabia based consulting organization, has published yearly ranking based on quality of education, aluminum employment, number of patents and so on.

Education is fundamental to any university, but how can WURs evaluate the quality of education?

Some WURs use the student faculty ratio, but it depends on differences of academic discipline and does not give an indicator on quality of education. For example, the student faculty ratio of a law school and a medical school differs considerably.

University education determines future employment opportunity. It is a gateway for ascending the social ladder, so naturally, information on university education tends to concentrate on employability. For example some WURs uses the number of CEOs in the top 500 global companies to evaluate quality of education, but whether the quality of education coincides with the numbers of executives of big companies is problematic. Even if there is a relation between these two, it is difficult to collect the data, as not all companies make public the name of university from which their CEO graduated. Employment practice of university graduates differs from country to country, and there is no uniform standard to evaluate employability.

The number of presidents or prime ministers, members of parliament, prestigious academic awards winners may be useful indicators, but it is difficult to assess the causation; to collect reliable data and to place different weights on these data; and to combine them into a certain standard?

Many universities emphasize social contributions of their graduates, then how can we define the meaning of social contributions and how to evaluate them?

Competitiveness for entrance to a university may reflect quality of education; it is acknowledged that achievement or quality of graduates is the result of quality education at a university. In elementary and secondary educations comparison of the achievement of fundamental acquirement of students is possible. Although there are several efforts to establish an academic standard for university graduates, there is no concrete standard for an assessment of achievement of university education.

How can we create a criterion to evaluate quality of education, or accomplishment of university graduates?

5. International student mobility: Push and pull factors

(1) Comparison of push and pull factors

One expects that an international or global ranking of education will receive more audiences, or consumers, as the mobility of students beyond national borders is rapidly increasing. According to UNESCO statistics, in 2012 at least 4.5 million students crossed their border to receive a university education, by 2020 this will increase to seven million, so an appropriate dispatch of accurate information about university education will be a necessity for any university in near future.

International mobility of individual student depends on push and pull factors. Currently, many students move based on their own decisions. An individual student needs to choose a future career. Based on academic ability and family affordability, students decide either to work globally or domestically. One who chooses to become a professional in the domestic labor market, a medical doctor or a lawyer is a typical example of students who are academically talented but not interested in global careers. Because of the growth of affluent middle class families in Asia, they are able to give a child an opportunity to study in a foreign country. Then student needs to choose a suitable university in a foreign country. Push and pull factors of international student mobility influence the choice of a place to study.

Push factors of the departing country and pull factors of the receiving country will determine direction of international student mobility. Push factors include difficulty of entering a university; economic affordability of family; social instability; and difficulty in finding employment in a home country. Pull factors include essential factors concerning quality of university itself such as academic level; educational quality; easiness of entering a university; language of instruction; tuition and fee; and the possibility of a scholarship. Pull factors also include attractive factors which indirectly related to university such as living expenses; geographic proximity; cultural and historical similarity; living environment; a multi-cultural society; safety of living; employability; and visa and immigration policy of host country.

In order to recruit international students, a university needs to improve the quality of essential pull factors to compete in the global higher education market. As mentioned earlier, high quality faculty; use of English as a medium of learning; good research and educational environment; and the possibility of a scholarship are essential factors. In addition, each university has to provide its

own attractions, a student-friendly environment and suitable facilities such as student accommodation to international students and quality of academically and socially talented fellow students who will become lifelong friends. These essential factors and attractions work as pull factors of international students.

When a student intends to study in a foreign country, he/she first chooses a country and then decides which university within a particular country. Pull factors of a university is important, however, the country where a university located is also important. Educational environment of a country is an important pull factor; this includes the cost of living; cultural proximity; personal security; and employability. Not only national but also the local environment of a university such as attractiveness of the local city and neighborhood for study and living are important factors. In order to evaluate pull factors of a university, we need to pay attentions to global, regional, national and local pull factors.

Each university needs to establish its own mission and role and define an identity and distinctiveness of a university within the framework of national strategy. Also each university accommodates different needs and demands of students, each university needs to decide what kinds of students do accept. There are varieties of options, depending on academic reputation; size; location; comprehensive or not; research intensive or education orientated; and field of study.

(2) Combination with National University Ranking

There is a possibility of alternative rankings, such as a combination of global, regional, national and local pull factors. Each country has its own official or unofficial national ranking based on both subjective and objective factors. In addition to current global ranking, a combination of an evaluation of national educational environment plus national university ranking may provide reliable data, and will be attractive and helpful to international students. This combination is another possibility of university ranking, although a global standard is different from national or domestic criteria. For example the position of a professional school within a domestic educational market, such as law or medical schools in a non-English speaking country may receive very different positions.

(3) Mobility of nation sponsored students

Historically speaking, student mobility driven by a nation state precedes

individual mobility of students. The development of a university system is of vital importance to any nation state. In order to improve academic standards of a country and a university, the government needs to invite excellent researchers and attract talented graduate students from abroad. At the same time, the government needs to send talented students to foreign universities to become future leaders of the country. The purpose of a nation state sending talented graduate students and younger scholars is to develop human resources who will be leaders in a society or university teachers, researchers. When they return they have to work to enhance the academic level of universities and society in general. When they are able to establish a competitive university education system, most of the population is able to receive a university education in their native national language. Then necessity sending young scholars to foreign countries is diminished and the number of people sent by the government would be stabilized or even reduced. Therefore, newly emerging countries need to develop social infrastructures that normally send talented young people to advanced foreign countries to receive education and training. The Japanese government has developed several schemes to attract these types of people.

6. Nation state and university in a globalized world

(1) National higher education system

The historical development of national university systems in Asian countries, especially in East Asia, was different from European Continental or Anglo-American models. Since the modernization of society, Asian countries faced three tasks: building the nation state, providing education in the national language, and establishing national universities to nurture leaders for modernization, industrialization, and democratization.

Each Asian country has established national higher education institutions, in particular a national university system, which has been financially fully supported by the national government, and the selection of students based solely on academic achievement of their high school scores and performance on nationwide unified entrance examination. Graduates from those institutions have become leaders in modernization of the nation state in many fields: they became academic, political, economic, social and cultural leaders and promoted democratization of the country; therefore, the university has become the driving force of modern nation building.

At the beginning, a national university system has depended on foreign

scholars from the West, and they were gradually replaced by native scholars using the national language in higher education institutions. Through the use of national language universities contributed to the enhancement of the academic and intellectual standards of the people. So in this sense, establishment of a nation state and national university using national language were common features of Asian countries. Japan has succeeded very well in this aspect.

(2) Role of the nation state in internationalization of universities

The science and technology level is a basis of international economic competitiveness and innovative powers of a nation state. The academic level of universities is the foundation of science and technology development. Development of a university system is vitally important to any nation state. The nation state organizes the university system; increases the quantity and quality of university students; expands the budget for university education and research; concentrically invests in important programs and fields; and enhance research and living conditions of academicians.

In order to improve the academic standards of a country and universities, international engagement becomes necessary. The state invites excellent researchers and attracts talented graduate students from abroad. At the same time, the government sends talented students to foreign universities to become a leader of the country. Exchange of scholars, scientists, and researchers becomes an important part of global strategy in education, science, and technology.

There always exist competition among states to acquire an intellectual hegemony in the region, and in the world. In Asia, we see struggle and battles among several influential countries to establish intellectual and academic superiority. The role of the nation state is of vital importance in internationalization of university.

(3) Higher education becomes an international industry

Because of the progress of its commercialization, higher education becomes an important industry to some countries. Several countries have developed national strategies to attract international students and have offered the possibility of employment in order to enhance the competitiveness of a particularly important industry. They have also offered expedited visas for work permits and provided favorable status for naturalization.

7. Identities of Japanese universities: Contribution of Japanese universities and academics to Asia

(1) University education in national language

In spite of enhanced student mobility, and glowing influence of WURs, Japanese universities have lacked strategies to increase international competitiveness of universities. How can Japanese universities deal with the impact of WUR? In order to advance an order in WUR, there is no other way than continuous enhancement of research and education quality.

In order to refine pull factors, Japanese universities need to dispatch essential characteristics of higher education. Language of instruction is an important pull factor to attract foreign students. English becomes a predominant factor; therefore, many countries and universities started to offer courses in English in order to attract foreign students.

However, language of instruction is a complicated issue in a university education, Once, Nelson Mandela said, "If you talk to a man in a language he understands, that goes to his head. If you talk to him in his own language, that goes to his heart." Communication in common language of English is different from communication through one's native, local language.

English has become the common language in business and science fields; most academic papers in natural sciences are now written in English; and English is a useful tool to communicate and connect people of different language and culture. However, there are two different levels of communication; communication using one's own language goes to the heart. Even in business society, use of the local, native language is necessary to communicate deeply with local customers.

Historically speaking, each nation state wanted to establish university education in its local, native language, as university education performed in the national language fosters academic independence. In the field of elementary and secondary education, in order to nurture good citizens or nationals, education in the national language is essential. Establishing a national language as the language of knowledge and using it to teach university education is essential. University education in a national language is the foundation to extend contemporary academic knowledges and highly developed science and technology to the majority of the population. University education in a national language has been contributing to the improvement of people's intellectual level.

However, paradoxically, countries where highly developed university education in national language exists as in Japan, Germany and France are facing the difficulties introducing university education in English. Performing education in English is necessary in order to impart its own view to foreigners, while gathering information in English is also indispensable. Those students receiving university education in countries where English is not a native language need to receive university education in a national language and to master English to communicate as well. Depending on the degree of university education development in the native language, universities need to articulate various types of combination between national language and English as a means of instruction.

(2) Common challenges for East Asian universities

The higher education institutions in the Asia Pacific Region, particularly East Asia, face common challenges. How to adapt to the changing environment arising from globalization; rapid development of science and technology; and an explosion of population and demographic changes are common challenges.

Globalization has huge impacts on many fields of society. In the university, English became a common language and globalization facilitates free mobility of students, faculties and staffs of higher education. In order to facilitate free mobility of students and faculties, information on higher education institutions needs to become open, public, and accessible. This open access to university information has been commercialized by WURs and Japanese universities need to dispatch fundamentally important information on higher education.

The second important challenge is the rapid development of science and technology in many fields. For example, one notices rapid developments in information technology and computer science. Uses of the internet are equal to the invention of electricity. These developments are a valuable foundation of the next industrial revolution, but the control of a vast number of personal information by the government produces conflict over the protection of personal information and privacy. Also development of life science began with the discovery of DNA, and the progress of life science has successfully analyzed genes. Gene-therapy, generic engineering will produce valuable fruits to human life, but face severe issues of life ethics. Use of nuclear energy is useful for controlling emissions of CO₂, and reducing impact on global climate changes; however, an accident of a nuclear power station may produce severe effects on the life of local people and industry. Development of science and technology is

necessary and universities must facilitate their development, but at the same time need to control their side effects as well.

The third challenge is an explosion of population and demographic changes in this region. In 2014, the earth's total population was 7 billion and 162 million, and in the year 2030 the population will reach to 8 billion and 425 million. Then, India will reach to 1 billion and 476 million; China 1 billion and 453 million; the United States 320 million; Indonesia 293 million; Nigeria 274 million; Pakistan 232 million; Brazil 223 million; and Bangladesh 185 million. Through rapid increase of population in South Asia and Africa, distribution of population on the globe will significantly change from today. So, how to secure energy which is necessary for population growth and economic development, and how to provide good education to growing numbers of population will become important questions. Also progress of an aging society will change the demographic distribution of many East Asian countries; how to provide health care and social welfare system to a growing number of aged populations become serious social and political issues. Universities must provide a prescription for these issues.

(3) Solving common challenges

Japanese universities will be forerunners in solving three major trends which will shape the next decades. They can provide lessons to other countries. Since the Meiji period, Japan has succeeded in modernization and especially since the end of the previous Asia-Pacific war, she has developed science and technology; achieved democratization; and realized an efficient market economy, an important factor is a development of nationwide university education system. Since 2000, Japan has 16 Nobel laureates in physics, chemistry and medicine, all of whom received university education in Japan. This is an example of success of university education in Japan, although Japan is now facing serious challenges. Japan has developed its own university system using western models on the base of traditional education so the lessons from these experience may be useful to other countries.

Asian countries face common issues and challenges such as an aging population and smaller number of birth rate; declining population; food and energy supply to sustain glowing numbers of population; preservation of local identity in the globalizing world; therefore, academics in Asian countries, especially in the fields of humanities and social sciences, need to cooperate in solving their common issues. Collaboration among various academic discipline,

and cooperation among the government, industry and universities become necessary. In addition, in Asian countries, there is much diversity in the size of countries; population; economic development; higher education development; and local differences within a nation. Therefore facing and dealing with these global issues from diverse perspectives is an advantage of cooperation between Asian universities.

(4) Necessity of developing a new academic paradigm

With regard to research in Asia, most academic disciplines have been developed in Western Europe and Anglo American society, therefore academic concepts and logic pre-supposes European society. Simple application of western academic models to Asian society can't produce good results. In solving Asian issues, Asian scholars, Japanese scholars in particular, need to develop a new academic paradigm and concepts which will facilitate solving social issues common to Asia, Europe and Anglo American societies. Theoretical contribution from Asian researchers, Japanese academics in particular, become imperative.