

## **Times Higher Education/QS University Rankings 2008**

While LSE's position in this year's ranking in the World University ranking slips to 66 from 59 in 2007 and for Social Sciences to 4 from 3 in 2007, these changes are small and not of any particular significance. In statistical terms they are probably within the margin of error of the data. The exercise again confirms that LSE is one of the world's leading Social Science institutions:

### **Times Higher Education: LSE in the University Rankings**

	<b>2006</b>	<b>2007</b>	<b>2008</b>
<b>World University Ranking</b>	<b>17</b>	<b>59</b>	<b>66</b>
<b>Social Science Ranking</b>	<b>3</b>	<b>3</b>	<b>4</b>

However, the LSE was concerned in 2007 at the fall in the World ranking from the top 20 band to the current level. What went wrong?

The THE/QS ranking in 2007 involved several changes to methodology. It was based on six criteria reflecting what the compilers believe constitute university excellence. On three of these criteria LSE was ranked 1 – employer review, international staff and international students. On student/staff ratio LSE ranked 41 and on peer review 48. But on citations per academic – the number of times journal articles are cited by other researchers divided by the number of academic staff - LSE was ranked 198. Even the THE felt the need to comment that a change in the methodology had a “particularly chastening effect on the LSE” and in an editorial noted the methodology captures excellence in "multipurpose universities in the rich world" rather than specialist and postgraduate institutions.

Was this an admission that the league tables are somehow biased against the social sciences and humanities? If so, in what ways? Here we describe the results of our investigations since the publication of the 2007 tables.

### **Typical numbers of citations for social science and other science disciplines**

Using Scopus – the database employed for the THE/QS rankings since 2007 - we compared the citation counts for LSE and Harvard for all papers published in 1999. LSE's most successful paper achieved around 150 citations while for Harvard it was over 3000.

Looking at the citations for the most cited 25 papers for each institutions confirms the difference. It is inherently unlikely that such a huge disparity between leading institutions results purely from differences in research quality. What it suggests is that comparing social science institutions with multi-faculty institutions covering the STEM subjects (science, technology, engineering and medicine) is like comparing a sardine with a good sized cod.

### **What does the Scopus database include?**

The Scopus database draws on academic journals and excludes books and monographs. Does this discriminate against academics in those disciplines in which journal articles are not the common form of publication - those that incline towards the Humanities and the softer, non-quantitative, social sciences?

To investigate this question we selected two LSE departments rated 5 in the UK Research Assessment Exercise (RAE) 2001 – the departments of Anthropology (actually rated 5\*) and Finance. We take these to be exemplars of different traditions in the social sciences. Anthropologists, along with Historians, Political Theorists and many Sociologists esteem books and monographs over journal articles. For other disciplines such as Finance, Economics and Statistics, only publications in the top journals count. The different cultures of publication are confirmed in table 1 which survey all publications between 2001 and 2007.

**Table 1 Publishing patterns in Anthropology and Finance**

	<b>Anthropology Percent</b>	<b>Finance Percent</b>
<b>Book</b>	<b>7</b>	<b>1</b>
<b>Monograph</b>	<b>1</b>	<b>0</b>
<b>Book chapter</b>	<b>34</b>	<b>4</b>
<b>Book editor</b>	<b>6</b>	<b>1</b>
<b>Journal article</b>	<b>48</b>	<b>72</b>
<b>Other</b>	<b>4</b>	<b>22</b>

The table show that while 48% of the output of Anthropologists is in journals, the figure for Finance is 72%. For databases constructed on the contents of journals, it seems plausible that a significant volume of research in Anthropology (and like-minded disciplines) is unlikely to be included.

As a basis for comparison between the two exemplar disciplines - Anthropology and Finance - the RAE return of 2007 suggests itself as a good choice. While it is limited to four publications per academic, it provides an interesting baseline as it contains the publications that authors in the disciplines seeks to highlight as the best quality.

Table 2 shows that the matches for Finance in both Scopus and ISI Web of Science (another citation data base) are reasonable – around 70% of the Finance work put forward by LSE in RAE 2007 appears in both databases. However there is a dramatic under-representation in these databases for Anthropology – only 20% of work submitted for RAE 2007 appears.

**Table 2: What percentage of RAE submissions appear in citation data bases?**

<b>Sources against which RAE matched</b>	<b>Anthropology</b>	<b>Finance</b>
	<b>Percent</b>	<b>Percent</b>
<b>SCOPUS</b>	<b>20</b>	<b>73</b>
<b>ISI</b>	<b>20</b>	<b>66</b>

This confirms the hypothesis that those disciplines where publications of books are at least as important as journal articles are severely under-represented in citation indices.

Looking at the RAE outputs for the LSE as a whole, we estimate that 23% of LSE academics have more than half of their outputs excluded from Scopus and a further 22% have two out of five outputs excluded. For the LSE this amounts to the double whammy of an under-count of citations and an over-count of (apparently non-productive) academics. Thus, the figures for citations per academic for the LSE will be a significant misrepresentation.

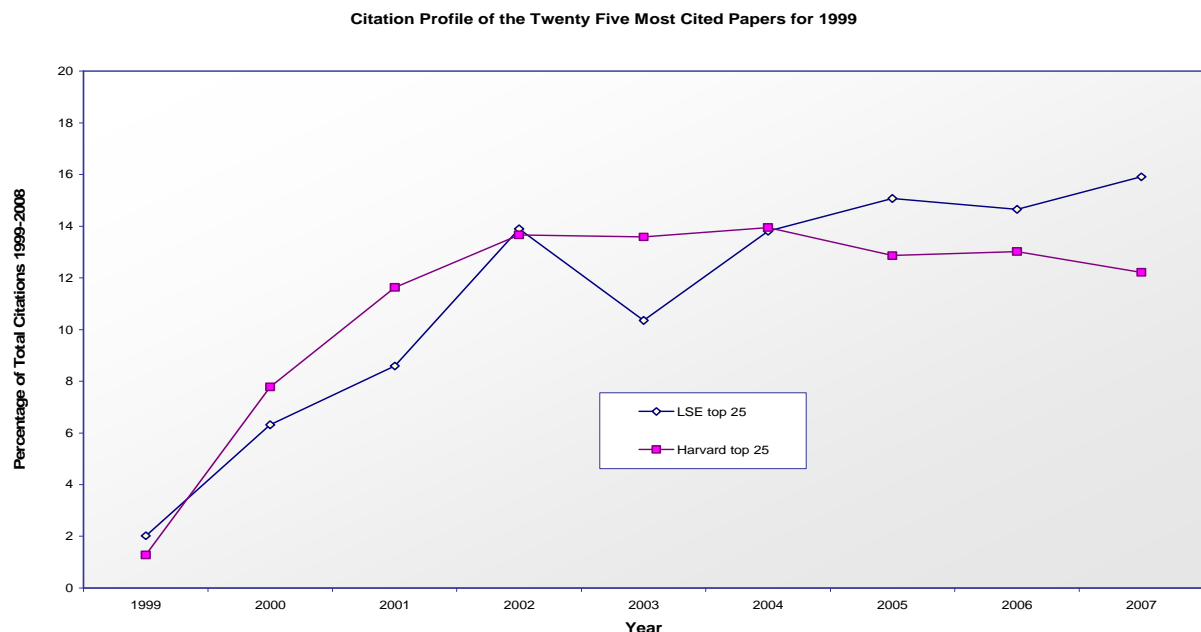
## LSE in the top 50 Social Science Institutions

In 2007 the THE/QS ranking of the world's top 50 Social Science institutions puts LSE in 3<sup>rd</sup> place behind Harvard and Berkeley. In this ranking, citations per paper (rather than citations per academic) over the period 2002-2006 were shown as an indicator of excellence – although this did not feed into the actual ranking, which was by peer opinion only. The citations per paper scores were Harvard - 5.6, Berkeley - 5.2 and LSE - 2.2. The LSE's score for 2008 is 2.7, although at the time of writing we do not know how this is to be used nor what other institutions' scores may be. What might account for LSE's relatively poor performance in 2007 at least?

### *The trajectory of citations for social sciences*

Research from Leiden University has indicated longer lead times for citations in social science compared to the physical and medical sciences. Using the Scopus database, we selected LSE's and Harvard's most cited papers (the latter almost exclusively in bio-medicine) from 1999 and compared the trajectories of citations over a ten year period (1999-2008). The peak year for citations, from publications in 1999, is indeed different for the two universities. The figure below depicts the citation trajectories for the top 25 papers.

For Harvard, the peak citation year is 3 - 5 years after publication; for LSE, it is 8 years post-publication and still rising. Evidently social science papers take longer to gather momentum in terms of citation numbers.



These differences in the profile of citations suggest that the 2002-2006 window used by THE/QS in 2007 to measure citations per academic is biased against institutions that are largely social scientific in nature – such as the LSE and, for example, SOAS.

### ***QS - problems with their analysis***

The company producing the university rankings for the THE is QS. For a variety of reasons it has been difficult to precisely replicate the QS methodology as QS do not make it transparent. They also have a version of the Scopus database that is not accessible to other users. However, converging lines of enquiry suggest that QS greatly over-estimated the number of papers published by LSE academics between 2002 and 2006, thereby under-estimating the count of citations per paper.

Using a set of synonyms for LSE provided by QS and the Scopus database, our analysis showed 2513 papers and 11,372 citations (mean 4.5 citations per paper) for the period 2002-06. Using the same synonyms, and focusing on what Scopus defines as 'social science', generated 1,964 papers and 8,694 citations (mean 4.4 citation per paper). For the same two analyses, QS reported 5,892 papers and 13,138 citations (mean 2.2) and for 'social science' 3,741 papers with 8,336 citations (mean 2.2).

Following a meeting with QS to discuss these discrepant figures, we were informed by QS that only the 2002 feed was present in the backup file and that the originals seemed to have been lost. QS also told us that it would be impossible to "retrieve a list of papers for LSE from last year to test for double counting or anything like that – there is no way to identify the cause of misalignment between your expected results and our actual ones".

The outcome is that the publicly quoted figure on LSE's citations per paper for the 2007 table is probably out by a factor of two. This inaccurate representation of LSE's research impact, especially if repeated, could in time affect the peer assessment of the LSE for the worse. And it does appear to have been repeated for 2008. QS report 2,445 papers and 6,529 citations (mean 2.7 citation per paper). Our own analysis arrives at different figures – 8,668 citations from a very similar total of 2,549 papers (mean 3.4 citations per paper).

However, without access to the methodology it is not possible to determine which is the right figure.

### ***What counts as social science in the Scopus data base? – a look at Harvard***

The Scopus database divides 'social sciences' into seven sub-categories – multi-disciplinary, arts and humanities, business, management and accounting, decision sciences, economics, econometrics and finance, psychology and social sciences. Reviewing Harvard's actual published papers (2002-2006) it is clear that 'multi-disciplinary' and 'psychology' leads to the inclusion of papers that can hardly be described as social science – for example, any papers in generalist journals such as Nature and Science and topics including clinical, cognitive and neuro-psychology. Again, QS's methodology is a mystery but the lesson here is that the choice of search terms is crucial.

### **Conclusions**

Setting aside the QS assessment of LSE's citation per paper which we think is an under-count, on a number of criteria the methodology to create the THE/QS university rankings is significantly biased against institutions like the LSE that specialise in the social sciences.

Comparing citation counts for single faculty social science institutions with those of multi-faculty institutions is a category mistake; Scopus fails to pick up quality publications of social scientific disciplines in which books and monographs are at least as important publication outputs as journal articles, and Scopus uses too short a time period to capture the peak citation years for social science articles.

This accumulates to form a systematic bias in the assessment of key excellence indicators contributing to the ranking of universities. It is a bit like a football league table deciding to ignore all the goals scored by foreign players, or all the away games for clubs in a particular geographical area. Given the importance that many stakeholders attach to the university rankings, is transparency and accuracy an unreasonable expectation?

London School of Economics and Political Science  
October 2008