

Analysis of Korean University Reputation Ranking based on Key Reputation Rank Factors of the US Best Research University

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Abstract

The purpose of this study is to find possible answers to the question of "why the reputation rank of Korean universities is often not consistent with the rank of best universities?" The samples of Korean institutions in this study were chosen by referring to "2013 JAI (JoongAng Ilbo) Daily University Rankings." The difference between the reputation of the university ranking and ranking of university evaluation in Korea were based on traditional perceptions of university ranking or social reputation, even the ranking has been changed based on current university evaluation index. The results of this study also indicated that the rank of Korean universities by the American standard reputation criteria was found to be almost in the same pattern with the rank of the overall national standing. The reputation ranking of Korean universities seemed to change by the American standard reputation criteria. We also need to develop new reputation questionnaires based on those core variables to reduce discrepancies between the university overall and reputation ranking.

Globalization has accelerated competition among colleges and universities both nationally and internationally. Currently, colleges and universities in most countries run races to obtain better status in their domestic higher education markets. Furthermore, with the increase in Informational Technology, universities tend to stress international competitions more than domestic ones. The emphasis on making world class universities, has been made even stronger by government-led systematic supports. Korea is one of those countries, that provides support schemes such as “World Class University Project” to the universities which are ready to compete with internationally renowned universities by providing the financial and administrative infrastructure for developing world class departments through the input of highly-qualified scholars (Jang & Kim, 2013).

In the center of the current excessive competition among universities, there exist university rankings made by magazines and media. University rankings, in general, provide people with a new angle from which to observe the development of universities, contribute to the presentation of and reflection on values of higher education, and promote the healthy and sustainable development of higher education (Wang, 2009). And, the good news is, that the positive aspect of rankings is they are constructed to reduce the chances of bias and distortion (Sadlak, Merisotis, & Liu, 2008). So, in spite of the warning of Altbach (2013) that the many problems connected with rankings, such as ignorance of teaching, should be kept in mind by individuals and policy makers relying on them in making decisions, rankings play an important role as a particularly useful lens for the study of power in higher education, as they are used to confer prestige allocate resources, set agendas, satisfy the need for national higher education systems, establish hierarchical relations between nations, improve demands of accountability and normative adaption (Pusser & Marginson, 2013). As an example of the lens for studying the power in higher education, Hartog, Sun, and Ding (2010) report that, the positive relationship between university rank and the wages of holders of bachelors degrees is a key element of university power. They report that bachelor degree holders who have graduated from one of the 100 universities in the top ten-ranked positions, earn 23% more than bachelor degree holders from a university ranked between positions 400 and 500. Majority of rankings, whether it is national or international, have the results of reputational survey. Rankings, whether national or international help to create the public perception of the Value of the university. Reputation, along with the term “image,” is considered to be largely an interpretation of perceptions of how an organization is seen from the outside (Steiner, Sundstöm, and Sammalisto, 2013). “Reputation” is defined as referring to social cognitions that stay through the years in external stakeholders’ minds (Rindova, Williamson, Petkova, & Sever, 2005). While “image” is generally

defined as an immediate, more short-term, external stakeholder perception founded on impressions and attitudes about the organization (Heding, Knudtzen, & Bjerre, 2009). In creating and preparing a reputational survey, sponsoring magazines and media question educational experts, recruit personnel of enterprises, or peers to provide information. Sometimes, results of a reputation survey influences university rankings in a large way. The "QS (Quacquarelli Symonds Limited) World University Rankings," as an example, places 50 percent of ranking weights (40 percent from academics and 10 percent from employers) into reputation survey results. (Altbach, 2013). The importance of the reputational survey is not ignored even in university rankings in Korea. Korea has been appeared as one of countries, along with Saudi Arabia, which has the set as a priority to improve their universities' positions in various rankings and are allocating funds and applying pressure on universities to participate in the Ranking/Reputational survey research. (Altbach, 2013).

A closer look at previous rankings of Korean universities reveals that their reputation rank of Korean universities does not always measure up to the ranking results of reputational surveys of best universities. This pattern emerged when 2013 national rankings of Korean universities, were reported by one of Korea's prestigious daily newspapers, "JoongAng Ilbo (JAI)", were published. JAI is the only authentic organization reporting rankings of the national universities in Korea, similar to the reports generated by "US News and World Report" in the United States." JAI university evaluation results, just like the "US News and World Report" evaluation results, provide evidence of the impact rankings have, not only on Korean consumer behavior, but also on the institutions that serve them (Sadlak, Merisotis, & Liu, 2008).

When looking into the 2013 national rankings of Korean universities, we can see that, with the exception of one university, the rank order of the top-ranked best three research-oriented universities in composite scores is reversed when they are ranked by the results of the university reputation survey. Why is that happening? What makes these two rank orders not consistent? Do educational experts, corporate leaders, or peers not have accurate information about the quality of Korean universities? Are there any factors causing inconsistency between the results of the university excellence by the measuring variables of the media and the value of the survey groups on the true university excellence? These questions have prompted great curiosity and the impetus among the academic community research to seek answers as to the reasons why the reputation rank of Korean universities is often not consistent with the rank of best universities.

Therefore, the purpose of this study is to find possible answers to the question of “why the reputation rank of Korean universities is often not consistent with the rank of best universities?” For this purpose, this study seeks to find core variables representing “university reputation” through a review of the literature. By applying these core variables into the top-ranked best three Korean research-oriented universities in their reputational order, and by re-ordering those three universities based on the results of the composite scores calculated by the core variables, the researchers will be able to discover and analyze the differences between the reputation rankings of Korean universities by Korean media and the reputation rankings by the results of the composite scores calculated by the core variables, using order statistical methodology. The following comparisons can be made between the reputation rankings by the core variables and the rank of best universities. Finally, based on the results of those comparisons, possible reasons of the rank differences can be explained and supported.

METHODOLOGY

Samples

The samples of Korean institutions in this study were chosen by referring to “2013 JAI Daily University Rankings,” “2013 QS (Quacquarelli Symonds Limited) World University Rankings,” and the “Times Higher Education World University Rankings (THE).” Six highly-ranked universities, which possessed all three of the university rankings, were chosen for study. However, for the purpose of this study, comparing comprehensive research universities, two engineering/natural science-focused universities were excluded. In addition, due to the absence of critical data for this study, one more university was excluded. Therefore, three universities were, finally selected as the sample for comparison and analysis. Those are named as A, B, and C in alphabetical order. University A has the highest ranked score in reputation, University B is ranked second, and University C has the lowest ranked score in reputation. In the overall national standing of these three universities, University C is ranked highest, and then University B, and A in that order. The result is the opposite of the reputation rank.

Variables and Datasets

The purpose of this study is to find whether there are university ranking differences in Korea, when major characteristics or properties of the American research universities’ reputation are applied. For this, seven core variables of reputation of the American research universities, which are presented by the

institutional prestige and reputational study of Volkwein & Sweitzer (2006), are used. Those are as follow: 1) total enrollment, 2) student-faculty ratio, average full professor salary, percentage of fulltime faculty, faculty productivity, graduation rate, and alumni giving rate. They found these variables to be very influential on reputation of research-oriented universities by regressing university prestige-related variables on "academic reputation" or "peer assessment" scores of the studies published in "US News & World Report". Originally, they reported one more variable: "Median SAT Score for representing reputation characteristics of research-oriented university" in addition to those seven variables. But, in Korea, the students' scores of university entrance exams, which are equivalent to SAT of the US, are confidential, so those data are not open to public. That is why the SAT equivalent exam score variable is not included in this study.

The data are from three different sources, which include "JoongAng Ilbo," "Korean Council for University Education," and "Kyosu Shinmun (Newspaper)." Most of the variables used in this study, except the variables of "total enrollment," "graduation rate" and "average full professor salary," are from JAI. JoongAng Ilbo, one of the leading Korean daily newspapers, which has published rankings of Korea's colleges and universities every year since 1994, and has become one of most influential ranking reports. It reports rankings in both best universities and disciplines. The university ranking data has four areas of evaluation: 1) Educational system and finance, 2) Faculty and research, 3) Internationalization, and 4) Reputation. The composite scores of the weighed four factors determine the rank of universities. For this study, 2013 JAI Daily University Rankings (2013), revealed in last October, are cited.

Korean Council for University Education, KCUE, reports annually basic and core information of all the Korean universities through online in order to meet "the Act on Information Disclosure of Educational Institutions," which ensures the responsibility to be informed to the public, promote academic and policy research, ensure participation in school education, and to improve the efficiency and transparency in educational administration (KCUE Academy Information in Higher Education in Korea (2013). In the report, detailed information of students, faculty, governance and administration, and finance are included. For the variables of "total enrollment" and "graduation rate" the 2013 report (KCUE Academy Information in Higher Education in Korea, 2013) is used in this study.

Kyosu Shinmun (Newspaper)'s special report on average faculty salary has also been used for this study. Kyosu Shinmun is the newspaper in which major readers are professors, administrators, and

other members who are related to post-secondary education. Average faculty salary of this study is based on the year 2010, and the report was issued in October, 2012 (Kyosu Shinmun 2010 Average faculty salary, 2012). Descriptive statistics in Table 1 show the set of variables used in this study.

Table 1. Descriptive Statistics for Comparison

| Variables | Data source | Description |
|-------------------------------|---------------|--|
| University reputation score | JoongAng Ilbo | <ul style="list-style-type: none"> - Based on survey of 7 questions and Database of graduating students' employment - Distributed to 1,100 personnel managers of corporations/ enterprises, government officials, or teachers/professors - Scores are scaled to 0-100 |
| Student-faculty ratio | JoongAng Ilbo | <ul style="list-style-type: none"> - Only fulltime students and faculty are used for analysis |
| Percentage faculty fulltime | JoongAng Ilbo | <ul style="list-style-type: none"> - Calculated by the ratio of current # of fulltime faculty members to numbers of fulltime faculty members required by government |
| Faculty productivity | JoongAng Ilbo | <ul style="list-style-type: none"> - Based on composite scores of journal publications, grants, and the others considered as research productivity - Scores are scaled to 0-100 |
| Alumni giving rate | JoongAng Ilbo | <ul style="list-style-type: none"> - Calculated by the ratio of total amount of 2012 donation to the 2012 annual university revenue |
| Total enrollment | KCUE | <ul style="list-style-type: none"> - Only fulltime students are analyzed |
| Graduation rate | KCUE | <ul style="list-style-type: none"> - Calculated by the ratio of # of freshmen of academic year 2009 to # of graduates of academic year 2013 |
| Average full professor salary | Kyosu Shinmun | <ul style="list-style-type: none"> - Based on the faculty salary of year 2010 - Dollar unit is used - Korean "won" - the US "dollar" exchange rate is set up for 1000 won-1 dollar. |

Data Analysis

Simply designed ordinal ranking statistical method is used in this study. Cliff (1993) says ordinal methods are more robust than classical methods in the face of violations of the distributional or equivariance assumptions that underlie the traditional inferences and are equally or more, sometimes much more, powerful. In this study, sampled universities are ranked by core variables, and then the rank numbers are added to each university. The cumulated numbers of each university are ordered, again, and then compared. Here, for example, the university having the lowest cumulative scores becomes the first, and the second lowest university becomes the second, and all the others are ordered in the same manner.

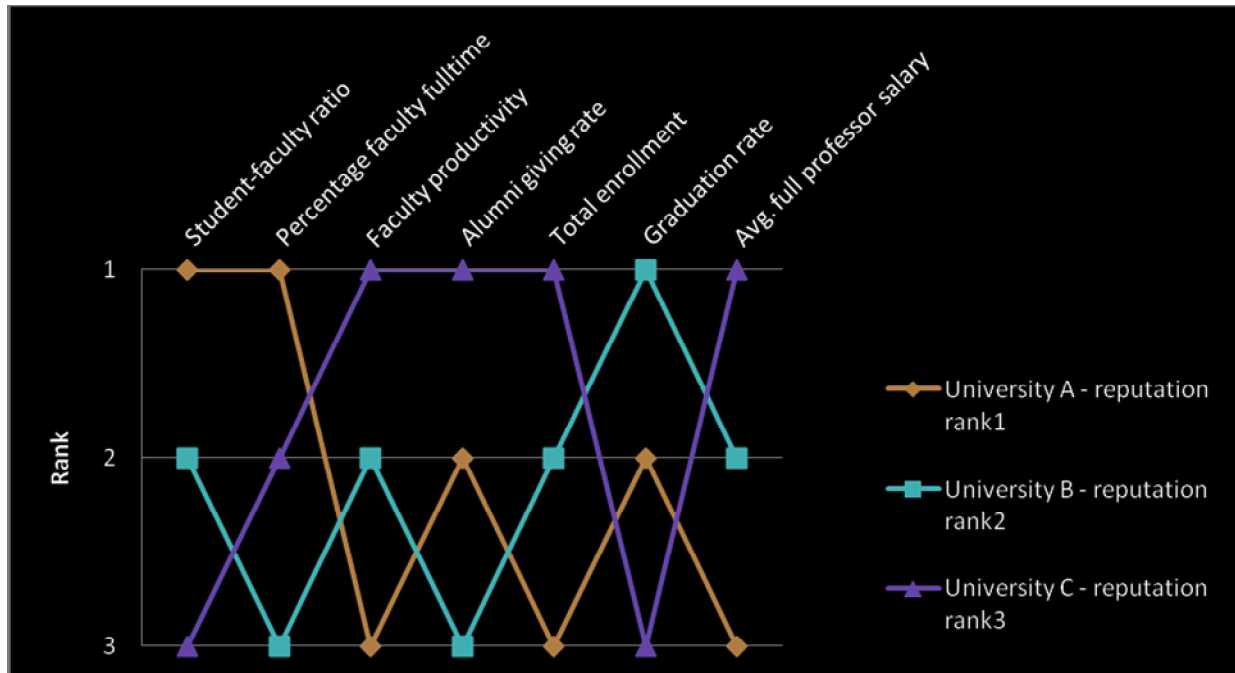
RESULTS

Table 2 shows numerical variables in ranked order for Korean universities by JAI's reputation. When those three universities are compared by the seven core variables of reputation of the American research universities, which are revealed by an institutional prestige and reputation study of Volkwein & Sweitzer (2006), the ranks change in a large scale. Figure 1 reveals the rank change. The first-ranked University A by JAI's reputation score keeps its first rank only in two variables, which are student-faculty ratio and percentage of fulltime faculty. Furthermore, in three of seven variables, which are faculty productivity, total enrollment, and average fulltime faculty salary, university A is ranked lowest. On the other hand, the lowest ranked university C by JAI's reputation takes its first position in the four variables of faculty productivity, alumni giving rate, total enrollment, and average full professor salary.

Table 2. Numerical values of variables for each university

| Variables(unit) | University A | University B | University C |
|---|--------------|--------------|--------------|
| | <rank 1> | <rank 2> | <rank 3> |
| University reputation score by JoongAng Ilbo (points over 100) | 91.50 | 87.02 | 87.00 |
| Student-faculty ratio (students) | 16.72 | 19.23 | 20.11 |
| Percentage faculty fulltime(%) | 118.7 | 86.9 | 89.8 |
| Faculty productivity(points over 100) | 70.57 | 71.18 | 76.86 |
| Alumni giving rate(%) | 6.002 | 4.363 | 7.541 |
| Total enrollment(students) | 16,712 | 19,226 | 20,105 |
| Graduation rate(%) | 101.35 | 119.99 | 106.73 |
| Average full professor salary(\$) | 94,845 | 98,205 | 154,680 |

Figure 1. Rank order of variables for each university

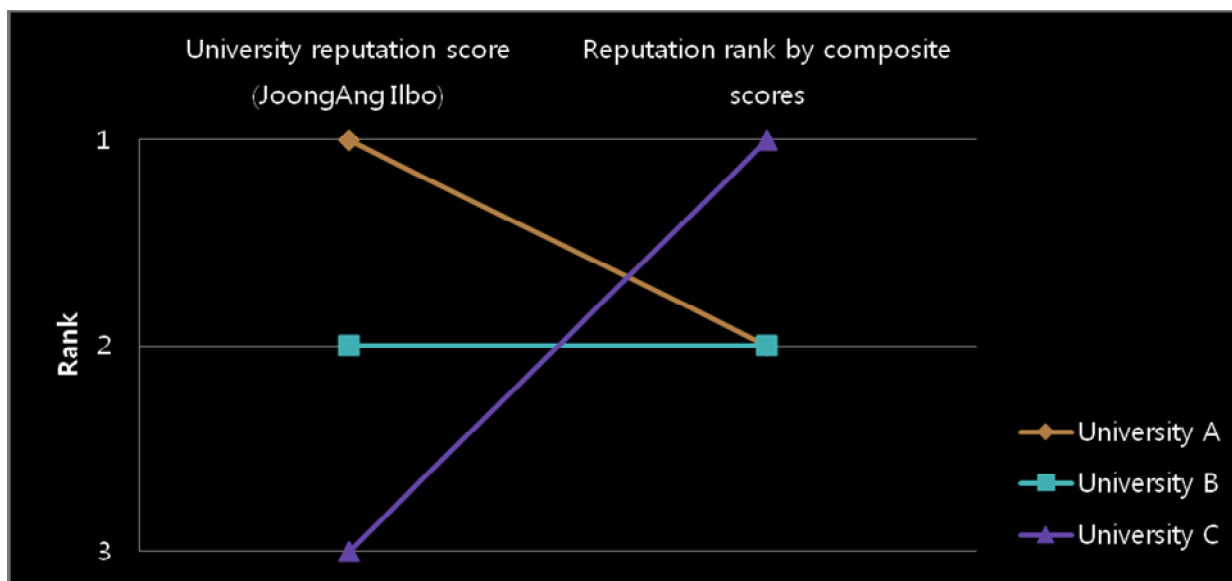


The reputation in Korean universities is ordered by the seven core variables of reputation of the American research universities of Volkwein & Sweitzer (2006). It is analyzed by 'the rank order statistical method.' The ranks of each university in every variable are accumulated, and the total accumulated scores are calculated in Table 3. Based on the accumulated scores, composite scores of rank order, the reputation rank is arranged. As shown in Table 3, the lower the composite scores of rank order, the higher the reputation rank. University C ranks first, following by University A and B. Figure 2 shows the rank changes between Korean JAI's reputation ranks and the US research universities' reputation rank. The reputation ranks of Korean universities seem to change by the American standard reputation criteria. But the rank of Korean universities by the American standard reputation criteria is found to be almost in the same pattern with the rank of the overall national standing of these three universities, in which, University C is ranked first, and then University B, and A in descending rank order.

Table 3. Rank orders of variables for each university

| Variables | University A | University B | University C |
|--|-------------------|-------------------|-------------------|
| | Reputation rank 1 | Reputation rank 2 | Reputation rank 3 |
| Student-faculty ratio | 1 | 2 | 3 |
| Percentage faculty fulltime | 1 | 3 | 2 |
| Faculty productivity | 3 | 2 | 1 |
| Alumni giving rate | 2 | 3 | 1 |
| Total enrollment | 3 | 2 | 1 |
| Graduation rate | 2 | 1 | 3 |
| Average full professor salary | 3 | 2 | 1 |
| Composite scores of rank order | 15 | 15 | 12 |
| Reputation Rank by composite scores | 2 | 2 | 1 |

Figure 2. Rank order changes



DISCUSSION AND CONCLUSION

Reasons for the research results

The difference between the reputation of the university ranking and ranking of university evaluation in Korea is based on traditional perceptions of university ranking or social reputation, even

the ranking has been changed based on current university evaluation index. Current university ranking is determined based on the university evaluation index, but other factors such as government financial support, employment rate, names of graduated universities producing CEOs, politicians, and government officers, and tuition can be affected on the university ranking beyond the results of JAI.

The results of this study also indicated that the rank of Korean universities by the American standard reputation criteria was found to be almost in the same pattern (University C ranks first, following by University A and B) with the rank of the overall national standing of these three universities (JAI), in which, University C is firstly ranked, and then University B, and A in order. The reputation ranking of Korean universities seems to change by the American standard reputation criteria. We also need to develop new reputation questionnaires based on those core variables to reduce discrepancies between the university overall and reputation ranking.

Limitations

First, the ordinal ranking statistical method is considered robust in the face of violations of the distributional or equivariance assumptions (Cliff, 1993). It still has weaknesses in the finding of the relative differences among universities. With this reason, more finite and specified statistical analyses in relative perspectives cannot be executed except group comparativeness of summation of ordinal rankings. Based on the descriptive statistics, simplified ordinal ranking is just analyzed. Second, key variables used for comparativeness among the sampled universities are based on and chosen from the institutional prestige and reputational study of Volkwein & Sweitzer (2006). But, those variables are not verified again through other results of studies in order to use in this study. The various combinations of these variables have been chosen repeatedly in almost all of the national and international ranking media or magazines. Third, this study compares a sample of just three high- reputation universities in Korea. This sample size is not large enough to validate a research hypothesis. So, this study may better be considered as one of case studies which report opinions about university rankings, not as one of largely generalized research results.

Future recommendation

This study is more likely a case study of analyzing the ordering inconsistency of university reputations and their ranks. Based on the results of this study, future research needs to be done more

systematically in terms of social and cultural factors which cause the inconsistency. In addition to this, more extended nation-based comparative international study regarding university reputations and ranking order, such as Asian universities vs. European universities needs to be done.

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