MERITOCRACY OR REPUTATION? HOW UNIVERSITY RANKINGS MATTER

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Abstract:

University rankings have gained prominence in tandem with the global race towards excellence and as part of the growing expectation of rational, scientific evaluation of performance across a range of institutional sectors and human activity. While their omnipresence is acknowledged, empirically we know less about whether and how rankings matter in higher education outcomes. Do university rankings, predicated on universalistic standards and shared metrics of quality, function meritocratically to level the impact of long-established reputations? We address this question by analyzing the extent to which changes in the position of UK universities in ranking tables, beyond existing reputations, impact on their strategic goal of international student recruitment. We draw upon an ad hoc dataset merging aggregate (university) level indicators of ranking performance and reputation with indicators of other institutional characteristics and international student numbers. Our findings show that recruitment of international students is primarily determined by perceptions of university reputation, socially mediated and sedimented over the long term, rather than universities' yearly updated ranking positions. We conclude that while improving rankings does not necessarily change universities' recruitment outcomes, they are nevertheless consequential for universities and students as strategic actors investing in rankings as purpose and identity.

Keywords:

University rankings, reputational prestige, higher education, international students, institutional analysis, sociology of evaluation, UK universities

University rankings are now ubiquitous in the increasingly expanding higher education (HE) field. Despite being an established feature of higher education in the United States, rankings were a novelty for the tertiary sector in the rest of the world until the 2000s. According to a 2013 survey by the European University Association, sixty per cent of European universities surveyed report that rankings play a role in their institutional strategies, eighty-six per cent monitor their position in rankings, and sixty per cent dedicate human resources to monitoring rankings through dedicated units or staff (EUA 2013). The irresistible rise of university rankings is linked with the intensified global race towards excellence in higher education, widely perceived to be the driver of economic growth and competitiveness (Ramirez and Tiplic 2014; Schofer and Meyer 2005). A number of governments in Europe, East

and South Asia and North America have launched excellence initiatives, such as research-incentive investments, clustering and internationalizing, to boost the performance of their tertiary education sector and build ‘world-class universities’ (Sadlak and Liu 2009; Salmi 2009). The pursuit of excellence has been driven and sustained by the growing expectation of systematic, scientific evaluation of performance in HE, and consequent proliferation and diffusion of rankings of all sorts.

University rankings are part of the broader move toward quantitative benchmarking and evaluation of performance across a range of institutional sectors and human activity (Berman and Hirschman 2018). Accounting for excellence is now a widely adopted practice in every organizational field, public or private. A growing literature, originating in North American and European scholarship, has paid both theoretical and empirical attention to rankings (See Lamont 2012 for a review). University rankings as a research topic has also attracted attention in recent years, most of the empirical work having been done in the US and focusing on how rankings change university organizational behavior, administration, college admission policies and student choices (Espeland and Sauder 2016; Monks and Ehrengerg 1999). In Europe, existing empirical studies are mostly descriptive, either focusing on the shortcomings of the existing rankings and ways to improve them, or taking a critical view to highlight more generally their biases and conflict with the fundamental missions of HE (Altbach 2012; Amsler and Bolsmann 2012; Dill and Soo 2005; Pusser and Marginson 2013; Shin, Toutkoushian, Teichler 2011; Taylor and Braddock 2007). While their pervasiveness in the European context is now widely commented upon, systematic studies about whether, and how, university rankings matter in specific outcomes are missing.

In this paper, we undertake an empirical analysis of the relationship between rankings and the internationalization of UK universities, more specifically the internationalization of their student body. Apart from its potential for generating revenue, the internationalization of the student body is highly integrated into the idea of a world-class university. Attracting students from abroad, or sending their own abroad, is widely adopted as a priority and explicitly strategized by governments, tertiary education sectors and institutions alike (IAU 2019). In recent decades, coupled with the massification and demographics of higher education, the number of international students has sharply increased—more than fourfold since 2000—with Asian countries such as China, India and South Korea sourcing more than half of five million plus international students in 2017 (OECD 2017).

What is the role of rankings in shaping the sorting of international students across universities? Unlike long engrained, socially mediated reputations, university rankings are designed to measure ‘objective’ changes in quality over time based on shared and standardized metrics. Thus, shifts in rankings should impact on student recruitment over and beyond long-existing reputations. To investigate, we use aggregate level institutional data from 100 UK universities observed longitudinally and analyse the changes over time in the stock of students from China and Japan in relation to changes in rankings. UK is the second most popular destination, after the

US, in the world for international students. Students from China and Japan are the two major flows from East Asia, different in respect to their timing (the Japanese being a traditional flow and the Chinese a more recent one) and intensity (students from China, by far the largest group, currently constitute twenty percent of all international students studying in the UK universities, while the number of Japanese students has decreased drastically over time). The comparison provides a sound control for assessing the role of rankings in international student recruitment.

The Rise of University Rankings

In the US, the history of college rankings (partially covering elite institutions and disciplines) goes back to as early as the beginning of the twentieth century. Since 1983, the yearly publication of ‘best colleges rankings’ by the *US News and World Report* popularized rankings at the national level (Kirby and Eby 2015). For a large majority of HE systems, on the other hand, their first encounter with rankings was much as recent as 2003, with the launch of the world university rankings, *Shanghai Jiao Tong Academic Rankings of World Universities (ARWU)*. Shanghai rankings were developed by academics in China, with government backing, to impact on the strategic building of world-class Chinese universities (Liu 2009). Since then rankings of all sorts, national and international, have rapidly proliferated and become a standard feature of the HE field. Times Higher Education (*THE*) World University Rankings were introduced in 2004, and its spinoff Quacquarelli Symonds (*QS*) World Rankings in 2009. There are rankings by age (*THE* 100 Under 50; *QS* Top 50 Under 50), region (*THE* BRICS & Emerging Economies Rankings; *QS* Asia University Rankings) and subject area (*ARWU* Global Ranking of Academic Subjects). At the same time, rankings have been increasingly institutionalized at the transnational level. In 2006, the International Ranking Expert Group (IREG), under the auspices of UNESCO, adopted the *Berlin Principles on Ranking Higher Education Institutions*. Since 2009, IREG has been functioning as an observatory and developed an audit system for HE rankings. The field is being rapidly populated by experts, consultants, non-profit groups, and commercial entities who organize international ranking conferences and provide consultancy for various stakeholders (Douglass 2016). The introduction of rankings and their institutionalization on a worldwide scale have propelled national HE systems to develop their own rankings in order to benchmark their own universities. By 2018, about 60 single-country rankings and 17 world rankings could be counted (IREG 2018).¹ Despite public attempts to challenge their validity, such as boycotts by universities in Canada and Germany, or the introduction of alternative evaluation projects, such as the EU’s (non-ordinal) U-Multirank, the significance of rankings continues to grow (Hazelkorn 2011; Rauhvargers 2013).

¹ Before 2003, the publication of the first world rankings, there were only a dozen of country-level university rankings. Among the countries that introduced university rankings since 2003 are not only the ones with the most advanced HE systems; the list also includes countries such as Columbia, Albania, Ukraine, Kazakhstan, Pakistan and Malaysia. Some of the country level rankings are published by commercial entities, for profit purposes, but several are state sponsored and official, established by academic centers and departments.

Transnationalization of rankings creates new dynamics and purpose. They are not only tools for signalling nation-states' positioning in the world and the legitimacy of their universities as world-class institutions. Importantly, by standardizing benchmarks of excellence, rankings facilitate a global imaginary of higher education, whereby universities appear to be 'similar, thus comparable', which generates increasing ranking aspirations, symbolically if not realistically (Ramirez 2013:147). Accordingly, universities locate themselves within an international and comparative framework, adopt new missions and targets (e.g. more international partnerships, more international research, more international students) and invest in new administrative and professional positions dedicated to such purposes, resulting in much organizational isomorphism (Sauder and Espeland 2009; Baltaru and Soysal 2018). For example, in the last ten years, almost half of all British universities introduced the position of Pro-Vice Chancellor for Internationalization and a large majority of them have Communications and External Offices. Standardized conceptions of higher education student follow: those who pursue the best educational returns and who can easily move and learn across national HE systems and university rankings. Such conceptions help to normalize and mobilize the circulation of students across borders of all kinds. As such rankings constitute aspirational and competitive actors at both organizational and individual levels, and shape cognitive maps around which policy makers, university administrators, funding bodies, employers, current students, applicants and alumni mobilize resources, strategies and identities (Sauder and Espeland 2009; Hasse and Krucken 2013; Ramirez 2013).

How do university rankings work empirically?

The potency of rankings as a tool for evaluation has been highlighted extensively in the increasingly important field of sociology of evaluation (Espeland and Stevens 2008; Fourcade and Healey 2017; Lamont 2012). The broader literature emphasizes the rise of 'new public management' in a neoliberal environment, resulting in frameworks and instruments of evaluation rapidly diffusing from private to public sectors. In dealing with deregulation and ever greater budget cuts, governments and public institutions turn to the tools of new public management to ensure greater efficacy, thus blurring the boundaries between market and non-market evaluative schemes.

All evaluative schemes are based on classifications, and quantifiable indicators have become the 'grammar' underlying such classification practices (Berman and Hirschman 2018; Espeland and Stevens 2008; Fourcade 2016; Mau 2019). Quantified representations form part of assessments of performance, impact and risk in fields as wide-ranging as health, the economy, finance, education, human rights, corruption, the environment, food and leisure (Kevin et al. 2012). In the realm of HE governance, the culture of numerical evaluation manifests itself as university rankings, but is also present in quality assessment of various kinds, such as the Research Evaluation Framework in the UK and academic annual reviews and promotions in the US and other parts of the world (Ramirez 2013). University rankings are based on a number of rationalized, quantifiable performance metrics

(based on algorithms and weights) which act as ‘proxies for quality’. These include funding and citations (research excellence), entry levels (student selectivity), good honours and employability (student outcomes), student/staff ratio (teaching environment), and budget spent on academic services and facilities (quality of infrastructure). Although different weights are given to different indicators across the existing ranking schemes, the main categories do not change significantly—research indicators for example have a significant place in all of them—affirming a convergent model of university excellence (Hazelkorn 2007:3; Hazelkorn 2014; Usher and Savino 2006). But more remarkably, like other educational indicators that underline global evaluation schemes (promulgated by the UN, UNESCO and OECD), these metrics are perceived as representing universalistic standards. They are expected to be applicable independent of local and national contexts; across HE systems, old or new; and HE institutions large, small, private and public.

The universalistic projection of standards differentiates university rankings from other evaluative schemes that have been extensively studied in the sociological literature, such as the agro-food sector, particularly the wine industry. In the wine industry, quality conventions (measures mobilized to evaluate quality) take into consideration both product and producer categories, thus there is plurality in the logics of evaluation. Different classification conventions apply to large industrial estates and craftsman wineries (Diaz-Bone 2013). For the product, quality is linked with territorial and temporal anchorage: a certain region, a certain grape, a certain time period creates the distinction in quality (Chauvin 2009). Tradition plays a role.

HE institutions long had reputations based on tradition, age, and even territory, which landed them at top of the prestige hierarchy. Ivy League, Oxbridge, Russel Group are shortcut terminology for such reputations. University rankings are supposed to go beyond such reputation based categorizations and hierarchies by redistributing prestige on the basis of universalistic standards and shared metrics of quality. They operationalize prestige as a metric system in relation to ‘objective’ performance, not as long-held, often socially mediated, perceptions about the quality of the institution. They are not to bestow distinction on the basis of tradition, foundation year or any other particularistic criteria.²

The differential allocation of institutional status via rankings is thus considered a ‘meritocratic’ process based on demonstrable outcomes, which can be enhanced by strategic organizational decisions and investments (Keith 2001). Rankings are expected to signal improvements in quality and inform and influence a variety of universities’ stakeholders (e.g. applicants, students, employers, funders, other universities, ministries), who should be responsive to status changes as reflected in rankings.

² Even when rankings are limited to specific groupings, on the basis of age and region for example (as in *QS Top 50 Under 50*, *THE Asia University Rankings*), the same quality conventions and benchmarks apply.

To what extent do university rankings deliver on their promise of meritocratic mapping of quality and related status change? We investigate this question by examining whether changes in ranking performance impact on universities' recruitment of international students. International students, more so than local students, are expected to be sensitive to rankings as they are the primary source of comparative information on higher education institutions beyond the national context (Hazelkorn 2014). If indeed rankings distribute prestige meritocratically, we should find that shifts in rankings, as opposed to long-anchored ranking reputations, are consequential for international recruitment.

Systematic empirical studies into the relationship between rankings and student recruitment are scarce. Research conducted in the US shows that shifts in an institution's position in rankings can cause changes in the number and characteristics of domestic applicants (Bowman and Bastedo 2009; Meredith 2004; Monks and Ehrenberg 1999). In the UK, rankings emerge as a significant driver of international students' decision-making in choosing universities based on analysis of the Higher Expectations Survey (Cebolla-Boado, Hu, Soysal 2017). Souto-Otero and Enders (2017), using micro-level data from the International Student Barometer survey, conclude that reputation (along with other factors such as fee levels and quality of teaching) is more important than rankings in informing and influencing students, the potential users of rankings. With the exception of the latter, these studies do not explicitly differentiate between ranking position and reputation, which is our analytical interest here.

Analysis

Data and Variables

We aim to explain the variation over time in the number of international students enrolled in British universities in relation to university ranking position and reputation. To this end, we constructed an ad-hoc longitudinal dataset containing university level data for four data points: 2002/2003, 2005/2006, 2010/2011 and 2013/2014. These data points correspond to the key moments in the changing flows of students from China and Japan, the two student populations on which we focus (see Figure 1).

Figure 1. Average number of Chinese and Japanese students in a random university from our dataset over time

Source: HESA

Our question requires operationalization of rankings position and reputation (our key predictors), as distinct variables from each other. While rankings are expected to be responsive to yearly changes in performance, reputational prestige, once formed, has an anchoring effect, whether it is still deserved or not, and thus has long-term persistence (Bowman and Bastedo 2011; Taylor and Baddock 2007: 247; Keith and Babchuk 1998; Schultz, Mouritsen, and Gabrielsen 2001; see also Fine 2012). To capture these differences, we rely on data from two sources: data on university rankings from the *Complete University Guide* (CUG) and data on institutional reputation from historical ranking tables published by *The Times* and available at the Times Digital Archive. We chose CUG data, published since 2007, over other available rankings (e.g. *The Guardian*, *Times Higher Education*) for two reasons: its longitudinal rankings data are publicly accessible and it does not include subjective assessments of university reputation as one of its ranking criteria.³ *The*

³ The CUG criteria are: student-staff ratio, academic services expenditure, facilities expenditure, entry qualifications, degree classifications, degree completion (operationalised from the Higher Education Statistics Agency, HESA), graduate prospects, student satisfaction (operationalised from the National Student Survey, NSS), as well as research intensity and research quality (operationalised from the Research Excellence Framework, REF).

Times established the first ranking tables, as early as 1993; we use them to capture the initial formation of impressions and reputation about the UK's 'top' universities.⁴

Our variables for ranking and reputation are constructed as follows. *The percentage change in university rank*, from 2007/2008 (the earliest publicly available CUG data) to 2013/2014 (the most recent cross-section in our data), represents how much the university 'objectively' improved its position in rankings between these two time points. We have used the widest available measure of change in rankings, from 2007 to 2014, as opposed to yearly changes, in order to allow as much variation as possible in the changes. In contrast, *reputational prestige* is time invariant and operationalised as a binary variable that measures those universities which consistently ranked in the Top 20 in the early years (1993, 1994, 1995 and 1996) of *The Times* tables. Top 20 universities were coded '1' as opposed to all other universities, which were coded '0'. These two variables allow us to differentiate between the effects of universities' incremental successes in the ranking tables and broader perceptions of universities' previously built reputations.

We use these two independent variables to predict the number of international Chinese and Japanese students enrolled in British universities from data provided yearly by the Higher Education Statistics Agency (HESA). As controls, we introduce a number of university level characteristics (data also from HESA) that might bolster the number of international students. Where applicable, we operationalize these indicators as proportions (e.g. in total students or in total income) to net out the effect of university size.

Firstly, having an international outlook may increase universities' visibility and appeal to prospective international students. We are aware that some rankings, such as *THE* for example, include international outlook (in terms of students, staff and research) as a criterion; this is not the case for CUG or the initial period *Times* rankings, thus we do not risk multicollinearity with our independent variables. We have two indicators to operationalize: *the international research funding (EU and non-EU)* as a proportion of total funding from research grants and contracts (measured in thousands of pounds) and *the European Union (EU) students* as a proportion of total students. We do not include non-EU students to avoid endogeneity, due to including part of our dependent variable in this explanatory measure.

⁴ Note that the earlier ranking tables by *the Times* and the CUG ranking tables display significant overlap in terms of the indicators being used, ensuring comparability of our two variables. Similar to the CUG, the *Times* indicators included research and development (R&D) income; scores from the research assessment exercises taken by the Higher Education Funding Council; teaching assessments taken by the funding councils for England, Wales and Scotland; employment ranking based on measures such as the proportion of graduates going on to permanent employment; as well as: student and staff ratio, completion rates, proportion of first-class degrees awarded, and expenditure on services such as library spending. The criteria used display some variation from a year to another (e.g. in 1994 an indicator for completion rates is introduced, in 1995 the indicator for R&D income is dropped) but the overall the measures remain consistent over time.

Secondly, universities increasingly invest in student-oriented services in order to attract and cater for international students. Universities' service orientation has been operationalized as *the expenditure spent on student and staff facilities* as a proportion of total expenditure (measured in thousands of pounds). These facilities include careers advisory services, grants to student societies, accommodation offices, athletic and sporting facilities, transport, chaplaincy, student counselling and health services. Whilst expenditure on student facilities is included as a criterion in the CUG rankings, we have not identified multicollinearity between the two independent variables.

Thirdly, we include controls of *income from tuition fees and education contracts* as a proportion of total income. Recruitment of international students is often seen as a survival strategy in the context of an increasingly deregulated and underfunded HE sector, especially since they pay higher fees compared to home students. If a university's budget heavily depends on tuition fees, the university is likely to be more eager to accept international students. Some universities may even set their entry standards low to increase their international intake. We do not include entry standards in the controls, as they are among the criteria that CUG uses in calculating the university rank and the two variables correlate highly ($p > .80$). The variable is measured in thousands pounds and includes all income from student fees from individual students as well as other sources such as the Student Loans Company, Local Education Authorities, the Student Awards Agency for Scotland, and the Department for Education for Northern Ireland.

And lastly, we include *the total number of students* to control for university size, as well as the number of Chinese and Japanese students the previous year. Large bodies of students from said countries may help raise the profile and bolster the reputation of the universities they attend (Cebolla-Boado, Hu, Soysal 2017).

All independent and control variables (except *reputation*, a time invariant variable) were measured longitudinally, in line with the dependent variables.⁵ Table A.1 in the Appendix provides the descriptive statistics.

Method

We ran two separate models to predict the number of Chinese students and Japanese students respectively. Each model was then re-run including the lagged dependent variable ($T - 1$) as a predictor, in order to model inertia as proxied by the previous levels of Chinese/Japanese student enrolments. The data is based on a balanced panel of over 100 universities (approximately 80% of the UK university sector), observed at our four points in time.

⁵ For two indicators data have been collected for the closest cross-sections with the above time points. These are the number of Japanese students (data available for 2001/2002 were used as a proxy for 2002/2003; data available for 2014/2015 were used as a proxy for 2013/2014) and ranking (where the earliest available data point is 2007/2008).

We opted for modeling of time series after confirming that the clustering of observations over time is statistically relevant.⁶ Regression models with random constant effects decompose the overall variation within (cross time effect) as well as between years of observation.

Our model specification includes both time variant predictors (e.g. percentage change in ranking position, number of students, expenditure) and our time invariant predictor: reputation. The inclusion of lagged independent variables helps us predict whether changes in university level characteristics nurture or inhibit the number of international students, over and above university reputation. The specification of our model is:

$$Y_{it} = \alpha_i + u_{i(t-1)} + \beta_1 X_{i(t-1)} + \epsilon_{i(t-1)}$$

Where α_i is the number of international students in each university, which is adjusted yearly by a residual called $u_{i(t-1)}$. The slope modelling the effect of our predictors and the university level residual $\epsilon_{i(t-1)}$ is interpreted as in a standard regression model.

Findings

The results shown in Figures 2 and 3 are for Chinese and Japanese students respectively (tables reporting exact estimates are presented in the Appendix, A.2 and A.3.). The figures show the marginal effects at the 95 per cent confidence interval in each case. We find that the reputation of the university is the main factor boosting the numbers of international students. This is true for both Chinese and Japanese students and, interestingly, the magnitude of this effect is similar for these two very different flows of students. By contrast, improvements in ranking tables as measured in per cent changes in table position do not have any impact at all (the size of the corresponding estimate in both tables is fairly small and not at all significant). This confirms that the driver of university internationalization as measured by the number of Chinese and Japanese students is long-term consolidated prestige and not our alternative short-term sensitive proxy (shift in ranking position).

⁶ The Breusch and Pagan Lagrangian Multiplier test has confirmed that observations are more similar within universities ($\chi^2 = 108.65$, $p < .001$ for the model predicting the number of Chinese students; $\chi^2 = 162.10$, $p < .001$ for the model predicting the number of Japanese students), thus pooling the data is invalid.

Figure 2. Average Marginal Effects Predicted Standardized Number of Chinese Students

Source: Plotted from models shown in Table A.2.

Figure 3. Average Marginal Effects Predicted Standardized Number of Japanese Students

Source: Plotted from models shown in Table A.3.

Our controls appear to have a negligible role in predicting the stock of international students across time. For Chinese students, the percentage of students from EU countries in the student body appears to be insignificant and small in size. By contrast, it is a significant predictor for the Japanese. In other words, while the sorting of Japanese students across British universities parallels, to some extent, the distribution of European students from EU origins, this does not happen with the Chinese, whose distribution across the map of UK tertiary education seems to be more widely dispersed (Cebolla-Boado, Hu, Soysal 2017). We can only speculate about the reasons behind this difference. Europeans and the Japanese are longstanding flows of international students who are more likely to be more driven by inertia whereas the arrival of Chinese students in the UK is more recent and probably less subject to previous traditions. Expenditure on student facilities, which universities invest in strategically, as they are thought of as draws for international students and students in general, does not have any consistent effect. Neither do other aspects of internationalization (international research funds, EU student numbers). Most surprisingly, income from tuition fees appears to be irrelevant, contrary to expectation.

Finally, after introducing in our models the number of Chinese and Japanese students in the previous year, it becomes clear that those universities which already attracted more Chinese and Japanese students in the past, currently also attract more students of said origins. We think that this finding gives further support to the reputation argument. Reputation as a form of symbolic resource is facilitated by interactions between social actors in the perpetuation and validation of its legitimacy (cf. Bourdieu 1991); thus, expectedly, a large stock of existing students of the same origin at a university, especially with the help of social media, should help diffuse its reputation.

Further Checks

Our analysis focused on a specific internationalization outcome, namely the internationalization of the student body, as illustrated in the flows of Chinese and Japanese students. We have tested the reliability of these findings on a broader operationalization of the dependent variable by re-running the models to predict the total number of international students. The results were replicated, university reputation being statistically significant and positive predictor of international students ($p < .05$), as opposed to change in ranking position which was insignificant. We additionally run the models controlling for time (by including dummy variables for each year) to account for the overall growth in international students over the period. The results were replicated.

We acknowledge that rankings may nevertheless play a more direct role in the internationalization of universities in other aspects. It is possible for example that improving ranking position might improve an institution's chances of obtaining international research funds. To check this possibility, we have re-run the model to predict the proportion of international (non-EU) funding in total research funds. As in the case of student recruitment, the results reveal that the change in rankings has no effect on international research funding, controlling for all other variables. Instead, universities with long-standing reputations and a higher number of European students display significantly higher shares of research funding coming from international sources, as opposed to less prestigious universities with fewer European students.

While capturing changes in rankings as percentages from the initial position gives appropriate weight to the smallest changes registered in top universities (for example, University of Oxford registers a percentage change of 50% due to falling from 2nd place in 2007 to 3rd place in 2013), we acknowledge that this procedure may bring issues of nonlinearity whereby the percentage change in rankings is influenced by universities' position in the ranking tables. In additional analyses we have checked the robustness of the results against potential issues of nonlinearity by rerunning the models with a squared term for the change in rankings and by rerunning the models using differences in rankings rather than percentage changes. In both cases, the results were replicated.

Finally, we explored alternative operationalizations of ranking position to identify whether rankings become a significant predictor under a different model

specification. Firstly, we re-run the model controlling for universities' original ranking (T0). The results were replicated. Secondly, we added a binary indicator to capture universities whose ranking change pushed them into Top 10 category. For these universities the ranking change was statistically significant, along reputation, as opposed to alternative operationalizations (e.g. Top 25, Top 50) which were insignificant. That is, ranking change only becomes consequential when it carries a university to the elite rank of Top 10. This finding supports the argument that the imaginary of university rankings draws on broader and amorphous perceptions of university prestige (whether a university is in 'the top' or not) rather than systematic and precise improvements in university performance across all ranks. Thirdly, in our original models we have decided not to use absolute yearly changes in rankings as these changes are not comparable in terms of magnitude (e.g. smaller changes in top universities weight more than smaller changes in lower ranked universities); instead we utilized percentage changes in rankings. Nevertheless, as a check, we re-run the models with absolute changes in rankings on a limited sample of two waves, since absolute yearly data on rankings are not available for 2002 and 2005—the two earlier data points in our analysis. Under this specification ranking position, along with reputation, becomes statistically significant. To confirm the reliability of this result, further longitudinal analysis is needed, using samples with a larger number of data points as more data on rankings become available.

Discussion

The analysis we offer in this paper helps us to understand how university rankings work. Empirically focusing on international student recruitment, our findings point to a rather diffuse and symbolic functioning of university rankings. We show that international students are sorted across British universities not on the basis of objective, precise indicators of quality conveyed by changing institutional position in ranking tables, but rather by long-anchored institutional reputations. Universities' reputational prestige, as opposed to their organizational performance as measured in rankings, is the main determinant of their recruitment success. This contrasts sharply with the perception that efforts to boost yearly changes in rankings are consequential, a view that underpins significant changes in the governance and organization of universities. Rankings fail to deliver their meritocratic promise; if anything, they help to further legitimate reputation as a symbolic good. Institutions long reputed to be at the top of the 'prestige hierarchy' benefit both from socially mediated perceptions of reputation and from rankings that reinforce the symbolic value of reputation.

If this is so, why do HE institutions and the sector as a whole continue to engage with rankings? In relation to international student mobility, rankings' persistent presence in HE is buttressed by widely adhered human capital theories, which propagate a vision of education as an investment with national and individual level returns. This is the predominant framework that universities and policy makers use in order to make sense of international student mobility. Share of international students is viewed as a barometer of universities' ability to effectively generate human capital and global talent by pursuing 'world class education'. Concomitantly,

international students are regarded as rational evaluators of universities' performance, relying on rankings in order to compare the 'university market' and discern the worthiest universities at a particular point in time. Rankings technology, and its communication, makes possible comparison of institutions that are otherwise un-comparable on a world scale, while also providing a common definition of the most valuable and worthiest education to invest in (Espeland and Sauder 2012; Ramirez 2013).

More profoundly, rankings help perpetuate cognitive self-constructions of universities and students as rational, goal-oriented agents (Hasse and Krucken 2013). University rankings hold sway not only because they project universal quantifiable and comparable standards of worth, but also because investment in them conveys purposeful and capable actorhood with aspirations of mobility. For prospective students and graduates, pursuing rankings acts as a proxy to signal their proactive exercise of agency. From universities point of view, improving rankings is a strategic action, and in part seeking legitimacy in the increasingly standardized and transnationalized sphere of higher education. In other words, rankings become HE purpose and identity in themselves, decoupled from the very goal of enhancing educational excellence and internationalization (Baltaru and Soysal 2018; Bromley and Powell 2012; Espeland and Sauder 2012). Universities explicitly integrate improving standings in rankings into their mission statements, as an indicator of their ambition for excellence. The wider narratives and publication of rankings in the media makes it difficult for universities to ignore these listings. Small differences are magnified and relative positioning is celebrated (Fowles, Frederickson, and Koppell 2016), no matter how irrelevant they might be for organizational outcomes. An annual cycle of key performance indicators (KPI) takes hold (e.g. increased enrollments, increased graduation rates, increased research funding, increased citations, increased engagement with society and businesses), tightly coupled with organizational strategies and action, while the KPIs themselves become increasingly removed from the goals and advancements they are supposed to signify.

As long as national governments are tied up with competitiveness in the global excellence race, it is likely that HE systems will continue relying on the universalistic logic of rankings to level the playing field for universities. Against the background of a manifestly uncertain future of the HE sector, narratives of excellence entrusted in rankings emerge as roadmaps and structure expectations and decisions (see Beckert and Bronk 2019). On the other hand, universities differ largely in their resources and local and regional positionings; in an increasingly multi-polar world, it is plausible that such differentiation will deepen. In such a context, to the extent to which participation in rankings is 'voluntary', governments and universities may reconsider whether engagement with rankings is indeed a strategic choice. Such reconsideration may shake the HE imaginary based on meritocracy, but it may also create the possible conditions for new ways of fomenting collective rationality across the HE field, possibly more productive manner than previously.

Concluding thoughts

Despite their centrality for university identity and missions, our findings clearly point to the overestimated role of rankings in shaping international student mobility. We show that universities' efforts to attract international students through both organizational strategies (e.g. international funding connections, diversification of services and facilities) and improvements in their ranking are not consequential. However, our analysis has some limitations.

Given the data constraints, our analysis focuses on a short time frame. It is possible that analysis conducted using data from a longer time period might produce different results than we report in this study. In the long-run rankings may indeed challenge the stability of the deeply ingrained HE status order and consequently the empirical impact of established reputations (Enders 2015; but see Fowles, Frederickson, and Koppell 2016). In the last decade, universities from China, South Korea, Taiwan, Hong Kong and Singapore for example experienced dramatic upward movement in world rankings, putting these institutions visibly on the HE map. China alone had nineteen universities enter in the top 200 in world rankings since 2004 (QS 2019). Clearly, world rankings are partly reflections of countries' position in the world. The unquestionable dominance of US universities in the second half of the twentieth century cannot be separated from the country's hegemonic position on the world stage (Ramirez 2013). Future research should take into consideration the changes in the global HE field, and include a longer time frame, to provide firmer conclusions.

Future research should also look beyond the UK (and the US), cross-nationally, where HE systems are historically less stratified along long-term reputations and fee structures. It is possible that university rankings may indeed function differently in contexts where resources are not closely linked with reputation.

REFERENCES

- Altbach, P.G. 2012. "The Globalization of College and University Rankings", *Change: The Magazine of Higher Learning* 44(1): 26-31.
- Amsler, S.S. and Bolsmann, C. 2012. "University Ranking as Social Exclusion", *British Journal of Sociology of Education* 33(2): 283-301.
- Baltaru, R.D. and Soysal Nuhoğlu, Y. 2018. "Administrators in Higher Education: Organisational Expansion in a Transforming Institution", *Higher Education* 76(2): 213-29. 10.1007/s10734-017-0204-3
- Beckert, J. and Bronk, R. 2019. *Uncertain Futures: Imaginaries, Narratives, and Calculative Technologies*, MPIfG Discussion Paper 19/10 (Cologne, Max Planck Institute for the Study of Societies).

- Berman, E.P. and Hirschman, D. 2018. "The Sociology of Quantification: Where Are We Now?", *Contemporary Sociology* 47(3): 257-66.
- Bourdieu, P. 1991 *Language and Symbolic Power* (Cambridge, Harvard University Press).
- Bowman, N.A. and Bastedo, M.N. 2009. "Getting on the Front Page: Organizational Reputation, Status Signals, and the Impact of U.S. News and World Report on Student Decisions", *Research in Higher Education* 50(5): 415-426.
- Bowman, N.A. and Bastedo, M.N. 2011. "Anchoring Effects in World University Rankings: Exploring Biases in Reputation Scores", *Higher Education* 61(4): 431-44.
- Bromley, P. and Powell, W.W. 2012. "From Smoke and Mirrors to Walking the Talk: Decoupling in the Contemporary World", *Academy of Management Annals* 6(1): 1-48.
- Cebolla-Boado, H., Hu, Y. Soysal Nuhoglu, Y. 2017. "Why Study Abroad? Sorting of Chinese Students across British Universities", *British Journal of Sociology of Education* 39(3): 365-80, <https://doi.org/10.1080/01425692.2017.1349649>
- Chauvin, P. 2009. "What Globalization Has Done to Wine?" *Review Economy*, 27 July.
- Diaz-Bone, R. 2013. "Discourse Conventions in the Construction of Wine Qualities in the Wine Market", *Economic Sociology – European Electronic Newsletter* 14 2): 46-53. http://econsoc.mpifg.de/archive/econ_soc_14-2.pdf
- Dill, D.D. and Soo, M. 2005. "Academic Quality, League Tables, and Public Policy: A Cross-national Analysis of University Ranking Systems", *Higher Education* 49(4): 495–533.
- Douglass, J.A. 2016. "How Rankings Came to Define World Class", in J.A. Douglass, ed., *The New Flagship University: Changing the Paradigm from Global Ranking to National Relevancy* (London, Palgrave MacMillan).
- Enders, J. 2015. "The Academic Arms Race: International Rankings and Global Competition for World-Class Universities", in A. W. Pettigrew, E. Cornuel, and U. Hommel, eds., *The Institutional Development of Business Schools* (Oxford: Oxford University Press).
- Espeland, W.N. and Sauder, M. 2012. "The Dynamism of Indicators", in K.E. Davis et al, eds., *Governance by Indicators* (Oxford: Oxford University Press).
- Espeland, W.N. and Sauder, M. 2016. *Engines of Anxiety: Academic Rankings, Reputation, and Accountability* (New York, Russell Sage Foundation).

Espeland, W.N. and Stevens, M.L. 2008. "A Sociology of Quantification", *Archives Europeennes de Sociologie* 49(3): 401-36.

EUA (European University Association). 2013. *Internationalisation in European Higher Education: European Policies, Institutional Strategies and EUA Support* (Brussels).

Fine, G.A. 2012. *Sticky Reputations: The Politics of Collective Memory in Midcentury America* (New York, Routledge).

Fourcade M. 2016. Ordinalization, *Sociological Theory* 34(3): 175-95.

Fourcade, M. and Healy, K. 2017. "Categories All the Way Down", *Historical Social Research* 42 (1): 286-96.

Fowles, J., Frederickson, H.G., and Koppell, J.G. 2016. "University Rankings: Evidence and a Conceptual Framework", *Public Administration Review* 76(5): 790-803.

Hasse, R. and Krucken, G. 2013. "Competition and Actorhood: A Further Expansion of the Neo-institutional Agenda", *Sociologia Internationalis* 51(2): 181-205.

Hazelkorn, E. 2007. "The Impact of League Tables and Ranking Systems on Higher Education Decision-Making", *Higher Education Management and Policy* 19(2): 87-110.

Hazelkorn, E. 2011. *Rankings and the Reshaping of Higher Education: The Battle for World-class Excellence* (London, Palgrave-Macmillan).

Hazelkorn, E. 2014. "The Effects of Rankings on Student Choices and Institutional Selection", in B. Jongbloed and H. Vossensteyn, eds., *Access and Expansion Post-Massification: Opportunities and Barriers to Further Growth in Higher Education Participation* (London: Routledge).

IAU (International Association of Universities). 2019. *5th Global Survey on Internationalization of Higher Education* (Paris, UNESCO)

IREG. 2018. *Inventory of International University Rankings, 2014-17* (Brussels, Observatory on Academic Ranking and Excellence).

Keith, B. 2001. "Organizational Contexts and University Performance Outcomes: The Limited Role of Purposive Action in the Management of Institutions," *Research in Higher Education* 42(5): 493-516.

Keith, B. and Babchuk, N. 1998. "The Quest for Institutional Recognition: A Longitudinal Analysis of Scholarly Productivity and Academic Prestige among Sociology Departments," *Social Forces* 76(4): 1495-1533.

- Kevin D., Fisher, A., Kingsbury, B., and Merry, S.E. 2012. *Governance by Indicators: Global Power through Quantification and Rankings* (Oxford: Oxford University Press).
- Kirby, W. and Eby, J. 2015. *"World-Class" Universities: Rankings and Reputation in Global Higher Education* (Cambridge, MA, Harvard Business Publishing).
- Lamont, M. 2012. "Toward a Comparative Sociology of Valuation and Evaluation", *Annual Review of Sociology* 38(1): 201-21.
- Liu, N.C. 2009. "The Story of Academic Ranking of World Universities, *International Higher Education*", No. 54. <https://doi.org/10.6017/ihe.2009.54.8409>
- Mau, S. 2019. *The Metric Society. The Quantification of the Social World* (Cambridge, Polity).
- Meredith, M. 2004. "Why Do Universities Compete in the Ratings Game? An Empirical Analysis of the Effects of the *U.S. News and World Report* College Rankings", *Research in Higher Education* 45(5): 443–61.
- Monks, J. and Ehrenberg, R.G. 1999. "The Impact of U.S. News and World Report College Rankings on Admissions Outcomes and Pricing Policies at Selective Private Institutions", Working Paper Series (Cambridge, MA, National Bureau of Economic Research).
- OECD 2017 *Education at a Glance* (Paris).
- Pusser, B. and Marginson, S. 2013. "University Rankings in Critical Perspective", *The Journal of Higher Education* 84(4): 544-68.
- QS. 2019. "How China's Belt and Road Initiative is Impacting Higher Education on a Global Scale", www.qs.com/chinas-belt-initiative-impacting-he-global-scale/
- Ramirez, O.F. 2013. "World Society and the University as Formal Organization", *SISYPHUS Journal of Education* 1(1): 124–53.
- Ramirez, F.O. and Tiplic, D. 2014. "In Pursuit of Excellence? Discursive Patterns in European Higher Education Research", *Higher Education* 67(4): 439-55.
- Rauhvargers, A. 2013. *Global University Rankings and Their Impact*, Report II (Brussels, European University Association).
- Sadlak, J. and Liu, N.C., eds. 2009. *The World-Class University as Part of a New Higher Education Paradigm: From Institutional Qualities to Systemic Excellence* (Paris, UNESCO-CEPES).

Salmi, J. 2009. *The Challenge of Establishing World-class Universities* (Washington D.C., World Bank).

Sauder, M. and Espeland W.N. 2009. "The Discipline of Rankings: Tight Coupling and Organizational Change", *American Sociological Review* 74 (2): 63-82.

Schofer, E. and Meyer, J.W. 2005. "The Worldwide Expansion of Higher Education in the Twentieth Century", *American Sociological Review* 70(6): 898-920.

Schultz, M., Mouritsen, J. and Gabrielsen, G. 2001. "Sticky Reputation: Analyzing a Ranking System", *Corporate Reputation Review* 4(1): 24-41.

Shin, J.C., Toutkoushian, R.K. and Teichler, U., eds. 2011. *University Ranking: Theoretical Basis, Methodology and Impacts on Global Higher Education* (New York, Springer).

Souto-Otero, M. and Enders, J. 2017. "International Students and Employers Use of Rankings: A Cross-national Analysis", *Studies in Higher Education* 42(4): 783-810.

Taylor, P. and Braddock, R. 2007. "International University Ranking Systems and the Idea of University Excellence", *Journal of Higher Education Policy and Management* 29(3): 245-60.

Usher, A. and Savino, M. 2006. *A World of Difference: A Global Survey of University League Tables* (Toronto, The Educational Policy Institute).

APPENDIX

Table A.1 *Descriptive Statistics*

Interval Variables	<i>Mean</i>	<i>Standard Deviation</i>	<i>Min</i>	<i>Max</i>
Chinese Students	375.49	532.29	0	3812
Japanese Students	27.79	47.37	0	536
Total Students	13836.41	15621.77	140	208710
% Change in Ranking (2007-2013)	4.50	31.80	-52.63	183.33
% EU Students	7.95	6.41	0	83.26
% International Research Funds	17.90	15.48	0	64.06
% Expenditure on Facilities	2.52	1.75	0	15.99
% Tuition Fees Income	33.81	16.58	0	84.04
Binary Variables	%			
Reputation	9.27			

Notes: Each interval indicator has been standardised by subtracting its average value from the absolute value and dividing the result by its standard deviation. Values are rounded at the third decimal.

Table A.2 *Random Effects Model with Lagged Independent Variables Predicting the Number of Chinese Students*

Variables	Model 1	Model 2
Reputation	1.55*** (.264)	.755*** (.170)
% Change in Ranking (2006-2013)	.001 (.074)	-.012 (.040)
% EU Students	-.031 (.053)	-.087* (.042)
% International Research Funds	.094+ (.048)	.086* (.034)
% Expenditure on Facilities	-.012 (.058)	-.008 (.038)
% Tuition Fees Income	.069 (.075)	-.084 (.045)
Total Students	.420** (.150)	.132 (.092)
Chinese Students (T-1)		.592*** (.065)
Wald X ²	61.03***	322.24***
N	297	297
R ² (within universities)	.01	.05
R ² (between universities)	.42	.86

Notes: *p<.05, **p<.01, ***p<.001

Robust Standard Errors in the Parentheses.

Coefficients and Robust Standard Errors Rounded at the Third Decimal.

Table A.3 *Random Effects Model with Lagged Independent Variables Predicting the Number of Japanese Students*

Variables	Model 1	Model 2
Prestige	1.040*** (.216)	.413* (.172)
% Change in Ranking (2006-2013)	.093 (.057)	.023 (.027)
% EU Students	.188* (.089)	.150* (.068)
% International Research Funds	-.014 (.040)	.007 (.051)
% Expenditure on Facilities	.005 (.036)	-.004 (.040)
% Tuition Fees Income	-.039 (.058)	-.045 (.042)
Total Students	.110 (.126)	.085 (.086)
Japanese Students (T-1)		.637*** (.095)
Wald X ²	54.50***	369.80***
N	294	294
R ² (within universities)	.01	.08
R ² (between universities)	.35	.87

Notes: *p<.05, **p<.01, ***p<.001

Robust Standard Errors in the Parentheses.

Coefficients and Robust Standard Errors Rounded at the Third Decimal.