
April 2008/14

Issues paper

This report is for information only

This report was commissioned by HEFCE to investigate league tables and their impact on higher education institutions in England. It presents findings from an analysis of five league tables, and an investigation of how higher education institutions respond to league tables generally and the extent to which they influence institutional decision-making and actions.

Counting what is measured or measuring what counts?

League tables and their impact on higher education institutions in England

*Report to HEFCE by the Centre for Higher Education Research
and Information (CHERI), Open University, and Hobsons Research*

Alternative formats

This publication can be downloaded from the HEFCE web-site (www.hefce.ac.uk) under Publications. For readers without access to the internet, we can also supply it on CD or in large print. Please call 0117 931 7035 for alternative format versions.

© HEFCE 2008

The copyright for this publication is held by the Higher Education Funding Council for England (HEFCE). The material may be copied or reproduced provided that the source is acknowledged and the material, wholly or in part, is not used for commercial gain. Use of the material for commercial gain requires the prior written permission of HEFCE.



Contents

	Page
Acknowledgements, steering group and research team	3
Foreword by David Eastwood, Chief Executive, HEFCE	4
Executive summary	5
1 Introduction	8
1.1 Analysis of the league tables	
1.2 Impact on higher education institutions	
1.3 Issues arising	
2 The debate about league tables and their impact	10
2.1 The case for league tables	
2.2 The case against league tables	
2.3 Who uses league tables and why? What is the evidence?	
3 League tables: how they are compiled and the results they produce	15
3.1 General comparison of five league tables	
3.2 How the league tables are compiled	
3.3 A critique of the five league tables	
3.4 Findings from the statistical analysis of the tables	
3.5 Summary of key findings on the five league tables	
4 The impact of league tables on institutions	32
4.1 Survey of higher education institutions	
4.2 Institutional case studies	
4.3 Common themes	
5 Alternative approaches and principles of good practice	50
5.1 The CHE rankings	
5.2 Bringing league tables up-to-date	
5.3 The Berlin Principles	
5.4 What can compilers learn from these approaches?	
6 Discussion and conclusions	53
6.1 What has been confirmed?	
6.2 New research findings	
6.3 Implications and challenges for key parties	
6.4 Where do we go from here?	
7 References	62

Appendices

(available on the HEFCE web-site alongside this document under 2008 Publications)

- A Research methodologies
- B Standard statistical concepts, methods and processes used in the compilation and analysis of league tables
- C Detailed findings of the analyses of the five league tables
- D Detailed findings of the survey of higher education institutions
- E Detailed findings from the institutional case studies
- F The National Student Survey: A brief description
- G Bibliography and relevant web-sites

Acknowledgements

The research team wishes to express its gratitude to those who contributed to the research:

- the steering group
- the compilers of the Sunday Times University Guide, The Times Good University Guide, The Guardian University Guide, the Shanghai Academic Ranking of World Universities and the THES-QS World University Rankings
- the 91 institutions who completed the online survey
- the six case study institutions
- the sector bodies who provided feedback on the research findings.

Membership of the steering group

Ed Smith (Chair), HEFCE Board Member

Professor Michael Arthur, Vice-Chancellor, University of Leeds

Professor Joy Carter, Vice-Chancellor, University of Winchester

Dr Christine Couper, Head of Planning, University of Greenwich

Steve Egan, Deputy Chief Executive, HEFCE

Fiona Hoban, Policy Adviser, Universities UK

Professor Deian Hopkin, Vice-Chancellor, London South Bank University

Alice Hynes, Executive Secretary, GuildHE

Jovan Luzajic, Data Analyst, Universities UK

Fiona MacLeod, Deputy Director, External Relations & Communications, Universities UK

Professor Shirley Pearce, Vice-Chancellor, Loughborough University

Professor Robin Sibson, Chief Executive, HESA

Professor Geoff Whitty, Director, Institute of Education

Supporting HEFCE staff

Kate Nickols, Project Manager

Natalie Waters, Assistant Project Manager

Research team

Professor Roger King, Visiting Professor, CHERI

William Locke, Assistant Director, CHERI

Mark Puncher, Project Manager, Hobsons

Professor John Richardson, Associate, CHERI

Line Verbik, Research Manager, Hobsons

Foreword

League tables are part of the higher education landscape and the newspaper calendar. They are one of the sources to which prospective students refer when making choices, and bring attention to important issues such as 'the student experience', employability and retention.

The league tables also have a much wider impact – for example, on institutions' reputations and potentially on the behaviour of academics, businesses and potential benefactors. Governing bodies take an interest in them as a means of assessing institutional performance, sometimes seizing on them in default of other, more sensitive indicators of institutional performance.

There clearly is a demand for league tables, but there are also questions about their quality, impact and possible perverse incentives. Concerns have been raised about the compilers' choice of indicators, the validity of the methodologies which are employed, the transparency of the processes and the robustness of the rankings.

As a funder of higher education, we have an interest in ensuring that the sector is accurately presented to prospective students, policy-makers and others with a stake in the quality of higher education; and that the relative strengths of particular institutions are appropriately recognised and reflected. We also have an interest in how governors and managers use league tables, and whether this helps them in pursuing and refining their institution's mission or deflects them from these and other key responsibilities. The prominence of research performance and entry qualifications are two issues that have been examined. We are interested in the extent to which league tables support policy objectives – for instance, by making higher education institutions more sensitive to student demands, and any impacts on objectives such as widening participation.

Our purpose in commissioning this research is to stimulate informed debate about league tables across the higher education sector; not to endorse any particular approach. We certainly do not intend to introduce an official published ranking, as some have suggested. We will continue to support the Unistats web-site, which enables users to compare subjects and institutions in a way that recognises the diversity of user needs.

This research throws a considerable amount of light on the approaches and limitations of different league tables and the way universities and colleges respond to them. We hope the debate will lead to improvements to league table methodologies; enable users to better understand the complexities of the league tables, and avoid misunderstanding them; and to help higher education institutions develop approaches that help them satisfy the legitimate information needs of their stakeholders.

I am grateful to all those who have contributed to this research project: to the compilers who were willing to speak frankly to the researchers; to the many institutions who responded in detail to the online survey; and the case study institutions who were so generous with their time. I look forward to the debate!



Professor David Eastwood
Chief Executive, HEFCE

Executive summary

This report investigates league tables and their impact on higher education institutions (HEIs) in England. It presents findings from two strands of research:

- an analysis of five league tables selected for the study, their methodologies and the underlying data employed
- an investigation of how higher education institutions respond to league tables generally and the extent to which they influence institutional decision-making and actions.

The five league tables analysed are:

- national
 - *Sunday Times University Guide*
 - *The Times Good University Guide*
 - *The Guardian University Guide*
- world rankings
 - *Academic Ranking of World Universities* (Shanghai Jiao Tong University Institute of Higher Education)
 - *THES-QS World University Rankings*.

The purpose of the research is to stimulate informed debate about the approaches and limitations of the various league tables, and greater understanding among the users and stakeholders of the implications of making decisions based on these sources of information.

Analysis of the five league tables

Below are the main findings about the league tables themselves.

- **The five league tables do not provide a complete picture of the sector.** Their focus is on full-time, undergraduate provision and institutional, rather than subject-based, rankings. This emphasis results in the exclusion of a wide range of specialist, postgraduate, small or predominantly part-time institutions from the published rankings. The lack of availability of certain types of published data results in some higher education provision by further education institutions also being excluded. Not including the full range of higher education provision that would be of interest to the target users of league tables is a significant limitation on their usefulness.
- **Some of the measures included are poor proxies for the qualities identified.** The measures used by the compilers are largely determined by the data available rather than by clear and coherent concepts of, for example, 'excellence' or 'a world class university'. Also the weightings applied do not always seem to have the desired effect on the overall scores for institutions. This brings into question the validity of the overall tables. More attention should be given to developing methodologies that reflect the qualities of institutions identified as desirable by the publishers.
- **There is insufficient transparency about the way the league tables are compiled.** Methods for calculating the scores for each institution are not always made clear, and some appear to be non-standard or, at least, produce non-standardised results. Some publishers even warn readers that it is not possible to replicate the overall scores from the published indicators.
- **The resulting rankings largely reflect reputational factors and not necessarily the quality or performance of institutions.** In the national league tables, entry qualifications, good degrees and Research Assessment Exercise grades are more highly correlated with the total scores than are other measures. The total scores of institutions are less highly correlated with indicators based on the National Student Survey (NSS) results. This suggests that important elements of course and institutional quality, such as educational processes, do not contribute as much as intended to ranking outcomes. In the world rankings the picture is more mixed, although articles published and cited seem to have a considerable influence on the ranking positions.
- **The format and content of league tables could be brought up to date.** They could be made more easily accessible and interactive.

For example users could be given the facility to select the indicators which are important to them, and the weightings applied to these. League tables could also reflect recent developments in higher education, such as online learning, and current issues of concern to users, such as social responsibility and environmental impact.

Impacts on higher education institutions

Below are the main findings about how league tables impact on institutions' actions and decision-making.

- **Institutions are strongly influenced by league tables.** League tables and the individual indicators used to compile them appear to be having a significant influence on institutions' actions and decision-making, although HEIs themselves are reluctant to acknowledge this. League tables are being used by many institutions as key performance indicators and, in some cases, strategic targets. They are being used by some senior management teams and governing bodies as one of several drivers for internal change. While it is understandable that an institution values its public image as represented in league tables, each needs to manage the tensions between league table performance and institutional and governmental policies and priorities. Some institutions expressed the belief that league tables will become more influential as higher education becomes more competitive.

There is a challenge for institutions, sector bodies and policy makers to ensure the accessibility of accurate, relevant and comprehensive information about higher education institutions to prospective students, their advisers and other users of league tables.

- **Institutions do not feel they have sufficient influence on the compilers and the methodologies used in the rankings.** Many favour the inclusion of more measures of value added, and for league tables to reflect broader characteristics than just reputation

and research. The lack of transparency about how league tables are compiled is a concern to many HEIs.

- **Institutions are responding to the National Student Survey.** Increasing importance is being attached to the results of the National Student Survey, and their inclusion in league tables may be contributing to this. There is widespread evidence of institutional actions and initiatives arising from NSS results.
- **League tables have resulted in better data collection.** League tables have prompted many institutions to review their data collection and submissions to HESA and other bodies. They are now seeking to provide higher quality returns.
- **Staff are affected by league tables.** Despite widespread scepticism about league tables and their methodologies within HEIs, rankings affect staff morale. However, they do not appear to influence academic recruitment significantly except, perhaps, for some individuals considering a move to the UK. Nevertheless, it is thought to be unlikely that academics will move to a lower-ranked institution than their current one unless there is a pocket of excellence or other overriding reason.
- **League tables may conflict with other priorities.** There is perceived tension between league table performance and institutional and governmental policies and concerns (e.g. on academic standards, widening participation, community engagement and the provision of socially-valued subjects). Institutions are having to manage such tensions with great care.

Institutions' perceptions of the impacts of league tables on users

Institutions were asked what impact they thought league tables have on users. Below is a summary of their perceptions.

- **'Traditional' prospective students are more likely to use league tables.** For younger HE applicants of higher academic achievement

and social class, league tables may be influential, but only part of the complex decision making process and often used to confirm a decision already made. Factors such as subject and location still appear to play a greater part in decision-making. Applicants who are mature, locally recruited, more vocationally orientated and/or from less advantaged backgrounds are not as likely to use them. To make the most of league tables, prospective students and their advisers could be better informed about which table(s) or indicators best reflect the higher education experience they are looking for. Subject-based rather than institutional rankings are likely to give a better indication of 'performance' (at least in the way that this is assessed in a league table) compared with overall institutional rankings.

- **Internationally, league tables influence students, academics and governments.**

International students seem to be increasingly using league tables in selecting which higher education institution in the UK to apply to. Foreign governments and scholarship bodies are using them to inform decisions about support for students and which institutions in the UK to partner with. League tables appear to influence international academics from some countries in deciding which UK institution to come to, and more so than academics moving institution within the UK.

The world rankings are growing in influence due to internationalisation and are likely to continue to do so if bibliometric indicators are introduced to assess research quality in the UK.

Given this increasing influence, there is an onus on policy makers and institutions themselves to promote greater public understanding of league tables and alternative sources of information about higher education. There is also an argument for codifying good practice in the compilation of rankings as a reference point for both compilers and users of league tables. With the increasing influence of world rankings originating from outside the UK and their use by overseas students, academics and governments, this may be best achieved at an international level as part of an inter-governmental initiative.

There are a number of areas that would benefit from further research, in particular, into users' perspectives, including:

- prospective (including international) students' use of league tables
- the use of new sources of information on higher education institutions, e.g. social networking internet sites and Unistats
- the influence of league tables on foreign governments, scholarship bodies, employers and individual academics.

General conclusions

The influence of league tables is increasing both nationally and internationally, and cannot be ignored despite serious methodological limitations. They are being used for a broader range of purposes than originally intended, and being bestowed with more meaning than the data alone may bear. It is possible that the influence of league tables will increase further if the cap on tuition fees for full-time undergraduate courses is raised or lifted altogether. It is possible that ranking position will affect an institution's ability to charge the highest fees across all its courses.

1 Introduction

This report on league tables and their impact on higher education institutions (HEIs) in England was commissioned by the Higher Education Funding Council for England (HEFCE). It presents findings from two strands of research:

- an analysis of five league tables selected for the study, their methodologies and the underlying data employed
- an investigation of how higher education institutions respond to league tables generally and the extent to which they influence institutional decision making and actions.

The five league tables selected for the study are:

- national league tables
 - *Sunday Times University Guide*
 - *The Times Good University Guide*
 - *The Guardian University Guide*
- world university rankings
 - *Academic Ranking of World Universities* (published in China by Shanghai Jiao Tong University Institute of Higher Education, SJTU)
 - *THES-QS World University Rankings*.¹

The purpose of the research is: to stimulate informed debate about the approaches and limitations of the various league tables, and greater understanding among the users and stakeholders of the implications of making decisions based on these sources of information.

1.1 Analysis of the league tables

The heated debate about league tables often centres on their robustness and consistency, as each is based on different indicators and weightings. The level of transparency about the rationale, data sources and methodologies used in compiling them is also often brought into question. Yet league tables still appear to sell

large numbers of newspapers and guidebooks, and attract many visits to their web-sites. In what has become a highly competitive environment, a higher education institution is seldom likely to avoid the temptation of citing a league table in a nationally respected newspaper if it is ranked highly in it. The debate about league tables is explored further in Section 2 of this report.

League table compilers are constrained by the availability, or otherwise, of comparable and verified data by which to measure the characteristics they seek to represent in their rankings. Because 'quality' or 'excellence' are difficult to define and judge, it could be argued that league tables count what can be measured rather than measure what counts, hence the title of this report.

The league tables and rankings selected for this study are among the best known in the UK, and each has its own particular characteristics. The three national league tables concentrate on undergraduate education with a focus on teaching and learning and, in two of the three, research. In contrast, the main emphasis of the two world rankings considered here is almost entirely on research and reputation. For this reason the data employed by the national and international tables are quite different, and so it is not surprising that their rankings differ. The compilers of each table also have their own criteria for determining which institutions can be included in – or excluded from – the ranking. Such factors include whether they must be universities as distinct from other types of higher education institution, whether they teach a sufficiently broad range of subjects, and whether their provision is predominantly full-time undergraduate. What all five of the league tables have in common is that they aggregate organisational performance and produce a single ranking of institutions. Where they differ is in the presentation of listings by discipline or area, with

¹ From 10 January 2008, the *Times Higher Education Supplement* (*THES*) was renamed *The Times Higher*. However, as this report refers specifically to the *THES-QS World University Rankings* published on 9 November 2007, the former title is used throughout.

differing degrees of detail and emphasis. Section 3 of this report explains and analyses the methodologies employed by each of the five league tables selected for this study, and the results they produce.

1.2 Impact on higher education institutions

Evidence of the impact of league tables on higher education (HE) is scarce compared with the literature on the methodologies used for compiling them. Section 4 reports the findings from a 2007 survey of higher education institutions in England of views of league tables, how important they are, who benefits from them, the key variables, institutions' own positions, and the overall impact on institutions. Also included are six case studies exploring many of these issues in further detail in a range of types of higher education institution.

1.3 Issues arising

Finally, there are broader issues of policy and principle. Are there public interests that are not represented in the league tables? Might the impact of the tables even conflict with public policy? Should policy makers have a role in the development and dissemination of the ranking systems and, if so, what should this be? Certainly, it is important that those producing league tables should be accountable for the quality of their data collection, methodology and representation. But should the compilers be held responsible for the wider impacts of their rankings? Section 5 discusses the issues arising from the findings presented in this report and poses challenges for the compilers of league tables, the users and the higher education institutions that are affected by them.

The following pages are a summary of extensive research and analysis into these issues. The findings and conclusions here are supported by more detailed appendices available to download from the HEFCE web-site.² These include:

- analyses of the five selected league tables, the survey of higher education institutions and the six case studies investigating the impacts on institutions
- an account of the methodologies used in the research project
- an explanation of standard statistical concepts, methods and processes related to league tables and their analysis
- the results of our statistical analyses
- a brief description of the National Student Survey (NSS), which featured quite strongly in our findings
- a full bibliography and list of web-based resources relevant to the issues covered by the research.

² At http://www.hefce.ac.uk/Pubs/hefce/2008/08_14/

2 The debate about league tables and their impact

Since their first publication, league tables have provoked interest, discussion and criticism among a wide range of parties. Many different views have been expressed, and this section summarises some of the main arguments for and against the ranking of higher education institutions and the evidence of their impact. It draws on the relevant research literature and material from the publishers of league tables, including some of the interviews conducted for this study. It goes on to describe the rather patchy research evidence of the use of league tables by prospective students, employers, higher education institutions and others which has provided the starting point for our research.

2.1 The case for league tables

The following is a summary of the major arguments in favour of league tables and the ranking of higher education institutions in general.

- **Newspaper league tables compensate for a perceived deficit of information about universities and their performance:** The Quality Assurance Agency's Subject Review and particularly its Teaching Quality Assessment (TQA) reports are out of date. The Research Assessment Exercise (RAE) has only taken place once every few years and, again, the results become increasingly dated towards the end of the period of assessment. The Teaching Quality Information (TQI) web-site was heavily criticised for not being accessible to its key users when launched in 2004, and the National Student Survey is in the process of establishing itself as a recognised source of feedback from final year students. The Unistats web-site³ (the successor to the TQI web-site) now brings together some Higher Education Statistics Agency (HESA) data and the NSS results in one place, together with additional information provided directly by universities and colleges. League tables use some of these data, but supplement them with other measures of, for example, research
- **With the introduction of variable fees for full-time undergraduate courses, applicants are becoming more discerning in choosing a university, and competition between higher education institutions is increasing:** As more of the cost of higher education is being shared with students and their families, these 'consumers' are said to be seeking 'value for money' and customised information about the likely benefits they might look forward to (Foskett et al, 2006). If the Government raises the cap on variable fees or lifts it altogether, it is argued, the demand for the guidance offered by league tables and similar sources will grow (this view was expressed by higher education institutions in our interviews with them).
- **Most of the data used by league table compilers are published by official agencies and other respected sources:** Many of the indicators chosen are based on data provided by institutions themselves to national bodies such as HESA and the funding councils or collected by reputable organisations. These data are verified after being subject to quality controls. The league table compilers sort through a mass of complex data on behalf of the public and select the key information for their readers (Kingston, 2002). The publishers pay for data that are not automatically released into the public domain, from agencies such as HESA, for research databases, and for opinion surveys conducted by experts in the field. They make these data available to their readers in an accessible format.

<http://www.unistats.com/>

- **Where opinion surveys are used, league table compilers seek the views of experts:** These include well-informed professionals such as head teachers, academics and graduate recruiters (Jobbins, 2005). Academic subject experts, for example, can provide an up-to-date picture of international higher education that can balance the quantitative records of past research achievements (THES-QS, 2006b). Without this expert opinion, it is also argued, alternative guides featuring the uncorroborated views of a minority of students will gain more currency than perhaps they should.
- **The collection of statistics about performance is part of sound institutional management practice:** Institutions need to improve their internal data collection procedures and make clear links between the statistics they submit to agencies such as HESA and the data that league table compilers use. Understanding more about an institution's own key strengths and weaknesses is critical to improving performance and intelligent decision-making (from an interview with a compiler).
- **Compilers positively seek to engage with institutions to ensure the data they use are as accurate as possible:** Several of the publishers have academic research associates or steering groups largely consisting of staff from higher education institutions with a particular competence in data collection and analysis. Most of the compilers positively welcome the involvement of institutions in the process as it is in their own interest to ensure that the data they use are as accurate as possible (Jobbins, 2005). One well-known compiler of The Good University Guide (not examined in this report) makes a particular effort to visit institutions to explain how league tables are compiled and advise them on actions they can take.
- **In particular subjects, such as business and management, league tables can help to delineate and clarify the field:** Rankings contribute to a 'template' of an international business school, what it is and what it should do, and help to develop criteria for

evaluating its performance as an organisation (Wedlin, 2006). This can help to promote a particular area of education and make it more visible to those who might wish to study it or use its expertise.

2.2 The case against league tables

The following is a summary of the major criticisms of league tables and the ranking of higher education institutions in general.

- **League tables are an inadequate form of guidance for prospective students in choosing a course:** Those that provide only aggregate data for whole institutions are of limited utility (Dill and Soo, 2005). Applicants want to know which is the best course for them rather than the best university overall (Bowden, 2000). Many of the key influences on students' choices are not included in league tables (e.g. location, distance from home, living costs, bursaries and other financial support, non-academic facilities) (Ehrenberg, 2003).
- **League tables present an inaccurate picture of higher education:** 'The newspapers re-enforce a traditional view of what a university is, accurate for many of the older universities but only giving a partial view of what is happening in the newer British universities' (Eccles, 2002: 425). 'The indicators used for academic quality in most university league tables are of questionable validity and appear to be biased toward research reputation and academic prestige rather than student learning' (Dill, 2006: 14). League tables treat all institutions the same despite their differences in mission, focus and origins (Turner, 2005). The scores of the different variables are aggregated to produce one overall score for each institution which cannot be expected to represent the qualities or performance of a complex organisation (Provan and Abercromby, 2000). Rankings 'pretend to be objective and scientific; in reality, however, they are manifestations of ideologies about the purpose of higher education' (increasingly synonymous with Western values – meaning science, research and a lot of money) (Birnbbaum, 2007: 7).

- **The methods used to compile league tables are not justifiable:** Important aspects of institutional performance have proved impossible to capture with adequate statistical robustness (Yorke and Longden, 2005). Data require interpretation and some conceptual framework, but league tables often combine performance indicators in an ad hoc way that may not even reflect the compilers' own concept of quality or excellent performance as stated in their publicity materials. The indicators selected and weightings applied are often not supported by an explicit rationale (Clarke, 2002) and the compilers often fail to give precise details of how the variables are constructed (Yorke, 1997). Performance indicators reflect the perspective of those who commissioned them (e.g. funding bodies seeking information about institutional performance in a range of areas) and league table compilers use them for other purposes for which they were not designed (e.g. informing prospective students about programme choice) (Eccles, 2002; Yorke and Longden, 2005).
- **The methodologies used to compile league tables produce perverse results:** The difference in scores between institutions placed several positions apart may not be statistically significant, even though the difference in positions suggests a disparity in quality or performance. Alterations in methodology from year to year – in the data sources, indicators, procedures for calculating scores, weightings, ranking methods, etc – produce fluctuations in institutional positions that have nothing to do with changes in quality or performance (Yorke, 1997). 'Were the overall scores to perturb what amounts almost to "the natural order of things" and not have the most elite institutions at the top, then the compilers would worry about their tables being taken seriously. Put another way, tables are not immune from cultural bias' (Yorke and Longden, 2005: 19; see also Brown, 2006).
- **League tables promote perverse behaviour among students and institutions:** They encourage institutions to take superficial

actions to improve their positions rather than engaging in the more challenging task of enhancing teaching and student learning (Dill and Soo, 2005). They reduce higher education to a product, encourage students to act like consumers and all stakeholders to adopt an instrumentalist approach (Naidoo and Jamieson, 2005; Brown, 2006).

The debates about league tables are often heated, but do they matter? Does anyone actually use them and do they really have any impact? Section 2.3 summarises the evidence on this.

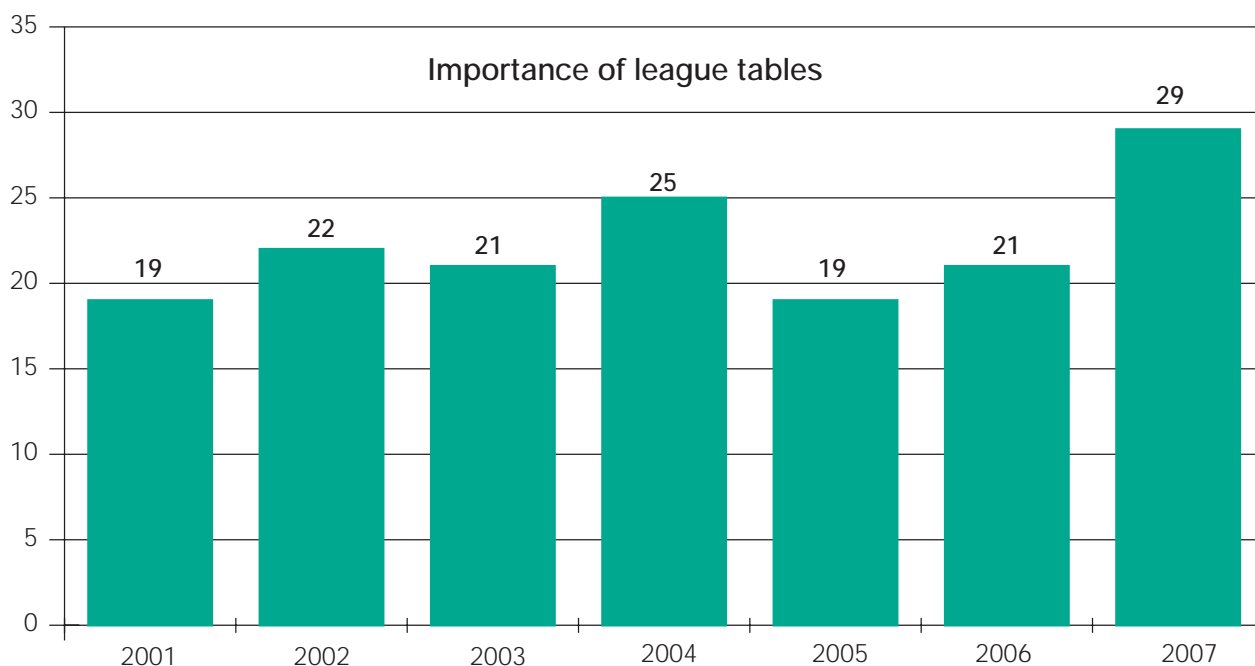
2.3 Who uses league tables and why? What is the evidence?

Although it was beyond the scope of this research project to investigate the use of league tables by the various intended (and unintended) audiences (with the exception of higher education institutions), this is pertinent to an understanding of (i) why and how they are compiled and (ii) their impact on higher education institutions. This section summarises the rather patchy evidence on the three major 'users': students, employers and higher education institutions. Other users, such as foreign governments, scholarship bodies and individual academics, have not yet featured in the published research, but there is anecdotal evidence of their use of league tables which is backed up by our findings from higher education institutions which are reported in Section 4 of this report. That section also includes reports from higher education institutions in England that students and institutions from abroad are using league tables in their decision-making about where to study and who to partner with.

2.3.1 Prospective students

In 2007, the UNITE *Student Experience* survey asked over 1,600 students about the factors that were important to them in choosing a university. University league tables were mentioned by 29% of respondents and placed equal sixth in the ranking behind a number of other reputational factors. According to each of the seven UNITE reports since 2001 (UNITE 2001-2007), the proportion of respondents citing league tables as

Figure 1 The proportion of respondents citing league tables as important, 2001-2007



Source: UNITE 2001-2007

important has generally increased, but the pattern has been erratic (see Figure 1).

According to UNITE:

‘Those with better access to information, like students of social grade ABC1, are much more likely to use league tables than C2DE students (30% vs. 22%). They are also more likely to use the academic reputation of the university to make their selection (50% vs. 38% of C2DE).’ (UNITE 2007, p11)

This seems to complement previous findings that commercial league tables are often designed for and used by students of higher achievement and social class. Connor et al (1999), for example, found that younger students (under 21) and those from independent schools were more likely to use league tables in newspapers as a source of information about universities – and more likely to find them useful – than older, further education and vocationally qualified or access students. Roberts and Thompson (2007) found that Asians, men, those who choose more distant universities, second generation students and international students are all more likely to use league tables.

Reay et al (2005) found that students from state schools were much less likely to use them. Archer et al (2003) discuss the possibility that working-class applicants may not feel comfortable studying at prestigious universities, and it would be worth investigating whether this group may be discouraged from applying to institutions with high league table positions.

Research undertaken by Roberts and Thompson (2007) also shows that league tables are being used more widely than the UNITE surveys suggest, but are only part of the complex decision-making process for students. Although 61% of the 13,000 new undergraduates surveyed said they at least looked at them, only 16% regarded them as very important. A university’s position in the subject tables, according to the authors, probably has greater impact than their standing in the overall institutional rankings, and this is more to do with confirming choices already made (or, at least, students justifying them to their parents) than with initial selection. In any case, Brown (2006) questions whether students have the interest, energy or expertise to meaningfully interrogate the data included in league tables.

Indeed, there appears to be little evidence of the level of applications for individual universities rising after their positions have improved in the league tables, or falling when they have dropped down the rankings (Eccles, 2002).

2.3.2 Employers

A report for HEFCE in 2006 – *Needs of employers and related organisations for information about quality and standards of higher education*, by the University of Sussex School of Education – found that 25% of the graduate recruiter informants relied on league tables, including those published by *The Times*, the *Sunday Times* and *The Guardian*, to influence their choices of which higher education institutions to target for graduate recruitment. ‘They appeared to prefer aggregated, at-a-glance and highly summarised datasets to detailed and specialised information. It was not always clear if employers knew how those scores were calculated’ (HEFCE, 2006: 9).

Two of the authors of that report went on to describe the real and imagined league tables that informed employers’ decision-making about the marketing of jobs and the selection of candidates, in an effort to reduce risk and meet resource constraints (Morley and Aynsley, 2007). In particular, they found a common belief that the most selective higher education institutions produced the best quality graduates.

The practice of relying on leagues tables as signifiers of quality and standards could be undermining widening participation initiatives in the sector if the HEIs where non-traditional students are most likely to be enrolled are not included in the Top 20 list (Morley and Aynsley, 2007: 243) (See also Lampl, 2004).

2.3.3 Higher education institutions

The research evidence on the effects of league tables on higher education institutions themselves is limited. The international survey of higher education leaders and senior managers on the impact of league tables on strategic and operational decision-making and choice supported by the OECD (Hazelkorn, 2007) informed the construction of the questionnaire used in our

survey and interview schedule for the case studies. Where relevant, other findings from Hazelkorn’s study have been included in the discussion of the impacts of league tables on higher education institutions in Section 4. The following is a summary of her findings on the impact of league tables on institutional decision-making:

- 57% of respondents thought the impact of league tables has been broadly positive on their institution’s reputation and broadly helped its development, in attracting students, forming academic partnerships, collaboration, programme development and staff morale
- the methodologies, however, were described as simplistic and lacking transparency by many respondents, and the nature of the responses depended to some extent on the institution’s position in the tables, with those among the lower rankings criticising league tables for creating a cycle of disadvantage
- 56% have a formal internal process for reviewing their rankings
- the majority have taken strategic or academic decisions or actions, incorporating the outcomes into their strategic planning mechanisms, using them to identify weaknesses and resolve institutional problems, and develop better management information systems
- 76% monitored the performance of other higher education institutions in their country, including considering this before starting discussions about collaboration. However, most institutional users tend to draw broad brushstroke conclusions from them, using the results to reassure themselves.

The evidence of use of league tables is patchy and inconclusive. It does suggest that certain kinds of prospective students may increasingly refer to league tables at some point in their decision-making process, and that higher education institutions are themselves major users despite their criticisms of the methodologies adopted by compilers. Our research seems to confirm both of these findings (see Section 4).

3 League tables: how they are compiled and the results they produce

This section analyses the methodologies employed by the five league tables in this study and the results they produce. The findings are based on analyses of the published league tables and related material, interviews with the publishers and compilers and statistical analyses of the results, as well as a review of the research literature (more detail on research methodologies is at Appendix A). Firstly, a general comparison of the league tables provides the context for an explanation of how they are compiled. A critique of each of the five league tables is then provided, followed by the findings from the statistical analysis carried out for

each of them, including comparison of the three national tables and the two world rankings. More detail on the analysis appears in Appendix C.

3.1 General comparison of five league tables

Table 1 shows the key features of each league table including, for the most recent version, the numbers of indicators, range of weightings and sources and currency of data used by each.

Where weightings are expressed in numbers by a compiler (*The Times* and *Sunday Times*), these have been converted into percentages.

Table 1 Key features of each league table/ranking

Features	<i>The Guardian</i>	<i>The Times</i>	<i>Sunday Times</i>	<i>THES-QS World University Rankings</i>	<i>SJTU ARWU</i>
First year of publication	1999	1992	1998	2004	2003
Most recent publication date	May 2007	August 2007	September 2007	November 2007	August 2007
No. of institutions	120	113	123	201	510
No. of indicators	7	8	9	6	6
Lowest – highest weighting	5 – 17%	11 – 17%	4.5 – 23%	5 – 40%	10 – 20%
Sources of data	HESA HEFCE (NSS)	HESA HEFCE (including NSS & RAE)	Own surveys HESA HEFCE (including NSS & RAE) QAA SFC HEFCW	Own surveys Scopus Universities National agencies	Nobel Foundation International Mathematical Union Thomson ISI Universities National agencies
Currency of data	2004-2006 (mostly 2005/06)	2001-2006 (mostly 2004/05)	1995-2007 (mostly 2005/06)	2002-2007	1901-2007
No. of subject categories	46	32 in 2007 (normally 64)	N/A	5	5

Table 2 Indicators and weightings

Indicators	<i>The Guardian</i>	<i>The Times</i> [*]	<i>Sunday Times</i> [*]	<i>THES World University Rankings</i>	SJTU <i>ARWU</i> [‡]
Student survey (NSS)	15% (Teaching: 10% Feedback: 5%)	17%	16%		
TQA/Subject Review			7%		
Head teacher survey			4.5%		
Entry standards	17%	11%	23%		
Spending	17%	11%			
Value added	17%				
Good Honours		11%	9%		
Completion/dropout		11%	Variable: bonus/ penalty mark		
Graduate prospects	17%	11%			
Unemployment			9%		
Research assessment		17%	18%		
Student:staff ratio	17%	11%	9%	20%	
Recruiter survey				10%	
Peer survey			4.5%	40%	
International staff				5%	
International students				5%	
Nobel laureates (staff)					20%
Nobel laureates (alumni)					10%
Highly cited researchers					20%
Articles published					20%
Articles cited				20%	20%
Size					10%
Total	100%	100%	100%	100%	100%

* Approximate figures

‡ The SJTU *ARWU* uses different weightings for institutions that specialise in humanities or social science

Table 2 shows the individual indicators and the weightings applied by each compiler, where available. Some indicators have been given a common label even when the data sources or methods of calculation are not identical but where they are largely measuring a similar aspect, e.g. completion and dropout.

Table 2 demonstrates the similarities and differences between the national league tables and world rankings.⁴ *The Times* and *The Sunday Times* are, perhaps, most similar in terms of indicators, with six in common (whereas *The Times* and *The Guardian* have five in common, and the *Sunday Times* and *The Guardian* have only three in common). The published weightings are also similar: on four of the six common indicators shared by *The Times* and the *Sunday Times* there is only a 1 or 2% difference.⁵

Since their inception, six institutions have always appeared in the top 10 of the three national league tables in this study:

- Imperial College London
- London School of Economics and Political Science
- University College London
- University of Cambridge
- University of Oxford
- University of Warwick.

Likewise, several institutions regularly appear towards the bottom of several tables.

It is obvious that the world rankings are very different from the national league tables, but Table 2 also makes it clear that the two world rankings are very different from each other in terms of indicators and weightings used. Paradoxically, the ranking outcomes for the top institutions in the world rankings were – at least until 2006 – fairly similar (with one or two notable exceptions). This appears to confirm the common assumption that some universities will almost always appear at the top of any league

table. Some commentators have suggested that ‘different ranking systems provide consistent results for some institutions and inconsistent ones for others’ (Usher and Savino, 2006: 32). So, for example, there may be consistency at the top and bottom of particular league tables but volatility for those institutions in the middle.

3.2 How the league tables are compiled

The methodology adopted for each of the league tables and rankings is influenced by the aims and purposes of the publisher and the ethos of the organisation compiling the ranking. Four of the tables are commercial ventures, seeking to sell newspapers and/or books or retain readers in a highly competitive publishing market. One (SJTU ARWU) originates from an academic research centre, and this is reflected in its rather different approach. Of the newspapers, *The Guardian* strongly emphasises its subject-specific tables which, it argues, are more helpful for applicants than the overall standing of universities (Macleod, 2007). By contrast, one of the five compilers does not provide subject tables at all (*Sunday Times*), and both the world rankings only feature five broad sub-divisions of fields. More detail on each league table is provided in Section 3.3 and in Appendix C.

Compilers of league tables generally follow a nine-step process:

1. The indicators or measures are selected
2. Inclusion/exclusion criteria are set
3. Data are collected for the indicators
4. The data might be normalised for some indicators
5. The data for each indicator are converted into a score
6. The distribution of scores within each indicator might be standardised
7. The scores from each indicator are weighted

⁴ Different compilers may calculate similar indicators, e.g. Articles Cited, in different ways.

⁵ However, see Section 3.2.7.

8. The weighted scores are aggregated

9. The overall scores are ranked

They may not be carried out in exactly this order: 1 and 3 might be reversed, for example, and 5 and 6 might be combined. Step 2 – deciding which institutions to include or exclude from the table – might be undertaken at any stage in the process. Two of the procedures, 4 and 6, appear to be optional, and this is explained below.

However, the particular calculations applied in steps 4, 5 and 6 are not always apparent from the published explanations. Indeed, two of the publishers, *The Times* and *The Guardian*, warn that it is not possible to replicate the overall scores from the published indicators. The SJTU ARWU has also been criticised for being irreproducible (Florian, 2007).

Each of the nine steps is considered below.

3.2.1 The indicators or measures are selected

There are two key tests of a measure: validity and reliability. An indicator is valid when it measures what it is intended to measure. To test this we can ask whether it measures excellence in research or educational provision – whatever it is purported to measure – or whether it is a reflection of some other ‘X’ factor (e.g. institutional resources, size, age, selectivity in admissions, the nature of the particular subject profile). The trouble with assessing the validity of league table variables is that compilers can be vague about what an indicator is intended to measure, so this can be quite difficult to pin down.

An indicator is *reliable* when it yields consistent results and is not subject to error. To test this we can ask whether it measures something in a constant fashion and whether it can be interpreted in a similar way across different kinds of programmes, institutions and national systems. We also need to ask whether errors are introduced at any stage, for example, at the point of defining the measure, when gathering and processing the data, calculating figures and combining different indicators of the same aspect (e.g. for graduate prospects, combining data on

employment overall and specifically ‘graduate’ employment).

When selecting indicators, few, if any, of the league table compilers distinguish between measures of inputs, processes and outputs; they simply aggregate them.

- **inputs** might include entry standards, student:staff ratios and expenditure on facilities
- **processes** might include quality assessments of teaching
- **outputs** include completion rates, proportion of good honours degrees and graduate employment levels.

It may be argued that processes and outputs are more valid measures of the quality of an institution than inputs, because inputs merely reflect the resources at its disposal, not how effectively – or efficiently – it utilises them. But process indicators are more difficult to identify, and more complex and costly to measure, than inputs or outputs. Our analysis found few instances of what might be classified as process indicators: only Teaching Quality scores and some aspects of the NSS, and there are caveats around even these (see Appendix C). As *The Times* pointed out in our interview, there are real difficulties in evaluating the quality of teaching and student learning processes in a consistent and thorough way, and input measures are only distant proxies for these aspects.

The latter point is supported by Pascarella and Terenzini (2005) who, in a wide-ranging review of largely US research literature on the impact of college education, found that inputs such as expenditure per student, student:staff ratios, research quality, admission selectivity or reputation have only an inconsistent or trivial relationship with student learning and achievement. This brings into serious question the validity of input measures. Appendix C includes a detailed analysis of the validity and reliability of the indicators used in the five tables, drawing on the research literature and compilers’ comments.

There are also caveats around output indicators (see Appendix C). These are much more diverse than other kinds of indicator, and there is less consensus among league table compilers about which to include. Potentially, they offer better indicators of quality and performance than input measures, but they need to be contextualised. Even degree results and employment rates are subject to many factors – e.g. subject differences, the age of graduates and trends in labour markets – that make them difficult to interpret. However, they may reflect an institution’s recruitment policies and reputation rather than the actual quality of education. Ideally, outputs (such as research quality) need to be controlled for critical inputs (such as size of institution) if they are to be valid indicators.

3.2.2 Inclusion/exclusion criteria are set

Compilers’ decisions about which institutions to include and which to leave out may follow from the purposes and rationale of the league table or be taken for pragmatic reasons such as the availability of data. *The Times*, for example, features only university institutions, and the *THES* world ranking includes only universities that teach undergraduates in at least two of the five discipline areas identified. These various criteria mean that a range of institutions may be excluded from any of the five league tables examined in this report. Particularly at risk of exclusion are non-university higher education institutions, specialist and small higher education institutions and those that cater mainly for part-time and/or postgraduate students. Lack of available data also results in the exclusion of higher education provision by further education institutions.⁶ Other factors causing exclusion include incomplete data or where an institution has asked HESA to withhold its figures from one or more compilers. The number of institutions included in the national tables ranges from 113

(*The Times*) to 123 (*Sunday Times*) out of a possible 168 in the UK. In 2007, the *THES World University Rankings* reduced the number of institutions it includes in the book version from 500 to 200 (which brings it into line with its online version).

3.2.3 Data are collected for the indicators

Compilers use data from several sources. For the national tables, the major source is HESA. The compilers provide a specification of the data they wish HESA to provide. Data are then prepared to that specification and, in line with HESA policy, each higher education institution is given the opportunity to preview its own data for two weeks before despatch to the compiler. During this period higher education institutions may query aspects of the data or may provide supporting information to aid interpretation of the data, which is then passed to the compiler.

Although the precise nature of feedback during the preview period varies, approximately 25% of the queries to HESA from higher education institutions during this time relate to either identification of errors in their original data submissions or providing further explanation of apparent anomalies. The remainder are typically questions about definitions, release procedures or onward use. Errors identified in original data submissions by higher education institutions may result in provision of corrected data for league table use. In such cases full supporting information on the nature of the error must be provided by the institution, and HESA policy is to record the details of the error within its data quality database. The resulting erroneous data are then suppressed within the HESA data extracts and the corrected material is passed to the compiler, clearly indicated as originating directly from the HEI. HESA does not advise on how to compile the tables as this might result in

⁶ Students registered at a higher education institution but taught at a further education college under a ‘franchise’ arrangement are included with other students in HESA returns and also the league table variables (apart from student:staff ratios) under the relevant higher education institution. The provision for students registered at further education colleges is excluded completely. Work in developing data for this provision is under way with a view to expanding the coverage of the Unistats web-site.

some league tables claiming to be 'endorsed' by HESA. Compilers are required by HESA to include a disclaimer alongside their tables.⁷

Higher education institutions also provide data direct to compilers; these will not have been quality assured by HESA. In the final stages of processing data, several compilers check with individual institutions, to ensure that anomalies and errors are corrected. There are instances where, after publication of the league tables in the newspaper, *The Guardian* has substantially altered the ranking positions and then posted these on the web-site or included them in the book version.

Other sources of data include UK funding councils, including the results of the National Student Survey results (see Appendix F for a description of the NSS). Compilers of the world rankings gather data from other national agencies, research databases and the web-sites of international academic awards. Until 2007, both world rankings used the Thomson ISI database of research; the *THES* now purchases data from Scopus. Two of the five league tables commission their own opinion surveys of academics, head teachers and/or graduate recruiters. However, even were the surveys to adhere to scientific methodology, opinions gathered are still subjective observations. The responses are more likely to be influenced by the existing reputation of an institution (the 'halo effect') than by actual knowledge of an HEI, its academic departments or their graduates. In reality, respondents may have little or no knowledge of many of the programmes or expertise in the aspects of an institution's performance they are being asked to evaluate.

League tables use data from the last five years except where Teaching Quality scores are still utilised (*Sunday Times*), RAE grades are included

(*The Times* and *Sunday Times*) and Nobel Laureates are counted (SJTU ARWU). Even where the same data sources are used, the national tables published in the same year do not always use the same source year. For example, *The Times* league table published in August 2007 used HESA data from a year earlier than *The Guardian* and the *Sunday Times*, published in May and September respectively. This may restrict comparability of the tables.

Where data are incomplete, the general principle applied is that individual institutions do not benefit or suffer. The compilers do not want to introduce perverse incentives for institutions to withhold data. When scores are missing in particular indicators – as has been the case for the NSS for some institutions or the number of academic staff in foreign institutions – the institution is usually awarded a mean score for all higher education institutions in the table. There has, however, been controversy over compilers of national tables crediting several highly placed institutions with mean scores when their responses had not reached the threshold for inclusion.

3.2.4 The data might be normalised for some indicators

League table compilers sometimes refer to 'normalisation' in describing their methodology, but the term seems to be used in different ways and seldom in the statisticians' sense of transforming a distribution of scores into a normal distribution (see Appendix B). In some cases, it refers to an adjustment to take into account variations in the size of institutions (for instance, citation counts may be divided by the number of staff). In others, it is taken to mean adjustment for the subject mix within an HEI, for example a predominantly arts and humanities

⁷ For example, *The Times* includes the following statement on its web-site: 'The provision of the data by the above sources does not necessarily imply agreement with the data manipulation and construction of the table. Universities were provided with sets of their own HESA data, which would form the basis of the table, in advance of publication and were offered the opportunity to check the information. Some universities supplied replacement corrected data.'

institution, that may otherwise skew its results. Williams (2007) argues for the need to control for discipline coverage in both teaching and research because, for example, only a minority of higher education institutions have a clinical medical school which advantages these institutions in the databases of research publications and citations. However, normalisation is rarely if ever used by any compilers to refer to modifying an institution's figures in relation to its mission or income.

3.2.5 The data for each indicator are converted into a score

Whether the data for an individual measure are 'normalised' or not, they will be converted into a score. Each original variable will use a different range: NSS results are based on a five-point scale and the UCAS tariff is several hundred points with, theoretically, no maximum. These scales are obviously not compatible if the scores for each variable are ultimately to be aggregated. This is sometimes resolved by giving the institution with the highest tally on a particular indicator a maximum score of, say, 100 and calculating the lower scores according to how close they are to this maximum, thereby preserving the size of the differences between institutions in each indicator. Appendix C provides details of how each indicator in each of the five league tables is derived as far as it has been possible to establish.

3.2.6 The distribution of scores within each indicator might be standardised

Even after converting the scores into a common scale (say 0-100), those indicators with a wider spread of values (e.g. 10-90) will have a greater influence on the ranking positions in the final table than those with a narrower spread (e.g. 40-65). This is before any weighting has been applied to an indicator, and may have the consequence of exaggerating the impact of subsequent weighting or negating its effect. To even out their influence, each variable can be standardised so that they have a common spread (a standard deviation of one) and the same mean score (zero), and thereby contribute equally to the overall ranking (see Appendix B for a detailed explanation).

There is a wide variation in practice among the selected compilers, and some of them have confused the conversion of scores to a common scale (0-100, for example) with 'standardisation'. The *THES* has only just introduced standardisation (which it calls 'z-score aggregation'), which has resulted in dramatic shifts in the position of some institutions, such as the London School of Economics dropping from 17th to 59th in the year of its introduction (*THES-QS*, 2007a & 2007b). Compilers are not always clear about their methods for 'standardising' the individual variables (see *SJTU ARWU* below), despite this potentially having a major impact on final rankings.

3.2.7 The scores from each indicator are weighted

Before the scores for each indicator are aggregated they are weighted according to the differential values the compilers wish to place on particular types of indicator. The weighting can be a factor of the original score (1.0, 1.5, 2.0 etc) (*The Times*), a point value (a proportion of 100, 200, 250 points etc) (*Sunday Times*) or a percentage of the total score (*The Guardian*, *THES-QS* and *SJTU ARWU*).

Table 1 above converts the weightings in each of the five tables to percentages of the total score and shows the range of weightings used in each, which typically span from 5% for the lowest weighting to 20% for the highest within a table. Table 2 above shows the weightings for the individual indicators in each league table, including the largest difference between weightings for the same type of indicator: the surveys of academic peers in the *Sunday Times* table which has a weighting of approximately 4.5%, and in the *THES* where it is allocated 40% of the total score. Indeed, these are the only two league tables that use the results of their own surveys and they apply very different weights to them: from 10% of the total (*Sunday Times*: academics and head teachers) to 50% (*THES*: academics and recruiters). The *SJTU ARWU* applies 60% to bibliometric indicators, and includes Highly Cited Researchers, Articles

Published and Articles Cited, whereas the *THES* only includes the last of these at 20% of the total score. Appendix C analyses the balance of weightings applied to the input, process, output and reputation measures included in each of the five league tables.

The published weightings are those applied after an indicator has been calculated. However, these calculations – including normalisation and standardisation – may exaggerate or negate the subsequent weighting, depending on the statistical processes applied. This may have serious consequences for the outcomes of the rankings (see the statistical analysis in Section 3.4 and Appendix C).

3.2.8 The weighted scores are aggregated

After the scores for the individual indicators have been weighted, they are added together to produce an overall score for each institution in the table.

3.2.9 The overall scores are ranked

As in step 5, the institution with the highest aggregate score is often awarded the maximum of 100 (or, in some cases, 1,000) and the other institutions are given scores below this as a proportion of the top institution's score. This enables the reader to understand more easily the relative scores of each institution. It also appears to reveal the significance of differences in ranking at different parts of the table: generally it is assumed that the differences in overall scores are greater near the top of a league table and narrow considerably further down the ranking. In some tables the differences in scores towards the bottom of the table may also be greater than in the middle. It is argued, then, that (i) at the narrowest point in the distribution of scores the significance of the differences between institutions' positions is very small, and (ii) small changes in performance – and particularly changes in methodology – will have a greater impact on those institutions that are positioned in the middle of the table than at the top and, in some rankings, those at the bottom. Section 3.5 examines these assumptions further.

At this stage, several of the compilers indicated that they subject their ranking to a 'reality check' to identify dramatic shifts or unexpected outcomes, and to investigate the causes. Sometimes such shifts may be explained in the rubric of the table or in the associated commentaries.

Finally, it is worth noting that the publication dates of the league tables vary, as shown in Table 1, although the majority are published in the late summer and autumn (in the case of the national tables, to coincide with the period when those applying to full-time courses through UCAS will be considering their options). Compilers also provide, to a greater or lesser extent, additional data in a tabular form online (see Appendix C for a listing).

3.3 A critique of the five league tables

League tables of higher education institutions can be evaluated according to a number of criteria, including validity, reliability, inclusiveness, comparability, relevance and usefulness. Dill and Soo (2005) even include whether a league table is representative of socially valued outcomes or is designed in a way that encourages improvement in the organisations included. It is debatable, however, whether league tables can be held responsible for meeting such broad criteria, except to the extent that they claim to be doing so. The riposte from compilers will justifiably be, 'But that's not what we're trying to do' or 'People find them helpful, why are you complaining?'. However, it is fair to judge them against their own purposes and claims, and to expect compilers to be open and clear about these: for national league tables to guide prospective students in choosing courses and institutions, for world rankings to identify 'world class' universities, and for both to establish their rankings on some objective basis for comparison.

This section provides a brief analysis of each of the five league tables. In each case, the aims and purposes of the publishers are summarised, together with a critique of the methodology used to compile the ranking, the indicators included and weightings applied. More detail is included in Tables 1 and 2 above and in Appendix C.

3.3.1 *Sunday Times University Guide*

The *Sunday Times University Guide* is intended to be a first reference point for students – primarily the traditional university entry segment (sixth form students) – and their parents. Nevertheless, it is the only league table of the five considered here that does not include subject-specific tables. According to the newspaper, the tables show the diversity of the higher education sector and the different types of student experiences that institutions offer. The rankings are also supposed to reflect the standing that an institution has in the world. Unlike the other two national league tables examined here, the *Sunday Times* does not have an external advisory group, preferring to engage only with individual institutions.

The newspaper believes that the two major influences on whether a student is going to enjoy the university experience and get the most out of it are: the quality of teaching and the qualifications of entrants. Hence, a weighting of 250 points out of 1,100 is assigned to both teaching (NSS and Teaching Quality) and the entry qualifications of students, i.e. 45% of the total weighting. However, the table only counts traditional entry qualifications, with A-levels regarded as the ‘blue-ribbon’ qualification, and vocational and other non-traditional routes into higher education are therefore excluded.

A head teacher assessment has been included since 2005. The heads of 1,100 secondary schools (those included in the *Parent Power* list – which is also compiled by the *Sunday Times* – and regarded as the leading academic schools in the country) are asked to identify the highest quality undergraduate provision. A peer assessment based on heads of university departments’ views has also been included since 2005 and has proved the more controversial of the two reviews. 2,250 heads of departments are contacted each year (about 10% respond) and are asked to rate other institutions’ quality of undergraduate provision in their own area of expertise. These surveys are subject to the problems outlined in Section 3.2.3.

Other recent changes include the incorporation of NSS results and the decision to phase out Teaching Quality scores. This switch has had a significant impact on the ranking of some higher education institutions, including several of the case study institutions (see Section 4). Unlike the other two national tables, spending figures are not included as it is felt that these do not give an accurate indication of the quality of an institution.

The student:staff ratio is regarded by the *Sunday Times* as being the least valuable variable included in the ranking. The newspaper argues that contact time is relevant but that the quality of teaching and learning is much more important. The compiler is also concerned that, in making their statistical returns to HESA, some institutions have difficulty including all part-time teaching staff in their calculations.

The ‘unemployment’ indicator consists of two elements, unemployment and graduate level jobs (each assigned 50 points). In a study for GuildHE (then the Standing Conference of Principals), Yorke and Longden (2005) questioned whether the two ‘unemployment’ scores should be added, since they are measures of different things. Also, they pointed out that the process of obtaining a graduate-level job is not the same in different subject areas.

The compiler accepts that there are probably flaws in all the indicators, but maintains that there is consensus that all the measures used are important. He does not believe there are strong correlations between the separate indicators and maintains that producing individual league tables based on each variable would produce very different rankings. He also argues that all the indicators should contribute to the overall ranking.

The newspaper does not claim that there is any statistical significance between institutions in positions near to each other in the ranking. The compiler would group institutions in bands of 20 and accepts that there are no major differences between institutions placed within five or six places of each other. The most dramatic changes in position are almost always triggered by entry qualifications and drop-out rates which, it is claimed, are the two most volatile variables.

3.3.2 *The Times Good University Guide*

For *The Times*, its *Good University Guide* is a consumer product aimed at existing readers of the newspaper, particularly the parents of higher education applicants. According to the newspaper, its league table aims to show overall 'the best universities' from a fairly traditional viewpoint, i.e. including research, on the grounds that this reflects an institution's ability to attract funding and good staff and, it assumes, produce better teaching as a result.

As an insider, David Jobbins explicitly associated the decision to publish guidance for university applicants in 1992 with the aggressive search for a mainstream readership beyond the 'British Establishment'. According to Jobbins, this was achieved by positioning *The Times* as 'a champion of middle class consumers', '...despite the efforts of successive governments to attract applicants from "non-traditional" backgrounds' (Jobbins, 2002: 383). The tables only feature university institutions, thus excluding some university colleges included in the *Sunday Times*' and *The Guardian*'s tables.

The number of indicators used has been reduced since the first publication of the league tables, when 14 were employed. Initially, it had been assumed that a wider range of data would produce more robust results. The compilers reported that spending was the most contentious indicator among vice-chancellors and principals, because high capital expenditure in one year can have a major impact on a higher education institution's position in the table for the following two years or so. The contribution of spending to the ranking has been reduced to one indicator from two in previous years and spending is now averaged over two years rather than three. However, the compilers acknowledged that, with large sums, this measure would still have a disproportionate impact on ranking positions.

Other modifications of methodology have been introduced after a change in compilers in 2007. For example, despite using the same source data, scores for Research Quality based on the RAE in the 2007 and 2008 tables are different because

the method for calculating them has changed. Before the 2008 table, academic staff not selected for the RAE were assumed to have conducted research at a level two grades below that of the outcome for their department. Including only those researchers submitted to the RAE now produces the same results as the *Sunday Times* ranking for Research Quality.

Unlike the other national league tables, the indicator for entry standards only includes students under 21 years of age. Three indicators are adjusted for subject mix (entry standards, good honours and graduate prospects), and *The Times* accepts there is an argument for adjusting most of the other indicators (except facilities spend, which cannot be disaggregated).

Student satisfaction and research quality are weighted 50% more than the other indicators because, according to *The Times*, these are the two primary functions of a university. The weighting for teaching quality was originally higher (2.5) than for research (1.5), but Teaching Quality scores became increasingly out of date and the compilers felt they had to wait until the NSS was established before giving it a heavier weighting than research.

The Times stated that it has developed subject tables based on what it thought the market wanted and the most meaningful definitions of a subject. There has been a relatively sophisticated development of 64 subject classifications (also employed by the *Good University Guide*). *The Times* tends to follow how each institution wishes to classify its data (for example, for RAE submissions); however this can be different from how they appear in the data published by HESA. The 64 subject tables are very important to *The Times* but only half of these were published in the current (2007) version, due to contractual issues and time constraints. This has caused consternation among those higher education institutions with strong subject departments not included in the 32 subjects.

The subject tables are based on three indicators (research quality, entry standards and graduate prospects) and used to include Teaching Quality.

The Times may include student satisfaction (i.e. NSS results) in the subject tables next year, possibly averaged over more than one year.

3.3.3 *The Guardian University Guide*

According to *The Guardian*, the *University Guide* league tables are developed solely to inform prospective students about their higher education choices. They are not intended to rank institutions based on prestige or research performance. The emphasis is on individual subjects rather than the institution as a whole and this has implications for the methodology adopted. Nevertheless, the overall league table of institutions is included before the subject tables in the book and features prominently on the newspaper's web-site.

For each subject that it teaches, an institution is given a score, based on the seven indicators used in the *University Guide* (see Table 2 above). The score for each institution in each subject is derived from a weighted average of the scores for each measure. In calculating the overall score for an HEI, the subject scores are weighted according to the number of first-degree students enrolled in a subject. The criteria for inclusion – in particular, that an institution must feature in at least five subject tables to be included in the overall institutional league table – lead to the exclusion of a number of smaller, specialist colleges, among others, that may be at the top of their subject tables. 33 UK higher education institutions are excluded from the current version of the institutional ranking.

The number and definition of subject categories have changed from year to year. In 2006, the compilers used student numbers derived from the Joint Academic Coding System (JACS) codes rather than cost centres to calculate spend per student. This was strongly criticised and, in 2007, the calculation of spending was changed. However, in terms of job prospects, subject differences are arguably more important in some disciplines (e.g. electrical engineering for an electrical engineering job) than others (e.g. geography for an accountancy position).

Research performance is deliberately ignored and research-only staff are not included in calculations of student:staff ratios. The decision to completely exclude research has been questioned by HEI representatives. The compilers argue that the key figures for students are those associated with teaching and not the research performance of 'a potentially absent professor'. Moreover, they point out, if research does influence teaching, then this should be obvious in the quality of the teaching and not research performance as such.

Both the variables (and their elements) and their weightings in *The Guardian's* league table have changed considerably recently, and the compilers are now keen to ensure greater stability in coming years. In 2007, for the first time, the league tables included data from the NSS, which has '...produced a lot of changes since last year, and means the tables are not strictly comparable with previous years' (MacLeod, 2007: 2).

It is argued by some that measures of improvement or 'value added' are the most powerful indicators of educational performance, and that introducing the dimension of time produces a very different picture. This suggests the need to employ indices in which measures of processes and outputs are controlled for the quality of the inputs. *The Guardian* is the only publisher of the five examined in this study that attempts to measure 'value added', by assessing the probability of a student achieving a good honours degree (first or 2:1), taking account of their entry qualifications, and rewarding academic departments where they exceed expectations. However, given the weaknesses of the entry and exit measures analysed in Section 3.2.1 and Appendix C, calculations of value added based on them are likely to be unsound. In *The Guardian* example, even if the measures themselves were valid and reliable, entry and exit performance is being measured using different metrics, which can introduce considerable error variance (Morrison et al, 1995; Yorke, 1997). The entry indicator, based on UCAS tariff points, also reappears elsewhere in *The Guardian* table, resulting in 'double-counting'.

The Guardian does not think its variables are highly correlated and is confident that, by using the measures included, the compilers are not double-counting the results of other variables.

3.3.4 Shanghai Jiao Tong University Institute of Higher Education *Academic Ranking of World Universities*

The original purpose of the *Academic Ranking of World Universities (ARWU)* was to assess the gap between the top Chinese universities and 'world-class' universities, particularly in terms of academic or research performance. It has been produced independently without financial support from any sources outside the Institute of Higher Education (IHE). World-class universities are defined as those having a significant number of world-class scholars such as Nobel Laureates and highly cited researchers, and papers published in important scientific journals such as *Nature* and *Science*. The ranking suggests that the gap is rather large, particularly in terms of these three criteria. In fact, they argue that '...most of the top institutions are to be found in developed countries, which is indicative of the importance of economic power in building world-class universities' (Liu and Cheng, 2005: 130).

The choice of indicators is a balance of the compilers' understanding of world-class universities and the availability of internationally comparable data. Only third-party objective data are used and the *ARWU* is the result of independent academic research, with no connection with any commercial activity. The compilers accept there are limitations to the ranking. The Nobel Laureates indicator, for example, includes awards from early in the twentieth century, which seems unlikely to provide much of a clue to current or future performance. They have found it very hard to identify additional academic awards which are recognised by the international academic community as being as important as Nobel prizes and Fields Medals. Nevertheless, the Institute is undertaking studies of others that may be included in the future. They accept that journal publication and citation are much less important

for the arts and humanities than for the sciences and that Thomson ISI does not collect and provide data on highly cited researchers in the arts and humanities. In addition, the IHE has published an academic ranking of world universities by broad subject fields, in which field-specific normalisation is applied.

Marginson and van der Wende (2006) have criticised the bias in the *ARWU* towards English-language, research intensive, sizeable institutions with a strong science focus. In addition, due to its nationally circular citation patterns, institutions in the US are particularly favoured. The IHE is aware that its emphasis on research performance inevitably leads to bias against institutions in non-English-speaking countries, because English is the international language of the academic world. They suggest one possible solution would be to assign a special weighting to publications in non-native languages (Liu and Cheng, 2005).

Bibliometric data count for 60% of the weighting, yet this only includes journal articles as other types of publication may not contain original research. Reports are not considered, on the assumption that most of this work will eventually be published in journal articles. The compilers recognise that academic books are important sources of original research and are more common in some research fields than others. However, books are not considered due to the technical difficulties in obtaining internationally comparable data.

Unlike the other four rankings considered in this report, the *ARWU* does not adjust the individual indicators for size before weighting them. Instead, it divides the total weighted scores of the five indicators by the number of full-time equivalent academic staff and adds this as only 10% of the final scores. In their 2005 paper (Liu and Cheng, 2005), the compilers suggested increasing the weight of this size indicator from 10% to 50%. However, even this increase in weighting would not adjust sufficiently for size, and so the *ARWU* has a built-in bias in favour of large institutions.

The method for 'standardising' the separate indicator scores is unclear. Florian (2007) has

explored whether it is possible to reproduce the rankings of this league table, using data available in the public domain and reach the same results/rankings of institutions. Using various statistical methods, he concludes that this is not possible and that 'the dependence between the score for the SCI indicator [articles cited] and the weighted number of considered articles obeys a power law instead of the proportional dependence that is suggested in the methodology'. The author suggests that a disclaimer note in the SCI indicator section about adjustments made to avoid 'any significant distorting effect' in actual fact is the methodology used for calculating several of the indicators – thereby explaining the discrepancies between his results when reproducing the league tables and the *ARWU*.

3.3.5 *Times Higher Education Supplement – QS World University Rankings*

The *World University Rankings* were produced for the interest of *THES* readers but, according to the publishers, they have taken on a life of their own. Unlike the national tables, they were not intended to guide undergraduates in choosing which universities to apply to. The ranking aims to look at the standing 'in the round' of universities of a particular type, i.e. those that bill themselves as international. Inevitably, according to the *THES*, this is largely about research because that is what these universities value and compare themselves on. But it also includes numbers of international students and staff, and teaching in so far as this can be indicated by the staffing ratios. The *World University Rankings* focus on reputation because that is, according to the publishers, the only way they could achieve an up-to-date picture compared with merely statistics. The published guide book states it has the '...single intention, to provide a measure of the world's top universities on as even a basis as possible' (THES-QS, 2006b: 73).

According to the publisher, the 50% weighting on the opinions of academics and recruiters is justified by the lack of data collected on a consistent basis for all countries. The advantage, it claims, is that universities will find it impossible

to manipulate opinion in the way that they could attempt to massage data. In 2007, the editor of the *World University Rankings*, Martin Ince, acknowledged the following drawbacks:

'The methodology we use is designed mainly to capture excellence in multipurpose universities in the rich world. We are seeking better ways to measure higher education in developing world countries, and for ways of comparing the achievements of specialist and postgraduate institutions with those of full-spectrum universities.' (THES-QS, 2007a: 3)

However, the surveys are dominated by responses from the developed world, and the compilers have had difficulty finding reviewers from the arts and humanities. Dubbed 'peer review', it is clear that this process is quite different from the conventional academic review of papers, project proposals and research teams. The *THES* acknowledges that old, big universities are more recognisable and this will be reflected in an opinion survey – this bias is built in. The publishers also acknowledge that recruiters' responses (largely from human resources departments) are very predictable because they generally want to hire graduates from a narrow selection of universities.

The citation-per-faculty indicator has focused on the institutions producing the most highly-cited papers and tends to discriminate against non-English publication and some subject areas, again including the arts and humanities, due to different publication and citation conventions. The change of research database from Thomson ISI to Scopus, however, has increased the number of institutions represented outside the US, and the English-speaking world generally (THES-QS, 2007b).

The ratios of international students and faculty are meant to indicate a university's international commitment and attractiveness, and the faculty:student ratio '...is intended to determine how much attention a student can hope to get at a specific institution' (THES, 2006a: 6) and '...a simple and robust proxy for a university

commitment to teaching' (Jobbins, 2005: 143). However, the relationship of these with 'world-class' research and teaching is not spelled out. The *THES-QS* recognises the problems of determining who is a member of staff and who is a student, and the bias towards subjects that are people-intensive to teach. The 2007 *World University Rankings* claim to have improved their rigour in obtaining data for full and part-time staff and students and calculating full-time equivalents, where possible (THES-QS 2007a: 7).

The *THES* reported that the citations and peer review results overlap to a fair degree and felt that this is understandable, given that they are measuring similar things. Peer review is more impressionistic and less systematic than the citations, it is argued, so the publishers did not expect the two indicators to converge completely.

3.4 Findings from the statistical analysis of the tables

Statistical analyses of the current versions of the five league tables have been undertaken, to:

- identify the statistical properties of the indicators being used
- confirm the derivation of the overall ranking⁸
- establish the correlation coefficients among the indicators
- carry out a factor analysis of the indicators
- seek the derivation of alternative indicator loadings
- explore the relationships among the different league tables.

Details of the results of these analyses are included in Appendix C and summarised here. For non-statisticians, Appendix B explains the standard statistical concepts, methods and processes used in the compilation and analysis of league tables.

3.4.1 *Sunday Times University Guide*

The *Sunday Times University Guide* provides data on 123 institutions. All of the variables diverge from what one would expect from a normal distribution. They also vary markedly in their standard deviations, which means that they vary in their contributions to the total scores. There are marked differences among the scores of the top six institutions. After that, the differences among successively ranked institutions are much smaller but fairly consistent across the entire range. The correlation coefficients among the variables are all positive. In some cases, they are very high, suggesting that there is a good deal of overlap in what is being measured. All of the variables apart from the dropout rate are also highly correlated with the total score.

Just one principal component explains 59.6% of the variance in the data set, and all of the variables are associated with this first principal component. However, some variables (A/AS-level/Higher points, heads'/peer assessments, research quality and good degrees) are more strongly associated than others. The fact that research quality yields a high loading means that its contribution to the ranking position of an institution is not just mediated by teaching excellence. There is a very close relationship between the total scores in the table and the derived scores on the first principal component. The overall distributions are very similar, but there are also some discrepancies. For instance, the LSE and Imperial College (ranked third and fourth by the *Sunday Times*) swap places.

3.4.2 *The Times Good University Guide*

The Times Good University Guide provides data on 113 institutions, but scores on student satisfaction are missing for 17 of them (2007). All of the variables diverge from what one would expect from a normal distribution. The raw scores also vary markedly in their standard deviations, but this is addressed by standardising

⁸ It was originally intended to use multiple regression analysis to confirm the derivation of the overall scores on the basis of the published values of the relevant indicators. This was achieved for three of the league tables. However, *The Times* and *The Guardian* both warn that it is not possible to replicate the overall scores on the basis of published indicators, and this indeed proved to be the case. The issue of transparency is raised later.

the scores before deriving the total scores. There are marked differences among the scores obtained by the top five institutions. After that, the differences among successively ranked institutions are much smaller but fairly consistent across the entire range. The correlation coefficients among the variables are all positive, except for those involving the student:staff ratio, which are all negative. In some cases, the magnitude of the correlation coefficient is very high, which suggests a good deal of overlap in what is being measured. All of the variables are also highly correlated with the total score.

Just one principal component explains 65.6% of the variance in the data set, and all of the variables are associated with this first principal component. However, some of them (entry standards, research quality, good honours and completion) are more strongly associated than the others. Again, the fact that research quality yields a high loading means that its contribution to the ranking position of an institution is not just mediated by teaching excellence. There is a very close relationship between the total scores in the table and the derived scores on the first principal component. The overall distributions are very similar, but there are also some discrepancies.

3.4.3 *Sunday Times University Guide and The Times Good University Guide*

The correlation coefficient between the total scores obtained by the 113 institutions included in both these league tables is high, as is the correlation coefficient between their ranks. There is a close relationship between the two sets of data, but there are also some discrepancies. The results of factor analysis suggest that the dimension of excellence or quality measured in the *Sunday Times* league table is essentially the same as that measured by *The Times* table, and that research quality and entry qualifications and degree results are of most importance in explaining the overall rankings.

3.4.4 *The Guardian University Guide*

The Guardian University Guide provides data on 120 institutions. *The Guardian* teaching score is a function of seven variables, but it is not a simple total. All of the variables diverge from what one would expect of a normal distribution. They also vary in their standard deviations, which again means that they vary in their contributions to the total scores. There are marked differences among the scores obtained by the top four institutions. After that, the differences among successively ranked institutions are much smaller but fairly consistent across the entire range. Most of the correlation coefficients among the variables are positive. In some cases, they are very high, suggesting that there is a good deal of overlap in what is being measured. All of the variables apart from teaching and feedback are also highly correlated with the total score.

Two principal components explain 69.7% of the variance in this data set and proved to be essentially uncorrelated with each other. The first component is associated with entry qualifications, spend per student, job prospects, student:staff ratio and value added (in descending order of importance). The second component is associated with teaching and feedback derived from the NSS. *The Guardian* league table seems to be measuring two different (and essentially uncorrelated) aspects of teaching quality. There is a very close relationship between *The Guardian* teaching scores and the derived scores of the first principal component. The overall distributions are very similar, but there are also some discrepancies. For instance, the LSE is ranked sixth by *The Guardian* but is ranked third on the first principal component.

There is essentially no relationship between *The Guardian* teaching scores and the derived scores on the second principal component. For the 16 institutions for which the NSS data were not available, *The Guardian* assigns a score of zero on both teaching and feedback. These two variables define the second principal component,

and so it is unsurprising that these are the 16 institutions that obtain extremely low scores on that component. Nevertheless, dropping these institutions from the analysis has very little effect on the pattern of results.

3.4.5 All three national league tables

The correlation coefficient between the total scores obtained by the 119 institutions in both the *Sunday Times* table and *The Guardian* table, and the correlation coefficient between the ranks in these two tables show a close relationship between the two sets of data. However, the discrepancies are more pronounced than those between the *Sunday Times* and *The Times* tables.

The correlation coefficient between the total scores obtained by the 112 institutions in both the *The Times* table and *The Guardian* table, and the correlation coefficient between the ranks in these two tables also show a close relationship between the two sets of data. However, again, the discrepancies are more pronounced than those between the *Sunday Times* and *The Times* tables.

Factor analysis of the 24 variables for the 95 institutions included in all three national league tables suggests that two principal components explain 66.4% of the variance in this data set, and they proved to be relatively uncorrelated with one other. The first principal component has the highest loadings on the measures of entry qualifications, good honours degrees and research quality (although the last of these is not included in *The Guardian* table). The second principal component has the highest loadings on measures from the NSS.

3.4.6 Shanghai Jiao Tong University Institute of Higher Education *Academic Ranking of World Universities*

The *Academic Ranking of World Universities* provides data on 510 institutions, although there are complete data on only 508. The ARWU has awarded a total score to the top 101 institutions. The total score is a weighted total, but the weightings are different for those institutions that specialise in the humanities and social sciences. All of the variables diverge markedly from what one would expect of a normal distribution. They also

vary in terms of their standard deviations, which means that they vary in their contributions to the total scores. There are marked differences among the scores obtained by the top seven institutions. After that, the differences among successively ranked institutions are much smaller and become progressively smaller through the rank ordering. All of the correlation coefficients among the variables are positive. In most cases, they are very high, suggesting that there is a good deal of overlap in what is being measured. All of the variables are also highly correlated with the total score.

One principal component explains 74.3% of the variance in this data set. All of the variables are associated with this first principal component, but some of them (articles in *Nature* and *Science*, highly cited researchers and size of institution) are somewhat more strongly associated than others. There is a very close relationship between the ARWU total scores and the derived scores on the first principal component.

3.4.7 *The Times Higher Education Supplement – QS World University Rankings*

The *THES World University Rankings* provide data on 201 institutions, although complete data are available for only 200. Each indicator is expressed as a percentage of the highest score. The indicators are then weighted and totalled, and the overall score is again expressed as a percentage of the highest score. All of the variables diverge from what one would expect of a normal distribution. They also vary in terms of their standard deviations, which means that they vary in their contributions to the total scores. Only the top institution, Harvard University, is clearly separated from the others. After that, the differences among successively ranked institutions are much smaller but fairly consistent across the entire range. Most of the correlation coefficients among the variables are positive. None are very high, suggesting that there is limited overlap in what is being measured. All of the variables are correlated with the total scores: peer review most highly and international staff score least highly.

Two principal components explain 54.5% of the variance in this data set and proved to be essentially uncorrelated with one another. The first component was associated with international students and international staff. The second component was associated with peer review, employer review and citations per faculty. The *THES World University Rankings* seem to be measuring two different (and essentially uncorrelated) aspects of the quality of an institution. The faculty:student score did not contribute to either.

There is very little relationship between the *THES* overall scores and the derived scores on the first principal component. There is a close though far from perfect relationship between the *THES* overall scores and the derived scores on the second principal component. The overall distributions are similar, but there are also many discrepancies.

3.4.8 The *THES* and *SJTU ARWU*

87 of the 101 institutions given a total score by the *SJTU ARWU* are also listed in the *THES World University Rankings*. The correlation coefficient between the total scores obtained by these 87 institutions in both rankings and the correlation coefficient between their ranks in these two tables are positive. Although there is a broad relationship between the two sets of data, there are also major discrepancies, partly because the *ARWU* does not differentiate greatly between institutions with relatively low scores.

Complete data on all 12 indicators were available for 191 of the 193 institutions listed in both league tables. Two principal components explain 60.7% of the variance in this data set which proved to be relatively uncorrelated with one another. The first principal component subsumes all of the indicators from the *ARWU*, with articles in *Nature* and *Science* and highly cited researchers showing the highest loadings. It also exhibits moderately high loadings on the peer review score and the citations per faculty score from the *THES World University Rankings*. The second principal component is associated solely with three indicators from the *THES World University Rankings*: international students, international staff and employer review.

3.5 Summary of key findings on the five league tables

The following summary draws on the foregoing analyses of how league tables are compiled, their rationale and methodologies and the results they produce:

- The focus on full-time, comprehensive undergraduate provision and institutional, rather than subject-based, rankings excludes a wide range of specialist, postgraduate, small or predominantly part-time institutions from the selected tables. The lack of available data also excludes some higher education provision by further education institutions.
- The measures used by the compilers are largely determined by the data available rather than by clear and coherent concepts of, for example, 'excellence' or 'a world class university'.
- Consequently, some of the measures used are poor proxies for the qualities identified. This brings into question the validity of the overall tables.
- The methods for calculating the scores are not always transparent and some appear to be non-standard or, at least, produce non-standardised results.
- The weightings applied do not always seem to have the desired effect on the overall scores for institutions.
- The resulting rankings largely reflect reputational factors and not necessarily the quality or performance of institutions.
- In the national league tables, entry qualifications, good degrees and RAE grades are more highly correlated with the total scores than are other measures. The total scores of institutions are less highly correlated with indicators based on the National Student Survey results.
- In the world rankings, the picture is more mixed, although articles published and cited seem to have a considerable influence on the ranking positions.

4 The impact of league tables on institutions

This section outlines the main findings of the research elements exploring the impact of rankings on institutions, including the sector-wide online survey and the case studies.

Methodologies, detailed analyses and data are included in Appendices A, D and E.

4.1 Survey of higher education institutions

The online survey was designed to collect sector-wide perceptions of higher education league tables and their impact on institutions' actions.

All institutions in England were invited to participate in the survey, submitting a single, representative view from each institution. A total of 91 institutions completed the survey, a response rate of 68%. The responses were relatively evenly split across the various mission groups and representative bodies, with submissions from 1994 Group institutions accounting for 17%, GuildHE members for 14%, Million+ institutions for 15%, Russell Group for 15%, University Alliance for 10% and non-aligned for 17%. 12% of the sample declined to state which grouping they belonged to.

4.1.1 Perception of league tables

The survey respondents indicated that the most influential league table was *The Times Good University Guide* followed by *The Guardian University Guide*, the *Sunday Times University Guide*, *THES-QS World University Rankings*, the National Student Survey and the SJTU *ARWU*. Other mentioned rankings included the *Financial Times*, *Newsweek* and results from the Research Assessment Exercise (RAE).

Respondents were also asked to state their level of agreement with a range of statements on league tables. Amongst the total sample, the highest level of agreement was expressed with the statement that league tables often reflect 'idiosyncratic views' of what constitutes 'a good university' that are often at considerable variance from institutional and governmental policies.

There was also relatively high agreement that rankings may affect institutional reputation and even damage these beyond repair. Despite some respondents stating that they have increased their communication with the league table compilers, it was widely felt that institutions do not have enough influence on the compilers of rankings and the methodologies used. In this connection, it is also interesting to note that league table compilers were thought to benefit the most from the publication of league tables, followed by students, the Government, employers, higher education institutions (the latter three were relatively closely ranked together) and, finally, academic staff.

When asked whether their institution was ranked broadly where they would expect it to be, respondents were almost equally divided, with 44% answering 'Yes' to this question and 52% saying 'No'. The respondents who stated that their institution was ranked differently to where they would expect it to be, were asked to indicate where they thought they should be ranked. Amongst the total sample, almost half of respondents indicated that they thought they should be ranked at least 10 places higher. Just over a quarter stated that they should be ranked at least 20 places higher and a fifth at least 30 places higher. Only a small proportion stated that they should be ranked at least 5 places higher than their current position or lower.

4.1.2 The importance of achieving good rankings

There was a high level of agreement amongst the total sample that achieving good rankings was important. The areas perceived to be influenced the most by league tables were the general reputation of the institution, followed by student recruitment, employers and the building of networks and alliances, then key performance indicators (KPIs) and finally the recruitment of academics and attracting financial resources (ranked similarly).

4.1.3 League tables as a driver for change

Most survey participants stated that they had responded to league tables in some way. However, in answering this question and the subsequent one on changes made as a result of rankings, institutions stressed that league tables were not driving institutional agendas and that 'actions are not developed as a knee-jerk to tables', as one institution put it.

One of the most frequently mentioned responses to league tables was to undertake analysis of institutional positioning in league tables and the methodologies used in the rankings. Close to half of those institutions who stated that they had responded to league tables, indicated that this analysis was being carried out in their institution; a high number indicated that they had established dedicated working parties to consider league tables and the issues associated with them.

About a third of respondents indicated that league table publications had made their institution consider how data returns were made and prompted them to establish mechanisms to assure the quality of information provided to organisations such as HESA.

The NSS was frequently mentioned as one of the activities which had prompted the institution to take action. A number of respondents stated that initiatives to analyse or address NSS results had been taken. Some respondents indicated that they had enhanced communication with league table compilers to try to influence methodologies, take advice on how to optimise data returns or just further understand how rankings are compiled.

A majority of institutions also stated that they had responded to league tables in the area of KPIs and, in many cases, used the league table variables to review these indicators. Other areas in which institutions had responded included marketing/communication and internal discussions concerning league tables.

Institutions were also asked whether they had made any changes in a range of areas as a result of league tables, e.g. promotion and marketing activities, careers services, media relations, staff

recruitment policies, learning and teaching, research. In line with their answers on what league tables mainly influence and how institutions had responded to league tables, all respondents were found to have made most changes to promotion and marketing activities, and in the way they made decisions about how to submit data, for example to HESA, media relations and key performance indicators or targets. The areas which had been influenced the least were arguably core institutional areas such as staff recruitment policies, course offering and content and research.

Respondents were asked to give examples of changes in strategies, policies and priorities (including resource-allocation decisions) which could be directly attributed to the institution's response to the published rankings. Responses were somewhat different to those submitted to the question about how institutions had responded to the publication of league tables. More than half of respondents either did not answer the question or stated that they had not made any changes as a direct result of rankings; some of them emphasised that changes to strategies or policies were not driven by league tables.

Amongst institutions which stated they had implemented changes as a result of rankings, a less clear pattern was detected compared with answers on how they had responded to league table publication. The way data are returned to agencies such as HESA was again identified as one of the areas receiving the most attention.

The NSS results were again highlighted as an important influence, with a few institutions stating that they had made changes to academic facilities (e.g. library and IT infrastructure) and student services. Changes to student services were also made in some institutions as a result of the NSS. Responses to this question again point to the perceived importance of the NSS and arguably its increasing influence on institutional policy making. Almost a third of institutions made a reference to the NSS, and a number of them stated that they were analysing NSS data and/or addressing issues they raised. Some respondents stated they had made changes as a

direct result of the NSS, having invested in library facilities and implemented strategies to improve learning and teaching and student services in order to improve their NSS results. Other changes identified by a small number of institutions included improved careers services, and initiatives to address the student:staff ratio, the proportion of Firsts/2:1s awarded, research, the quality of teaching and learning and PR/marketing.

Institutions were asked whether the changes implemented in connection with rankings would have happened regardless of league tables, but that the rankings gave impetus to implementing the changes. Most respondents either agreed or strongly agreed that this was the case. Participants were also asked to state whether the rankings created pressure to take actions that they would rather not have taken. Perhaps not surprisingly, given the responses to the previous question and submissions on changes made as a direct result of league table publications, institutions agreed to a lesser extent with this statement, with 63% of respondents either strongly disagreeing or disagreeing with this.

4.1.4 'The ideal ranking'

Respondents were asked whether a range of indicators currently used in national and international league tables were important to include in rankings. Amongst the total sample, the five most important indicators were perceived to be: job prospects, National Student Survey data, completion rate, retention rate and value added (for example, by measuring the distance between entry and final qualifications). The least important variables were perceived to be citations, teaching quality (based on academic staff qualifications), contact hours, prizes (e.g. Nobel prizes) and private giving record.

When analysed in more detail by mission group/representative body, some differences emerge. The focus on research in Russell Group and 1994 Group institutions is clear, with RAE outcomes, research income and PhD degrees awarded being included in the top 10 for these two groupings. Million+ institutions and

GuildHE members focused on teaching and student support and development (e.g. value added, staff:student ratio, proportion of income spent on students, TQA) in their submissions of the most important ranking variables.

Respondents were asked what level of comparative information higher education sector bodies such as HEFCE, HESA, QAA and UCAS should make available about institutions. Institutions were asked to indicate the 'highest' level of involvement they would consider desirable, from:

- 'Minimal descriptive statistics'
- 'Performance indicators (not ranked)'
- 'Performance indicators giving users the facility to rank on a wide range of indicators'
- 'An official published ranking'

Amongst the total sample, the single largest group (45% of the sample) thought that the highest level of information higher education organisations should provide was performance indicators giving users the facility to rank on a wide range of indicators. Only 5% of the total sample indicated support for an official published ranking.

4.2 Institutional case studies

Case studies of six English higher education institutions were undertaken. The participating institutions were selected to be as representative of the different types of institution in the sector and positions in league table rankings as possible; however, they might not necessarily be representative of the 'group' of institutions to which they belong or the higher education sector as a whole. Semi-structured interviews were conducted with key members of staff, e.g. representatives from senior management; governing body; careers services; and departments concerned with communication and marketing, and domestic and international recruitment. In addition, two focus groups at faculty or departmental level were held in each institution where possible. Further information about methodology is provided in Appendix A and more extensive summaries of the case studies are included in Appendix E.

Case study 1: Pre-1992 University

Pre-1992 University is located around the top 20 of *The Times* and *Sunday Times* (but lower in *The Guardian*) and regards itself as a 'top 20' institution. It has aspirations to be recognised as 'world-class', including moving up the global rankings, and regards the upper echelon of the national tables as both more stable and accurate in denoting high reputation and performance. The University has a number of internationally regarded areas of research and disciplinary strength, but has experienced overall low levels of graduate employment for its students and is making strenuous efforts to turn this around. Geographically mobile domestic and especially international student applicants are felt to be strongly influenced by league tables. As academic staff are increasingly recruited from abroad it is felt that league tables could have a growing influence here too. The University is aware that its outreach and widening participation push could have implications for its league table position. However, future demographic decline and the relatively low higher education participation in its locality means that the University must look closely at maintaining applications, not least in science and technology where it excels. It seeks to ensure, with the league tables in mind, however, that 'non-traditional' student entrants nonetheless possess high traditional qualifications.

There is a quickening organisational awareness of league tables and their significant contributing elements as part of growing market pressures. With the introduction of the variable tuition fees regime has come increased organisational interest in league tables. The prospect of charging 'premium' fees with the raising of the Government's cap – and a desire for these to be set at the same level throughout the University – are linked with league tables in senior management's policy discourse. It also reinforces the use of league tables as an internal managerial tool. The executive body that oversees recruitment and related marketing looks at league table influences on student applications whilst the Planning Unit has become well-versed in both understanding their methodologies and responding to their requirements, not least on data returns. The Vice-Chancellor, Pro Vice-Chancellor, Deans and the Council all receive regular reports on rankings. Heads of academic units are held personally to account by the VC for NSS and league table performances. Nonetheless, the University's analysts are at pains to 'routinise' such reports and to have them contained within regular administrative procedures and decision making. Other pre-1992 universities tend to be used as 'peer competitors'.

The Times ranking is regarded as having the greatest currency. In the University's survey of first year undergraduates around 60-70% reported using league tables in their application decision making. Although departmental admissions tutors make the final decisions, the University's strategy to maintain high traditional entry qualifications, especially A-levels, is well-known locally. League tables are seen as especially important for recruiting good postgraduate research students, especially in science

The Council takes league tables seriously, although it is conscious not to be blown off strategy by them. Previously informal discussions about them have become more formal and explicit.

Moreover, some of the key performance indicators used by Council now are modelled to dovetail with elements of the rankings. The Council is concerned to get the direction of travel right and to move towards an eventual top 10 position. Ranking position is regarded as a short cut to reputation, especially globally. High research performance is taken to be the key, although the Council is anxious that their graduates obtain good jobs. There is concern that widening participation will impact negatively on ranking positions, while a relatively poor ranking is seen as tempting excellent researchers to move to higher rated institutions. However, there is also satisfaction that a good NSS score does 'balance' with research.

The University is not hostile to league tables and regards a premier tier as inevitable anyway, and as part of increasing marketisation and competition. It simply wants to be in it. Rankings are viewed as helping to focus institutional energy on tackling weaknesses and contributing generally to less tolerance of poor performance. However, although a whole list of key performance indicators have been devised that are aligned with performance-related rankings, there is reluctance to accept the description 'league table-driven'. Although the University genuinely responds to elements in the league tables, it views it as rational decision making not to pursue a particular ranking explicitly. Senior administrators believe that it is an issue of professionalism to be realistic and not too alarmist about the league tables, and to provide a realistic interpretation to Council and the rest of the University.

Case study 2: Modern Specialist University (MSU)

MSU is a post-1992 specialist university ranked in the middle of *The Times* and *Sunday Times* league tables and two-thirds of the way down *The Guardian* institutional tables, although in the top third of the latter's relevant subject table. Its ranking has suffered as a result of the replacement of Teaching Quality scores by the National Student Survey results, difficulties in submitting data on part-time staff, graduate prospects in its particular field and *The Guardian's* value-added measure. Being a specialist university may also raise issues about direct quantitative comparisons with multidisciplinary higher education institutions in the league tables. MSU does not feature in the world rankings, despite having a good research record relative to other post-1992 universities, being regarded as a flagship domestically within its particular discipline and beginning to develop an international reputation. It receives strong backing from head teachers in the *Sunday Times* opinion survey.

Doing well in league tables is important to MSU as a source of peer esteem, institutional pride and, it is anticipated, for future student recruitment. Initially, the rankings were viewed as a media relations issue rather than one with structural implications. A planning unit was established in 2007, partly to address data submission and the impact on the institution's

league table position. A league tables working group was also set up to investigate how they were compiled, the data submitted to national agencies, the ways in which research scores are calculated and the NSS. It has subsequently been reconstituted as a steering group, now chaired by the deputy head of institution, and monitors all data submitted to external bodies. Staff are now more aware of the timing and requirements of league table compilation, and are willing to provide 'good news' stories for the profiles that are published alongside. A senior manager acknowledged that the University had been 'rather naive' about the data used in league tables and surprised by the poor NSS results, especially in comparison with other institutions and subjects. She reported that poor rankings had been bad for staff morale but that they had highlighted areas to look at and improve. They had also helped to obtain institutional backing for changes that might not have been forthcoming otherwise.

The University would not use league tables per se as key performance indicators, although it might use particular components. It has begun to monitor competitors' positions, as well as the top institutions, to discover what they are doing right, although there is some resistance to looking outside the institution for good practice, especially abroad. However, the University is aware of the dangers of allowing league tables to distract from its strategic academic and widening participation goals in order, for example, to improve graduate prospects or student retention. The Board of Governors regularly discusses information relating to KPIs and student satisfaction and this includes benchmark data positioning the University alongside selected other UK higher education institutions. A member of the Board welcomed the element of market discipline that league tables brought and thought that rankings could prompt senior managers to question their own assumptions. However, she felt that benchmarking was a better way of targeting resources, managing performance and being forward-looking, and that league tables were just one source of evidence. A senior manager felt there was a possibility that rankings could encourage risk aversion in some areas.

Poor performance in the NSS and the students' experience has been a key issue for MSU. This has led to enhancements in student facilities, the establishment of student fora, the introduction of individual tutorials, the extension of library opening hours, efforts to improve course organisation and management and a review of assessment. Communications with students are being regularised and the post of Dean of Students has been established to replace the previous Director of Student Services. The NSS results have also prompted attempts to increase the rate of response and to harmonise internal surveys of students with the NSS. The issue has prompted self-reflection among the University management which has filtered through to the constituent parts of the University and course committees. They have looked at organisational structures such as student administration, admission and induction. However, student recruitment is buoyant, especially internationally, domestic reliance on clearing is minimal and retention rates are good. The more vocational parts of the University work closely with business and have a good reputation with industry. These factors are ultimately more important to MSU than league tables.

Case study 3: Post-1992 Low University (PLU)

PLU has a low ranking in the national league tables for its size and reputation as a prominent post-1992 university. It also has a below average showing in the NSS and in student retention rates. These are felt to impact negatively on general institutional reputation, staff morale and student esteem, and to influence the Board of Governors. While high numbers of student applications offer some protection against the perceived negativities of the league table position, it is recognised that future years could see national volumes decline and leave it vulnerable in some areas. Consequently the University is anxious to rise up the national league tables.

Although PLU accepts the inevitability of league tables it regards much of their methodology as weak or obscure. The most striking example of this related to assessment of a particular subject provision offered in partnership with a neighbouring pre-1992 university. The provision is literally joint: same students; same staff; same facilities. PLU was ranked at 52nd and the partner at 10th.

Governors especially are influenced by league tables as they provide something they can 'get their teeth into'. Moreover, Governors read newspapers and league tables have an immediacy and impact. The Board has set an institutional key performance indicator of improving the position in the league tables. This preoccupation with league tables is perceived as giving rise to pressure to move away from widening participation commitments. Some Governors would prefer, especially in the 'selecting' course areas, to focus more on raising the A-level tariff for entry, and to be generally more selective and research-focused. Overall, Governors wish to ensure that students are given a good experience which would then feed back into the league table position.

Senior managers claim that the league tables are 'irrational', as 'reflecting Oxbridge models', and as having perverse consequences for access and diversity. Whilst such views are recognised as having validity by Governors, some regard them potentially as special pleading, and feel that performance must be managed effectively. Although Governors are aware of inconsistencies and perceived biases in the league tables they believe that the key components of league tables are potentially useful sector comparators. They would prefer to see action in some key areas (student satisfaction and retention especially) to improve league table position, rather than an overemphasis on data submission. Governors wonder why more first-class and upper-second degrees are not awarded (lack of which depresses league table performance), but recognise that issues of academic standards need to be treated with care.

PLU is still quite a devolved organisation at the faculty level. The aim of improving league table position, *inter alia*, is encouraging moves to stronger central and corporate management for some functions. It has established a senior working party to examine the league tables and the University's current positioning. The league tables (and especially NSS) have been examined for genuine institutional messages – and some found. Although initial key actions have focused on data issues, the ongoing work on academic infrastructure is aimed at improving the student experience. The working party has taken advice from league table compilers, although with

mixed results. Frustration is expressed that commercial league table compilers are less amenable to normal public policy representations than other significant (generally governmental sector) agencies and they also often refuse to expose the underlying methodologies. The aim of the working party is to make 'intelligent returns', feeling that in previous data submissions PLU had remained relatively uninformed as to how the submitted data could be used. League tables are seen as encouraging 'gaming'; institutions are over-engineering their data submissions, and feeling that, in an increasingly competitive environment, they cannot afford to be disadvantaged in their information returns.

Although league tables are not yet regarded as having the same order of financial consequence as major government funding initiatives, they are regarded as a considerable nuisance, impacting adversely on the perceptions of overseas governments, students and large employers. Moreover, senior managers and others criticise government ministers for being as similarly partial as the league table compilers in their Oxbridge-based caricature of what constitutes a 'good university'. Value-added measures for student achievement are regarded as the key to legitimising and performing well in the league tables for the post-1992 universities but, apart from *The Guardian*, these are generally missing. Broader notions of 'graduate jobs' with extended longitudinal timelines for destination returns are also seen as necessary to counter biases against arts and humanities areas in particular.

In some respects league tables are regarded as less important for local, first-generation and often more vocational student markets. More geographically-mobile applicants tend to be from a higher social class, and the latter seem more aware of league tables. Some schools prime their students about league tables, while some independent and grammar schools employ staff whose job it is to go through the league tables to guide applicants from their schools. Parents also are increasingly interested in league table information. At postgraduate level there is often high awareness of both the institutional and subject league tables and often such students want to go to a more prestigious university for their postgraduate study than where they studied at undergraduate level. Many large employers are focusing more on league table rankings when supporting the education and training of their employees, although less so in local small businesses.

Currently, PLU is reviewing all student entry requirements as part of a more centralised approach than the current arrangements. In future, UCAS tariff points requirements will be 'negotiated' with academic departments. But it will ensure that this is balanced appropriately with institutional commitment to the widening participation agenda. Broadly the aim is to continue to widen access to enable a larger pool of reasonably well-qualified (formally) applicants to be available, and/or to ensure that less traditional entry does not lead to the wastage, NSS and employment difficulties that would impact adversely on the league tables.

All staff wonder what a low league table position says about them – they work hard, think they are doing well, and then find that they are not 'rated' very highly. Staff morale drops, and sometimes they blame senior management, other departments or those responsible for the data

returns. Academic staff members in various departments have difficulty reconciling their performances with the central data submissions that lead to final league table outcomes. Despite important subject and professional external evaluations that are regarded as increasingly important in academic departments, these are largely ignored by national league tables. At this local level league tables are felt to devalue practitioner teachers and to undermine links with industry and the professions, in comparison with the emphasis on attracting PhD qualified teachers doing traditional academic research.

League table position undoubtedly influences capital expenditure plans, e.g. with respect to learning resources. Governors, however, do not believe that PLU needs to move into deficit to move up the league tables.

Case study 4: Post-1992 Mid-University (PMU)

PMU does reasonably well in the national league tables for this group of universities, around mid-table. It is recognised for its success in attracting students from overseas and for pockets of highly-esteemed research. As a leading polytechnic, it had been used to being part of the top echelon. Doing well in the National Student Survey, however, 'helps to offset any gloom about league tables'.

Governors get 'quite exercised' about PMU's ranking position. Senior managers have presented the Board with proposals that large expenditure, carefully targeted, could drive PMU up the tables, but neither managers nor Governors would contemplate risky spending in this way. Senior managers also point out that the key indicators used are 'Russell Group' indicators and that, if taken too seriously, could have a detrimental effect on widening participation, with a huge potential for 'mission drift'.

Nonetheless, there have been a number of debates about league tables at Governor level. The view of the Board is that they will come more into play, and are especially important in international markets (on which the institution is highly dependent financially). Moreover, Governors feel that league tables are becoming more important domestically with the growing student and parent pressure for information, not least on employability and the student experience. Governors have used them to compare with competitors in the sector, which was deemed useful in understanding more about student choice.

The Board expects to turn its 'unwritten statements' and 'conversations with the Vice-Chancellor' on league tables into more explicit policies in 2008 and they will become part of the key performance indicators. However, Governors are aware of the gap between league tables and government policies, particularly concerning widening participation, Aimhigher and the Skills Agenda. It is thought that Government could publish a wider set of metrics and

benchmarks. Governors feel that academic standards should not be compromised to enable more good degrees to be awarded in order to improve rankings. League tables, and particularly the NSS, are regarded as part of the managerial toolkit to correct deficiencies at departmental level.

The current strategic plan emphasises social inclusion, globalisation and enterprise. Staff are told by senior managers that success in these will take PMU up the rankings. A League Tables Working Party has been formed (with a Pro Vice-Chancellor as Chair) and advice to submit data differently was obtained from league table compilers. The University makes sure that the data returns are 'optimal' and that they are collecting everything that should be (such as local library or IT expenditure, or counting all staff). Data collection and verification is felt to be improving all the time and this is seen as the major consequence of the league tables, not least because it is felt that many other variables are outside its control. Variable fees are also thought to be increasing their importance, especially in the eyes of parents. The marketing department focuses considerable attention on securing 'good profiles' in the commentaries that accompany the tables, and has increased resources for these purposes.

At local level, academic and other staff do what they can to help the University's position but are never quite sure if it has a positive effect. However, all course leaders have to include their 'NSS score' in their annual report and indicate how they are dealing with it. League tables have influenced some departments to seek to raise their A-level entry requirements. They create more of a 'malaise' that lingers for staff rather than dramatic slumps in morale. But it is felt that a well-constructed league table can contain a decent set of performance indicators that, when broken, down can be used selectively and constructively.

The University is particularly concerned about the impact of league tables on international student recruitment and fee income, which constitutes around 12% of the total teaching income. This is a big income stream for the University and such considerations are relevant in all its overseas markets, especially in Asia. The role of third parties (parents and agents especially) in using UK rankings to inform student application routes is quite marked in Asia, making them very influential.

PMU has an eye on variable fees and the extent to which the tuition fee cap may be raised after the 2009 governmental review. A significant rise in the cap, leading to considerably increased fee variability, would require careful pricing policies; league table positioning would be a significant part of the scenario planning.

Case study 5: Research Intensive University (RIU)

RIU is a Russell Group university that is consistently near the top of the national league tables and in the top 30 of the two world rankings considered in this report. It presents itself as a global research-intensive university with a greater interest in world rankings than national league tables. Recent corporate rebranding has helped to clarify the University's image, and brand recognition in international markets and the external impact of rankings is regarded as more important than their internal use. The rankings have helped to associate the institution with other highly-ranked universities and largely reflect where the University – and others – perceive it should be. Successes in the league tables are presented in a relatively low key way in publicity and marketing material. Nevertheless, the interviews revealed a significant impact on institutional thinking about what a highly-ranked university should be doing, such as whether it should be admitting any students through the 'clearing' system.

A league tables working group was formed and met for nine months in 2005/06. This was prompted by some academic departments failing to make the top 20 in subject rankings, the inclusion of the National Student Survey results in national league tables and the University's appearance in tables for some subjects that it did not teach. In addition, there was an awareness that other institutions were taking actions and that to do nothing would risk the University falling behind its peers. The working group focused on improving institutional understanding of the methodologies used in compiling league tables and presenting the University as positively and clearly as possible to the compilers. It was 'a fairly low level group' and the outcomes largely focused on registry functions and, particularly, data submission.

The University council has used national and world rankings for the last two years, along with other key performance indicators. It benchmarks the institution with its main competitors, but would not agree a strategic goal of improving its ranking position as such. Given its consistently high ranking, many interviewees felt that by focusing on its key strengths of research, international student recruitment and high quality staff, the University would automatically sustain – and could even improve – its existing high ranking. This was perceived as 'a healthy approach' to league tables and other 'attempts to quantify a multi-faceted quality like reputation'. When pressed, however, there was an acknowledgement that a sudden drop in ranking position would prompt serious consideration, despite the prevailing scepticism about league table methodologies. Indeed, such an event had been identified as a 'top risk' to be managed, and the council member agreed that relative failure in league tables would have more impact than relative success. Changes in league table position, both positive and negative, were reported to have had an effect on staff morale.

A senior manager of the University and a council member both acknowledged that league tables had been used as levers for change within the institution. For example, heads of departments had been approached after *The Guardian* subject tables were published. One head of

department that had scored lower than expected complained of incomplete data and a false impression of accuracy. However, he did not believe there had been a message from the centre of the University that league tables are particularly important. A dean felt that the trajectory was more important than the absolute position in league tables.

The University has benefited from use of the league tables and results of the Research Assessment Exercise by foreign governments and funding bodies in making decisions about which UK universities to send students with scholarships to. It is also aware of their use by potential foreign higher education institutions looking to collaborate with UK universities and early career researchers in deciding where to apply abroad. The rankings have influenced University decisions on which foreign universities to work with and the recruitment of academic staff.

Students – including international students – increasingly use the subject league tables, although doubt was expressed about their significance in the decision-making process, given the greater importance of subject and location for home applicants. The University is increasingly concerned with the student experience, and interviewees acknowledged that the National Student Survey and the inclusion of its results in some national league tables had helped to raise the importance of this aspect.

Case study 6: University College (UC)

UC is a small, single campus higher education institution near a small city which largely focuses on sport, teacher education, humanities and social sciences. It is a member of GuildHE. Approximately, half of its recruitment is local. It is a teaching-led institution which currently appears in the top 75 in *The Guardian* league table. Although in the lowest quartile of the *Sunday Times* table, it is included among the same newspaper's top seven university colleges and the top 20 institutions with the most satisfied students. It has had positive responses in the National Student Survey and good scores for Teaching Quality in the past, but its completion rate is falling. It has a relatively low level of expenditure per student.

Staff are frustrated when UC is excluded from some tables as a non-university institution, because this makes it more difficult for the institution to become known. UC compares itself with other GuildHE members and institutions in its region, primarily on NSS results. A senior manager felt the *Sunday Times* table was more balanced in that it included different groupings of institutions, such as HE colleges. But she questioned whether there was any evidence that league tables actually influence student choice, except among the top universities and, perhaps, more among parents than applicants. Other staff felt that more weight should be given to value-added measures in the league tables, and that the existing league table formats simply reflected the status quo.

League tables, and particularly those indicators relating to student experience and teaching quality, are important to UC mainly for public relations purposes and for their impact on student recruitment. They are seen as the codification of a perception of an institution which can have the effect of restricting its actions. A more analytical approach to marketing has been adopted, but UC acknowledges that a lot still needs to be done to translate this new market intelligence into strategic change. It is acknowledged that even those subjects that recruit well could improve their service to students. The UC is beginning to utilise market analysis to inform new course development and changes to teaching and learning processes.

UC is beginning to use league tables to highlight areas for improvement. It has included ranking positions in its current strategic plan as both key performance indicators and actual targets (top 10 for student satisfaction and top 65 overall by 2009/10), although without specifying which league table it is referring to. The senior management team subsequently debated whether league position should be an indicator or a target, and whether the real focus ought to be on improving quality as distinct from ranking. UC takes a reactive view: 'we want to do well in any league table that our stakeholders take seriously'; and believes that not doing so would raise questions about competence. There have been no significant organisational changes to date as a result of league tables. Nevertheless, the Council, the Principal and senior staff are beginning to use the indicators to initiate change within the institution, and it is likely that an existing committee will be charged with the responsibility for making sure that UC improves its ranking position. School plans will then have to reflect the targets in the strategic plan.

Recent efforts to improve facilities, learning support in the first year, student retention, feedback on assessment, graduate employability and alumni engagement are also partially prompted by league tables. The Council has asked whether all the institution's spending contributes to league table outcomes; however one of the members was concerned that excessive spending on facilities or improving retention, for example, could place the institution in financial jeopardy.

The Principal accepts that data gathering and the management of information in UC is poor and that fairly radical changes are needed. Staff at UC have not had access to performance data to inform their decision-making. They are sceptical anyway about the league tables and the indicators on which they are based. Generally, academic staff do not understand, for example, how the league table compilers obtain data on retention, and morale does not appear to have been affected by ranking positions. Nevertheless, staff are aware of the increasing emphasis on outcomes, data and accountability nationally, and how this has changed the way the institution is managed and what it feels like to work there.

4.3 Common themes

This section explores the common themes between the findings of the online survey, the case studies and the international study conducted by Hazelkorn (2007; see Section 2.3.3).

4.3.1 Perceptions of league tables

The most influential rankings

The survey respondents indicated that the most influential league tables were the three national league tables considered in this study followed by the two international rankings and the NSS. The influence of *The Times* league table was most often confirmed by case study participants.

However, one institution stated that, due to its profile as an internationally orientated institution, international rankings were the most important for it. Another stated that *The Guardian* was more important for it due to the institution's limited focus on research. There was broad agreement that the domestic league tables were used increasingly internationally, in some markets more than others, and influenced prospective students, scholarship bodies, academics considering moving to the UK and organisations concerned with recognition of foreign degrees.

The two international rankings appeared to be less important than the national league tables; however, they were still frequently cited by survey respondents, the *THES-QS* more so than the *SJTU ARWU*. However, as most UK institutions do not feature in the international rankings, these are likely to be less important to them unless they are on the cusp of entering them. One case study institution indicated a definite ambition to enter the world rankings (the *THES* specifically).

Relationship with the compilers

Respondents to the survey clearly indicated a perception that league table compilers benefited more than any other stakeholder group from the publication of rankings. Participants also stated that they did not feel that they have sufficient influence on the compilers and the methodologies used in the rankings. There were indications in the survey that institutions increasingly communicate with compilers, a trend confirmed

by both the case studies and our interviews with compilers. All but one of the case study participants had been in touch with at least one compiler (in most cases Bernard Kingston from Mayfield University Consultants) with some of them seeking advice on how to improve data submissions or indeed league table positioning.

What should be measured in league tables?

It has often been suggested that league table indicators largely reflect a traditional and dated notion of higher education and are inappropriate to measure the performance of a sector as diverse as that found in the UK today. As indicated in the online survey analysis above, respondents indicated that 'value added' was one of the five most important indicators to be included in league tables. The belief that value added should be recognised (or further recognised) in the rankings was supported by some of the case study institutions. It was also argued that until this happens, the tension between league tables performance and certain initiatives, such as widening participation and local community engagement, will continue.

It was also frequently mentioned that the current way in which employment is measured by HESA in its 'Destinations of Leavers from HE' data ought to be reviewed. It was suggested that the current census point at six months after graduation was too short, as some graduates (usually in arts and humanities) need longer to find a graduate level job. In this connection, it was also suggested that the definition of a 'graduate job' would benefit from being broadened.

The question mark over the appropriateness of some indicators echoed the international survey carried out by Hazelkorn. A majority of the institutions which responded to the survey were unhappy with their position in the rankings, with some expressing concerns that league tables do not consider an institution's local context or special character, and that 'excessive emphasis is placed on research, reputation and awards over wider educational goals, including teaching'. Hazelkorn's survey also asked participants which

variables they thought should be included in the rankings. For most of the listed variables – e.g. teaching quality, employment, student:staff ratio and research – most respondents indicated that they thought these should be included. A few areas, including private giving, performances/exhibitions, investment and prizes were indicated to be less important, with a majority of respondents stating that these should not be included (Hazelkorn, 2007: 8 and 19).

4.3.2 Influence on students

Prospective students

As indicated in Section 2.3, the little research that has been done to measure the impact of rankings on student recruitment seems to suggest that high achieving middle-class students are the ones paying the most attention to league tables (Sarrico et al, 1997; Connor et al 1999; Roberts and Thomson, 2007, Müller-Böling and Federkeil, 2007). Survey respondents indicated that the area most influenced by league tables after the general reputation of the institution, was student recruitment, with some mission groups/representative placing more emphasis on this than others. The case studies further explored the varying degrees to which league tables were thought to influence student recruitment. The findings of the research seem to support the argument that this largely depends on which student group one is considering.

Case study institutions mentioned that mature students tend to be less influenced by league tables. The same is the case for many local, first-generation university students, particularly in vocational subjects. Two institutions had done their own research on the influence of league tables on students' decision making process. One of the studies concluded that 50-60% of the institution's intake was influenced by league tables, with the other stating that rankings were quoted more frequently than any other factor by the students and parents surveyed.

However, some institutions expressed the belief that even the more 'traditional' school-leavers were deciding on subject and location first and then using league tables to 'confirm' their

decision. Some institutions also mentioned postgraduate students as a stakeholder group that pays attention to league tables. Interestingly, it was suggested by one institution that high rankings do not always make an institution more attractive: some students might be 'put off' applying to a high ranking institution. There was widespread agreement that league tables influenced international recruitment, although some markets more than others. For both 'traditional' school-leavers and international students, parents were thought to influence the decision making process and in many cases be aware of and influenced by league tables.

National Student Survey

A major finding from the survey and the case studies concerns the NSS and the increasing importance attached to its outcomes (details of the NSS, its origins and its relationship to quality assurance systems in higher education are provided in Appendix F). Although not a conventional league table, the NSS has become an influential source of information for a range of stakeholders, both in its own right and through its impact on higher education league tables. For league table compilers, NSS results are increasingly replacing the TQA scores, since although perceived to be valuable indicators the latter are increasingly out of date. In addition, the NSS arguably assesses the 'elusive' student experience and quality of undergraduate provision – factors which so far have been very hard to measure. Institutions take the results of the NSS very seriously. Student satisfaction matters enormously, the survey is closely linked with institutional quality assurance procedures, the results are widely publicised and are increasingly attributed a significant weight in the league tables.

In the online survey, institutions made frequent references to the NSS and pointed to initiatives to analyse and address its outcomes. In the case studies, participants also indicated that they are paying a lot of attention to the issue, not necessarily because of its influence on league tables but because it is perceived to have institutional importance. One institution also

expressed a belief that it was 'easier and quicker' to impact the NSS compared to 'traditional' league tables.

Some case study institutions did point to the limitations of the NSS. It was mentioned that the level of satisfaction in some cases could be connected to other factors, such as subject and age. Participants stated that students in some departments tend to be less satisfied (e.g. engineering), and/or that some student groups usually are more satisfied, (e.g. mature students, perhaps due to their expectations being different compared to younger students). The potential impact of such factors on the survey outcomes should not be disregarded and is a timely reminder that the NSS is a survey of student opinion rather than an objective measure of quality.

Interestingly, whilst it was very rare for institutions participating in the research (survey and case studies) to connect any changes directly to league tables, there was less reluctance to admit to action taken as a result of NSS results. Despite some of the shortcomings of the NSS highlighted above, there seems to be a widespread perception that the NSS is based on a less flawed methodology compared with league tables, such as *The Times*, *The Guardian* and *Sunday Times*.

New communications channels

It was clear from the case studies that some of the recent social networking sites on the internet, such as Facebook, MySpace and Bebo, are being used by students (in particular international) especially to post comments about their university experiences on the sites, sometimes derogatively, and this is having to be managed by universities through monitoring, rebuttal as necessary and more positively as a source of promotion.

4.3.3 Impacts on higher education institutions

Impact on senior management/key performance indicators (KPIs)

The survey responses indicated that one of the areas most influenced by league tables were the

KPIs. The case study findings confirmed this, with institutions stating that they have either already started to use league tables performance in their KPIs or are seriously considering including them. In at least one institution, scores for the various league table indicators were considered in the KPIs rather than the actual position of the institution. A specific target or position in the league tables was mentioned by at least one institution. Other institutions mentioned that they worked on the assumption that if they continue to work towards their overall strategic institutional goals, good rankings will follow. A trickle-down effect from rankings and KPIs was detected in some cases, with the Board of Governors considering the Vice-Chancellor's performance with regards to the rankings and the VC then holding the heads of departments or other senior members of staff responsible for performance in their individual sections.

Data submission

One of the most frequently mentioned responses to league tables from the survey and the case studies concerns submission of data to HESA. Most survey respondents mentioned how league tables had prompted them to consider their data returns. In many cases this was through working parties, which considered either data returns specifically or wider issues related to league tables. Most of the case study institutions had at some point set up a working party to consider how to best submit data and all institutions stated that they were paying more attention to data submission than previously. Examples included more carefully collected data on library and IT spending and number of academic staff employed.

An interesting observation from the case studies concerns a frequently expressed belief that most institutions 'push their data submissions to the limit', leaving those who do not do this at a disadvantage. Institutional representatives often mentioned that they used to be 'naïve' about data submissions but that they were increasingly learning to 'play the game' and adopting a more considered approach to these. This perception may have arisen from greater ambiguity regarding data returns in the past, although

HESA has been working to address this. Institutions are realising they need to provide higher quality data returns.

Formation of a working party to consider league table performance was also commonly found among institutions participating in the Hazelkorn international study. (Hazelkorn, 2007: 14)

Impact on academic recruitment and staff morale

Survey participants indicated that the influence of league tables on academic recruitment was lower than on other areas, such as institutional reputation and student recruitment. This finding was largely confirmed in the case study institutions, although it was mentioned that academics moving internationally might be more influenced by rankings. If this is the case, and as higher education staff become more international, league tables might become more influential. It was suggested that most UK academics refer to rankings mainly to confirm their decision to move institution, but that few would move to a lower-ranked institution unless there was a good reason for doing so, e.g. a 'centre of excellence'.

However, there did seem to be considerable agreement amongst case study institutions that rankings affect staff morale, despite widespread scepticism about league tables and their methodologies; only one stated that league tables had no influence in this area. Others highlighted how staff might become demoralised as a consequence of what is perceived to be an unfair reflection of their work and institution in league tables. It was also mentioned that at departmental level, it might be difficult for members of staff to see how they can make a difference to their institution's ranking.

League tables as drivers for change?

One of the most important issues surrounding league tables concerns their impact on institutional strategies and policy making. A high proportion of survey respondents indicated that they had reacted to league tables in various ways. However, relatively few institutions indicated that changes were made as a direct consequence of league tables.

The same message came through in the case studies, where institutions stated that they were aware of league tables but not driven by them. Some participants stated that league tables had worked as a catalyst for investments and changes that the institution was considering and would have made regardless of league tables publications. The changes included initiatives in careers services to consider graduate destinations (in order to improve employment rates), new student facilities, establishment of alumni associations, improved student:staff ratio and initiatives to improve retention.

It was widely felt that large-scale investment directly aimed at improving league table positioning was a very risky activity. One institution mentioned that an institution could 'purchase' an expensive solution to moving up the rankings to find that the 'goalpost has been moved'. Another reiterated the belief that an institution should be working towards its strategic goals and be guided by those rather than a specific position in a league table, particularly given that the compilers could change their methodologies.

Hazelkorn's international study indicated that a large number of institutions had taken either strategic or academic actions or decisions as a result of league table publication. Similar to the findings from this survey, institutions were keen to stress that they did not 'orient' their strategies to improve their position in the rankings, but that they did 'consider the meaningful measures they provide' (Hazelkorn, 2007: 14).

4.3.4 Broader influences

Widening participation and league table performance

One of the issues touched on in the survey and the case studies concerned potential tension between league table performance and Government and institutional policies and initiatives (such as widening participation, Aimhigher and the Skills Agenda). In the survey, there was a high level of agreement that league tables reflect 'idiosyncratic views' of what constitutes 'a good university' that are often at

considerable variance from institutional and governmental policies.

Most case study institutions stated that there is a tension between league tables and widening participation in particular, and that a strategic decision to improve league table positioning (which has been encouraged by the Board of Governors in some institutions) would most likely jeopardise activities to widen access. In particular, any attempts to be more selective (and improve entry scores) would have an impact on access. It was recognised, however, that an institution should only admit students who are likely to benefit from the course and complete it, as degree classifications and drop-out rates are also included in league tables. Other examples of tension between league table performance and institutional or government initiatives concerned local collaborations, which often depress league table performance but are in line with government policy and establishment of new courses, for which there is a demand but also potentially a high drop-out rate.⁹

League tables in an increasingly competitive market

There was widespread agreement amongst case study institutions that, regardless of their scepticism towards league tables and their methodologies, higher education rankings are here to stay. Some also expressed the belief that league tables will become increasingly influential as the higher education market becomes more competitive due to changing demographics and, potentially, variable tuition fees. It was suggested by one institution that league table positioning might in the future determine the fee level that an institution (or perhaps a department) could charge. However, it was also suggested that accreditation and the student experience might become more important at the same time.

In an international context, league tables could also become increasingly influential as higher education becomes increasingly globalised and competition for foreign students increases (due to enhanced opportunities at home and abroad).

⁹ However, league table performance is only one of the many (and sometimes conflicting) pressures that institutions have to reconcile. There are other motivations for institutions than just league tables, not least institutional mission and government support for widening participation.

5 Alternative approaches and principles of good practice

This research highlights the shortcomings of existing ranking systems, and this section explores an example of an alternative model, the possibilities of fresh approaches and proposed guidelines for good practice in compiling rankings in higher education.

5.1 The CHE rankings

Some of the most frequently raised criticisms of current league tables include:

- the practice of aggregating the scores on each variable to produce an overall institutional score (disguising any differences between departments)
- numeric ranking of institutions, which may have the effect of exaggerating differences between institutions that are not statistically significant
- lack of opportunity for students to generate their own rankings based on what they perceive to be important.

Although they are bound to have their limitations, the rankings produced by the German think tank Centre for Higher Education Development (CHE) offer users a highly interactive system, focused entirely on subject area. For the last decade or so, the CHE has published its subject-based, interactive rankings, which now cover institutions in Austria and Switzerland¹⁰ as well as Germany.¹¹ For the 2007-08 edition, selected institutions in the Netherlands have been included for the first time.¹² The CHE rankings initially focused on a limited number of subjects; however, the scope broadened to include 36 subject areas, covering

those disciplines 'chosen' by 80% of all new entrants at German universities.

Since 2002, CHE has made detailed data on research performance available to higher education institutions wishing to benchmark themselves against their peers. However, the main target for the ranking remains prospective university students. The CHE has published the rankings in co-operation with the weekly newspaper *Die Zeit* since 2005.¹³ CHE is responsible for the concept and the data and the newspaper looks after the publishing, marketing and distribution of the ranking. The entire ranking is published once a year under the name *Student's Guide*, but selected examples also appear in *Die Zeit*.

In addition to the paper-based ranking there is a free interactive online version where users can select and weight the indicators that they think are relevant. Comparisons of institutional rankings over time (since 2002) can also be made. The indicators used in the rankings have been selected following a preparation phase where CHE consulted its advisory board as well as school-leavers and students on which variables should be included. The ranking now has nine components, ranging from general information about the university, its location and student population, to details about courses and teaching, employment prospects and research, reviews by academics and student feedback. Each component contains data from different sources (e.g. for research, citations from different databases are included with the number of PhDs awarded and research income generated by the institution). Whenever 'subjective' sources are used, such as feedback from students

¹⁰ According to the Ranking Forum of Swiss Universities, Swiss universities took part in two CHE rankings in conjunction with swissUp, one in 2005 and one in 2006. However, in February 2006, the Rectors' Conference of the Swiss Universities (CRUS) decided against continuing to participate in the rankings. Some Swiss institutions have continued to submit their data but the latest comprehensive data set is from 2005. Swiss Ranking Forum, URL: <http://www.universityrankings.ch/methodology/che>.

¹¹ This section is based on Müller-Böling and Federkeil, 2007.

¹² *Die Zeit*, Neuerungen, URL: <http://www.das-ranking.de/che8/CHE?module=Show&tmpl=e7>. Last accessed on 18 February 2008.

¹³ A version in English has been developed by the German Academic Exchange Service (DAAD) and is available at its web-site at <http://www.daad.de/deutschland/hochschulen/hochschulranking/06543.en.html>.

or the views of academics, 'objective' data, such as student:staff ratios or the average number of years it takes to complete a degree, are also included in the same variable. Instead of ranking the universities numerically, the CHE ranking lists the institutions in three groups: those with the highest scores are in the top group, those with the lowest in the bottom group and the remainder are included in the 'intermediate' group.

Over the last few years, the ranking has expanded its geographical focus, with Austrian and Swiss institutions gradually being incorporated. It is anticipated that other European countries will be added in future, although it is emphasised by the CHE that the differences between the higher education systems have to be considered in order for the ranking to work for all institutions and not leave any at a disadvantage.

Whilst it may not be appropriate in England or the UK to adopt the CHE model exactly as it is, let alone to seek the inclusion of UK institutions in its rankings, aspects of the model are highlighted here as an example of an alternative approach, whose suitability could be considered within the UK context.

5.2 Bringing league tables up-to-date

The broader questions about league tables include whether there are socially valued outcomes of higher education that may concern stakeholders that do not currently feature in the rankings. For example, one compiler mentioned to us the environmental impact and contribution of institutions to reducing their 'carbon footprint' and improving the understanding of global warming and the actions that can be taken to moderate it. Such aspects may reflect current students' concerns better than the assessment of research and head teachers' opinions. He also felt that, to address the different missions of institutions, league tables could include how institutions interact with their locality, what they do for their community and whether this is of mutual benefit. Other aspects might be contributions to sport, wellbeing and accessibility. Recent developments in higher education ought

to be reflected, such as online and work-based learning. Of course, this would depend on whether robust, valid and reliable indicators could be developed to measure these. Without such 'facelifts', he felt that many league tables are becoming rather 'old school' and static, as much in look and feel as in what they cover.

5.3 The Berlin Principles

Another international development also deserves some attention in connection with new approaches to league tables in higher education: the Berlin Principles, which outline good practice in the compiling of higher education rankings. Prompted by the increased publication and use of higher education league tables, two organisations, the Institute for Higher Education Policy in Washington and the UNESCO European Centre for Higher Education (UNESCO-CEPES) in Bucharest founded the International Ranking Expert Group (IREG) in 2004. At its second meeting in 2006, the group developed a set of principles of quality and good practice for higher education rankings – referred to as the Berlin Principles on Ranking of Higher Education Institutions (IREG, 2006). The principles, mainly aimed at compilers of league tables, outline guidelines on four main areas:

- purposes and goals
- methodologies (design and weighting of indicators)
- collection and processing of data
- presentation of ranking results.

Whilst wide-ranging, the Berlin Principles cover many of the issues that compilers are often criticised for not taking into account.

Purposes and goals: On purposes and goals, the Berlin Principles argue that rankings should not be the only way that higher education institutions are assessed, but rather they should complement the work of the Government and other bodies overseeing higher education. Compilers should bear their target group and the purpose of the league table in mind and develop their ranking system accordingly – there is no 'one size fits all'.

The principles also state that compilers should recognise diversity, taking the different missions and goals of higher education institutions into account and consult frequently with experts and the institutions themselves. Compilers should state which sources of data are used in the rankings and be clear about the message that each source communicates. It is regarded as good practice to combine the different perspectives provided by several sources in order to get a more complete view of each institution. Finally, international rankings in particular should take into account the specific features of different higher education systems, and allow for the fact that notions of quality are not necessarily shared by different nations or systems.

Methodologies (design and weighting of indicators): The Berlin Principles stress the importance of compilers being transparent about their methodologies and choosing the indicators according to their relevance and validity (i.e. rather than counting what is measured, measure what counts). They also suggest that compilers measure outcomes rather than inputs wherever possible, make the weights assigned to different indicators (if used) prominent and limit any changes to these.

Collection and processing of data: The Berlin Principles recommend the use of audited and verifiable data whenever possible, including data that are collected according to recognised procedures for scientific data collection (to avoid bias), the application of quality assurance measures to the ranking processes themselves and organisational measures which enhance the credibility of rankings, such as advisory boards.

Presentation of ranking results: The Berlin Principles focus on the presentation of the ranking results and recommend that compilers provide users with a clear understanding of all factors used to develop a league table and allow users to choose how the ranking is displayed (and ideally how the variables should be weighted). Finally, the Berlin Principles state that rankings should be compiled in a way that eliminates or reduces errors in the original data and be organised or published in a format that allows compilers to make corrections if necessary and for users of the rankings to be made aware of these.

5.4 What can compilers learn from these approaches?

As the debate about league tables and the research reported here indicate, there are many areas where the league tables examined meet these good practice guidelines and some where they arguably fall short. Examples of the latter include:

- not making clear why particular measures have been included and what they are meant to signify
- not being transparent about the calculations applied to particular indicators
- not making clear distinctions between inputs, processes and outcomes and failing to measure the latter wherever possible
- including data that have not been subjected to external quality assurance procedures, e.g. opinion surveys
- not taking the different missions and aims of institutions into account.

A further shortfall in some of the league tables examined in this report is that they provide only limited opportunity for users to select the variables and weight them according to their preferences and interests.

6 Discussion and conclusions

This research has confirmed a number of previously published findings, assumptions and perceptions about league tables, their methodologies and their effect on higher education institutions. It has also produced new findings, particularly about the impact of league tables on institutional actions and strategic decision-making. This section discusses our research findings and conclusions as well as outlining the main implications for key groups, such as the compilers, the major users of league tables and higher education institutions and policy makers.

6.1 What has been confirmed?

What has been confirmed that we already knew, or thought we knew? Here we focus on the overall outcomes of rankings, the use of league tables and their impact on higher education institutions.

6.1.1 League tables largely reflect reputation

The national higher education league tables generally end up confirming institutional reputation rather than providing overall robust, valid or reliable summations of performance or quality (although one or two indicators on their own may have greater validity). Surveyed institutions indicated that league tables influence the overall reputation of the institution above all (more than student and academic recruitment, for example), and most institutions in the case studies referred to league tables as 'indicators of prestige' rather than 'quality of undergraduate provision' or performance.

There is a common assumption that commercial league tables in the UK avoid disrupting the dominant expectations too much for fear of not being perceived as credible. These dominant expectations – the bottom-line for any 'serious' league table in the UK – are that:

- Oxbridge will come top overall of national rankings (and near the top of global rankings produced in the UK)
- the majority of pre-1992 universities will be placed above the majority of the post-1992 universities – with a few notable exceptions to 'prove' the meritocratic nature of the hierarchy (no post-1992 institution appears in either of the world rankings included in this study)
- a few ex-polytechnics will languish near the bottom of most overall UK league tables
- several post-2004 universities and HE colleges will 'punch above their weight' and achieve respectable positions around half-way.

Compilers have stated that specific ranking outcomes that contradict this overall pattern are carefully scrutinised and subject to a 'reality check'; this suggests publishers have pre-conceived notions of which are the 'best' universities before publishing their rankings. Where these 'anomalies' are not 'ironed out' before publication, they are expected to be resolved by some methodological explanation accompanying the tables.

The limitations of current methodologies, resulting in some institutions being excluded from the rankings, have been raised in the literature (Yorke and Longden, 2005) and through our research. Not being included in the tables has an impact on the visibility of these institutions nationally and internationally. The fact that some excluded institutions are highly regarded nationally, and even internationally, in their field further adds to the frustration of not being ranked. Lack of data on higher education provision in further education institutions also limits the compilers' capacity to offer information and guidance that meets the needs of all prospective students.

The world rankings largely focus on research (as confirmed by both publishers and compilers interviewed for this study) but also end up confirming reputation, at least at the top end. There are real difficulties in finding valid and reliable measures that are comparable throughout the world's higher education systems, hence the

resort to imperfect proxies such as opinion surveys and highly selective academic awards. However, the limitations of the ways in which compilers of world rankings use existing commercial bibliometric databases have also been highlighted by this study. Despite the appearance of precision and authenticity, the quantification of traits such as 'world class' and 'having a global perspective' remains elusive.

6.1.2 Users of rankings

A greater proportion of prospective students appear to be using them

Considering that the main audience for national league tables (according to the compilers at least) is prospective students and their advisers, surprisingly little research has been undertaken on how they use league tables and how these influence their decision making. Prior to this research, the limited evidence there was of prospective students reading and regarding them as an important source of information about higher education institutions or their graduates, suggests that only a minority actually used them in this way. But our research suggests that this minority is substantial and increasing. For younger HE applicants of higher academic achievement and social class, league tables may be influential, but only part of the complex decision making process and often used to confirm a decision already made. For applicants who are mature, locally recruited, more vocationally orientated and/or from less advantaged backgrounds, further investigation is needed to establish how influential league tables are and whether they discourage some from applying to highly ranked institutions.

Two case study institutions in this research surveyed the use of league tables amongst prospective and newly enrolled students. Both concluded that a majority had or were considering rankings when deciding on which university to apply to. However, relatively limited conclusions can be drawn from these institutions, whose findings may largely reflect the profile of their student populations, rather than being representative of all prospective or current higher education students.

Anecdotal evidence suggesting that international applicants in general are particularly influenced by league tables was also confirmed through the case studies. The influence of rankings on some foreign governments, scholarship bodies and other agencies and parents was also repeatedly highlighted in the survey and case studies.

Major graduate employers use them more than small and medium enterprises

Earlier research had concluded that graduate employers appear to be looking to the published league tables to confirm the notional and impressionistic rankings they already employ. From the case studies, it was inferred that in the UK only the major graduate employers, such as the members of the AGR (Association of Graduate Recruiters), are heavily influenced by league tables (and prefer to recruit from Russell Group institutions anyway) whereas local companies and small and medium enterprises refer less to league tables when considering applications from graduates.

Impact on higher education institutions

The impact on institutions of individual measures employed by the compilers, such as RAE grades, TQA scores and increasingly the NSS results, is well documented in the research literature. These measures in themselves have an impact on institutions (especially the National Student Survey), although league tables can reinforce their significance. The current reform of the RAE may well increase the importance of bibliometric indicators of research output, such as those already used in the two world rankings in this study. Both the survey and case studies suggest that institutions' actions focus on individual indicators and maximising performance in these rather than league tables as such, although the latter are utilised as key performance indicators in corporate planning and governance processes, and even as strategic targets in a few institutions. Our research broadly supports Hazelkorn's (2007) findings (see Section 2.4.3), but provides greater detail specifically on English institutions.

6.2 New research findings

What new light does this research shed on the way league tables are compiled, the results they produce and their overall impact on higher education institutions? Here we draw out the key findings from this study. More detail can be found in the appendices.

6.2.1 Methodologies

Sensitivity analysis

The outcome of the sensitivity analysis¹⁴ indicates that, for at least two of the national league tables, the relationships among the indicators are reflected in a single principal component on which the different variables load to varying degrees. This finding raises two issues:

- i) At the moment, the weightings are indicative of what compilers think are important when measuring the quality of (undergraduate) provision in an institution; however, they do not necessarily ensure that institutions which perform well on indicators with high weightings have this reflected in their rankings. This is because other aspects of the calculations performed, such as standardising and 'normalising' scores, can have a bigger influence on the overall rankings than the nominal weighting given to each variable.
- ii) An institution's chances of succeeding in enhancing its position in the rankings through strategic investment in certain areas are seriously limited.¹⁵

Normalisation

When explaining their methodologies compilers refer to 'normalisation'. The analysis undertaken for this research indicates that, in some cases, it refers to an adjustment to take into account variations in the size of institutions (for instance, citation counts may be divided by the number of staff). In others, it is taken to mean adjustment for the subject mix within a higher education institution (for example whether it has a clinical medical school) that may otherwise skew its results. However, it is rarely if ever used by any compilers to refer to modifying an institution's figures in relation to its mission or income.

Changes to methodologies

In interviews with the publishers of league tables there were no indications that compilers change their methodologies from year to year to create headlines and news stories. However, at least two of the five league tables have recently undergone significant changes in a short time. Whilst there might be good reasons for the changes, they create a sense of constant flux, which gives rise to the suspicion that league table methodology is devised to show the results that the compilers want to achieve and generally undermines the credibility of these league tables. There was a sense among the case study institutions that rankings were somewhat unpredictable. It was mentioned that an institution could work towards improving its performance in certain areas, currently important in rankings, only to find that 'the goal-posts had moved'. For users of

¹⁴ Sensitivity can be considered from two points of view (Chatterjee and Hadi, 1988). First, what would be the consequences of modest fluctuations in an institution's scores on the various indicators? The scatterplots of the total scores obtained by the various institutions against their rankings in each of the league tables show that a slight increase or decrease in scores could lead to a shift of several places in their ranking, particularly for institutions in the middle or lower end of the distribution. Second, what would be the consequences of modest changes in the loadings attached to the different indicators? The principal component analyses that we have described on each of the league tables have produced alternative loadings that are based on the empirical relationships among the indicators themselves. The scatterplots of the total scores obtained by the various institutions against their predicted scores on the principal components (see Appendix C) show that modest but well motivated changes in the loadings attached to the different indicators can also give rise to a shift of several places in the ranking of particular institutions.

¹⁵ Future research using statistical modelling techniques would help to clarify the patterns that result from changing the indicators and their weightings.

the rankings, changing methodologies makes it difficult to assess whether a particular institution has shifted ranking position due to a different methodology being applied or because it has 'performed' differently.

Interactivity and supplementary information

Several newly introduced features have started to shift the focus of the main league tables. Detailed subject rankings in *The Guardian* and *The Times* (as well as Mayfield University Consultants' *The Good University Guide*) acknowledge that pockets of excellence exist in institutions that may not feature in the upper echelons of most overall league tables.¹⁶ Applicants, students and graduate employers may find such detailed rankings more informative, although they are still subject to the same methodological criticisms as the generic tables. Web-based interactive tables are also beginning to allow users to select their own indicators and weightings, to exclude one or more of the 'mainstream' indicators and even to sort by a single criterion. The *Sunday Times University Guide* web-site allows users to search the generic table by geographical location and by individual measures (including some that are not included in its league tables such as 'Fewest from a deprived area' and NSS results by subject). Mini league tables are also included on specific features, e.g. 'Lowest dropout rate'. On *The Times* web-site, users can select a small number of institutions from different parts of the table to more easily compare their results (as well as sorting the overall table by individual indicators, though not a sub-set of indicators). These features give the impression of enabling the user to construct their own concept of quality or performance – but, of course, within the strict confines of the compiler's approach and subject to the methodological drawbacks already outlined.

One sector – one ranking

There is an enduring reluctance among UK compilers to distinguish between institutions with different missions and compare like with like, thus avoiding the 'one size fits all' methodology that predominates in the national league tables. In some countries, such as the US and Canada, compilers classify institutions based on their mission and the nature of their provision and rank them separately. Some researchers have applied sophisticated statistical techniques to analysing UK league table data that allow for the recognition of diverse missions and a more realistic approach to benchmarking institutions' performance, where institutions are compared only with those that have a similar mission or profile of activity (Sarrico et al, 1997; Guarino et al, 2005; Turner, 2005). These analyses suggest 'that there is a rather smaller gulf between the best institutions and the worst' (Turner, 2005: 370) than conventional national league tables would like to suggest. In our interviews, however, the compilers seemed to think that dividing institutions into categories in this way was an unlikely development in the UK – on the contrary they thought the sector would be uncomfortable with such divisions between institutions. The reasons include the traditional English idea of the university, in which all institutions more or less conform to the same model: that model being heavily influenced by the Universities of Oxford and Cambridge and a pervasive ideology of meritocracy and concern for fair play, a level playing field and equal treatment (and a reluctance to re-create the binary divide between pre-1992 universities and the rest). The argument that all higher education institutions essentially compete in the same market and should therefore be ranked in the same league table was also made. In the case studies, some institutions

¹⁶ However, one of the compilers maintained the contrary view: that students might opt to study in a department that was not particularly of high quality if the institution of which it was a part was highly ranked. There do seem to be genuine differences between compilers: some think their users are mainly concerned with the quality of institutions and others believe they are mainly concerned with the quality of the department.

expressed the view that, as all universities are externally quality assured through standard procedures, there is a good argument for treating them all as part of the same group.

6.2.2 Impact on higher education institutions

Despite the scepticism about league tables commonly expressed in the higher education sector, this research and the international survey carried out by Hazelkorn (2007) show that many institutions are beginning to respond to them in quite vigorous ways. Although respondents emphasised that league tables were not driving institutional initiatives and changes, responses to the survey and case studies indicated that a significant proportion had responded to league tables in some way. The most common responses were in the areas of promotion and marketing, media relations, decisions about how best to submit data, inclusion of league table performance or performance on league table variables in institutional key performance indicators and communication with compilers. Examples of actions directly linked to league tables most often included data returns and the enhancement of academic facilities. However, core institutional activities – the areas that most of the compilers consider themselves to be highlighting in their rankings, such as course offering and content, research and staff recruitment policies – appear not to have been influenced by league tables to the same extent.

The most influential rankings were found to be the three national league tables considered in this study, followed by the two world rankings and the NSS. There are signs that the international rankings are becoming increasingly important, although only for the small proportion of higher education institutions in England that are included in these.

League table performance and government policies and initiatives

The research uncovered a relatively strong sense among some participating institutions of a tension between league table performance and

institutions' and government policies and initiatives, in particular widening participation and community engagement. For example, based on current models of league table compilation, it was felt that a strategic decision to improve league table position – say, through being more selective in student recruitment – would be likely to jeopardise activities to widen access. However, in this context it should be noted that there are other motivations for institutions than just league tables, not least institutional mission and government support for widening participation. Institutions are having to manage such tensions with great care.

Impact of the National Student Survey

The National Student Survey is becoming increasingly influential in higher education institutions. The NSS can be an integral part of the quality assurance process and attracts a high level of publicity. Combined with the increased focus on the 'student experience' and students as consumers, and the importance attached to the survey by the compilers of the league tables, these factors mean that institutions cannot afford to ignore the NSS results. Most institutions appear to perceive that the NSS applies a grading which is intrinsically different from and more credible than any league table published by a newspaper, as evidenced by institutional references to the NSS as a legitimate driver for change.

Higher education institutions clearly take the NSS results very seriously. In many cases they invest considerable resources in enhancing facilities, provision and support in order to improve the student experience in response to feedback via the NSS. In such cases, the NSS has arguably fulfilled one of its main aims: to pinpoint institutional shortcomings and help ensure a better experience for future students. However, other responses to NSS results might be less successful, e.g. efforts to increase the return rate and thereby improve the results, on the presumption that those who are unhappy are generally more likely to complain, while those who tend to be satisfied are less likely to respond.

Desire for an official ranking?

The extent to which higher education institutions would welcome an official ranking from the sector bodies was explored in the survey (and to some extent in the case studies). Responses were negative: only 5% of survey respondents indicated support for one.

New arenas for managing institutional reputation

It was clear from the case studies that some of the recently established social networking websites, such as Facebook, MySpace and Bebo, are being used by students (and especially international students) to post comments about their university experiences, sometimes derogatively, and this is having to be managed as a further source of 'information' by universities through monitoring, rebuttal as necessary and more positively as a means of promotion.

6.3 Implications and challenges for key parties

What implications do these findings have, and what are the challenges for the key parties concerned? Here we focus on the compilers of league tables, prospective students and their advisers, other users of rankings and higher education institutions and policy makers.

6.3.1 League table compilers

Rankings would benefit from being more accessible and interactive and, for example, enabling users to select the indicators that are important to them and set the weighting for these. This could make league tables more useful for a wider range of applicants to higher education and reflect the diversity of the prospective students of today and tomorrow.

Discipline-specific tables may be more appropriate than institutional rankings. If the purpose of a league table is to indicate to students and their advisers where they would receive the best education in the subject they would like to study, departmental scores would

be more appropriate than the overall reputation of institutions. Numerically ranking institutions in some cases can be misleading, as the difference in scores between institutions in the same part of a table may not be statistically significant.¹⁷ One way of overcoming this methodological problem would be to list institutions in groups, not necessarily as broadly as in the CHE rankings but in bands of approximately 20 for example, clearly indicating that these institutions all belong to the same segment.

Indicators selected ought to be close proxies for the qualities they are meant to measure. Also, the degree to which the data used to form each variable are correlated could benefit from further interrogation and consideration by compilers. Being informed about the results of such an exercise is likely to be beneficial for all concerned.

Greater stability in the methodologies used for league table compilation might improve the perception of league tables among users, including institutions. When methodologies change, compilers should explain that shifts in institutional positions can be a result of these alterations rather than changes in the 'performance' of an institution.

Despite increased efforts from the compilers to communicate with institutions, both individually and through meetings and conferences, there is a strong sense amongst institutions that they do not have sufficient influence on the compilation of league tables. If compilers maintain their current practice of ranking institutions in a single league table, further consideration and acknowledgement of wider factors such as value added and intake of under-represented groups should be considered so that the diversity of institutional mission and focus is taken into account.

The exclusion of some institutions (mainly specialist institutions and those focusing on part-time or postgraduate provision) in the national league tables was raised on several occasions during the research. Enhancement of the

¹⁷ As outlined in Section 3, the statistical analyses of the five league tables indicate that, with the exception of the *THES* rankings, there are marked differences among the scores obtained by the top six institutions but thereafter the differences among successively ranked institutions are much smaller but fairly consistent across the entire range.

methodologies to accommodate all higher education institutions and further education institutions providing HE in the UK would achieve the aim of providing a comprehensive guide and promoting student choice. Consideration should also be given to adjusting most of the indicators for subject mix so as to minimise bias in favour of institutions which include particular disciplinary fields, such as science or medicine, due to enhanced resources or high entry requirements.

In both the survey and the case studies, institutions strongly indicate that value added is a key factor in evaluating institutional performance. Given that most of the national league tables currently fail to take this into account in any meaningful way, it would be worth investigating ways of recognising this element.

6.3.2 Prospective students and their advisers

Although they share some variables, the national league tables investigated measure different characteristics, largely determined by the publishers' and compilers' notions of what constitutes quality. To make the most of league tables, prospective students and their advisers could be better informed about which table(s) or indicators best reflect the higher education experience they are looking for.

Prospective students should be made aware that changes in an institution's position from year to year are more likely to be the result of modifications in methodology or normal perturbations in the data, than a variation in that institution's 'quality' or performance. In addition, they may find the supplementary data that some compilers make available more helpful than the overall tables, such as information about living costs, highest starting salaries and highest state school intake. Higher education institutions themselves have a responsibility for ensuring that accurate and relevant information about their provision remains uppermost in their public relations output aimed at prospective students.

Subject-based rather than institutional rankings are likely to give a better indication of

'performance' (at least in the way that this is assessed in a league table) compared with overall institutional rankings. Some compilers have started to develop interactive tables, which enable students to customise the tables for their own purposes. However, for the foreseeable future, published rankings of institutions are likely to continue to be more influential due to their wider visibility and their role in reputational enhancement, and thereby retain their greater influence among those prospective students, employers and other interested parties that are seeking confirmation of reputation.

6.3.3 Other users of league tables

In addition to prospective students and higher education institutions, a range of users of league tables have been identified. These include foreign governments and other agencies supporting students to study abroad or establishing partnerships with UK institutions, (UK and overseas) academics looking to move institution, and employers. Given the limitations of league tables (particular overall institutional rankings), these users might wish to consider additional sources of information when researching specific institutions. Such sources could include institutional performance on individual indicators, departmental 'performance', student satisfaction surveys, such as the NSS, Unistats and feedback from alumni.

6.3.4 Higher education institutions and policy-makers

There seems to be an inherent tension between league tables and some of the current institutional and government initiatives and policies. Widening access, lifelong learning and community engagement are all being encouraged by the Government; however, the way most league tables are compiled does not reward 'community-orientated' activities or value added sufficiently to make up for low scores in, for example, entry grades or retention rates.

League tables have become a permanent fixture. With the possibility of an increase in fees for full-time undergraduate courses in the English higher education sector, their influence is likely to

increase. With few exceptions, institutions in this research indicated, both through the survey and the case studies, that achieving good rankings is important for them, primarily because it affects the general reputation of the institution and secondly because it is perceived to have an impact on student recruitment. Regardless of the scepticism that surrounds them, the rankings are rarely disregarded by institutions. On the surface, institutions are reviewing their data submissions, establishing working parties to consider league table performance and talking with compilers to learn more about their methodologies. However, deeper questions – such as how league tables influence institutional goals and ways of monitoring their achievement and the degree to which an institution is willing or able to pursue broader policies (such as widening participation and community engagement) – are perhaps less articulated but more important issues for consideration.

The reported use of league table positioning or variables in institutional key performance indicators makes it increasingly important that those assessing their performance, particularly governors, are aware of the methodologies of the various rankings and their limitations.

6.4 Where do we go from here?

This study shows that league table rankings are being used for a broader range of purposes than originally intended, and are being bestowed with more meaning than the data alone may bear. It has shown that several of the measures used in compiling league tables are questionable in their validity and reliability, and that some of the methodologies do not adhere to standard statistical processes or are opaque to the user. It has also provided evidence of increasing numbers of prospective students using league tables in deciding where to study, higher education institutions setting desired ranking positions as strategic institutional targets, and foreign governments and scholarship bodies making decisions about where to fund students on the basis of league tables. Our research findings and the wider research literature suggest, however, that this process is unlikely to end there.

Regardless of the soundness or otherwise of their methodologies, league tables are becoming part of the media-amplified markets for higher education institutions and their outputs and services. With increasing competition between institutions – not least on the world stage in the markets for student and academic recruitment, and research and consultancy funding – it is likely that rankings will continue to grow in importance. No longer merely consumer guides, they play a key role in maintaining and modifying institutional reputation. This impacts in broader ways on decisions made by both prospective students and a range of other ‘users’, not least higher education institutions themselves. Rather than being merely of intermittent concern, the case studies suggest that league tables are becoming incorporated into the routine management of the institutional environment and internal constituencies by managers (including academic managers) and administrators.

There is also evidence that the world rankings are growing in influence due to internationalisation, as some higher education institutions move beyond just recruiting international students to the UK and operate outside their national boundaries. The impending introduction of bibliometric indicators to assess research quality in the UK, through reform of the Research Assessment Exercise, is likely to strengthen this element of the ranking methodologies, and may emerge in the national league tables before long, even before the results of the 2008 RAE become dated.

In England, the influence of league tables would probably increase if the cap on domestic tuition fees for full-time undergraduate courses were to be raised or lifted altogether at any point after 2010. There was a view from the case study institutions that ranking position might affect an institution’s ability to charge the highest fees allowed. Among institutions with a comparatively low league table position, there might be reluctance to charge a high fee level. Further, they might also feel pressurised to vary their fees between individual courses in order to maximise these where they can. Conversely, this pressure might not be felt by highly ranked universities

that can maintain parity between different courses but at a high level because of the greater value to students – and ultimately their graduates – of institutional reputation. For these universities, overall institutional reputation might enable them to charge the highest fees for all courses despite individual departmental deficiencies or low demand for some subjects nationally. In such a context, it is likely that league tables would contribute to greater competitive fee variability among higher education institutions in England – an aim of existing government policy but never realised in practice because of the current level of the cap on fees.

Given these developments, there is an onus on policy makers and higher education institutions to promote greater public understanding of league tables and alternative sources of information about higher education institutions. There is also an argument for codifying good practice in the compilation of rankings for both compilers and users of league tables. Given the increasing influence of world rankings originating from outside the UK, this may be best achieved at an international level, as part of a wider inter-governmental initiative.

The research reported here is limited to an investigation of the five league tables listed in the Introduction and the impact in general of rankings on higher education institutions in England. During the study, questions were raised that were beyond the scope of the project. In particular, they coalesced around the users of league tables, the purposes to which they put them and the impacts on their decision making processes. The areas that would benefit from further research include:

- prospective (including international) students' use of league tables
- the use of new sources of information on higher education institutions, e.g. social networking web-sites and Unistats
- the influence of league tables on foreign governments, scholarship bodies, employers and individual academics.

7 References

- Archer, L., Hutchings, M. and Ross, A. (2003) *Higher Education and Social Class – Issues of Exclusion and Inclusion*, London: RoutledgeFalmer.
- Birnbaum, R. (2007) 'No world-class university left behind', *International Higher Education*, 47, Spring, http://www.bc.edu/bc_org/avp/soe/cihe/newsletter/Number47/p7_Birnbaum.htm
- Bowden, R. (2000) 'Fantasy higher education: university and college league tables', *Quality in Higher Education*, 6(1), pp 41-60.
- Brown, R. (2006) 'League tables – do we have to live with them?', *Perspectives*, 10(2), pp 33-38.
- Chatterjee, S. and Hadi, A.S. (1988) *Sensitivity Analysis in Linear Regression*, New York: Wiley.
- Clarke, M. (2002) 'Some Guidelines for Academic Quality Rankings', *Higher Education in Europe*, 27(4), pp 443-459.
- Connor, H., Burton, R., Pearson, R., Pollard, E. and Regan, J. (1999) *Making the Right Choice: How Students Choose Universities and Colleges*, Appendix 1: The Survey of Applicants, London: CVCP, Executive Summary at <http://bookshop.universitiesuk.ac.uk/downloads/MakingTheRightChoice-Summary.pdf>
- Dill, D. (2006) 'Convergence and Diversity: The Role and Influence of University Rankings', Keynote Address presented at the Consortium of Higher Education Researchers (CHER) 19th Annual Research Conference 9 September, University of Kassel, Germany.
- Dill, D. and Soo, M. (2005) 'Academic quality, league tables, and public policy: A cross-national analysis of university ranking systems', *Higher Education*, 49(4), pp 495-533.
- van Dyke, N. (2005) 'Twenty Years of University Report Cards', *Higher Education in Europe*, 30(2), pp 103-125, ISSN: 0379-7724.
- Eccles, C. (2002) 'The Use of University Rankings in the United Kingdom'. *Higher Education in Europe*, 27(4), pp 423-432, ISSN: 0379-7724.
- Ehrenberg, R. (2003) *Method or madness? Inside the 'USNWR' college rankings*. Paper presented at the Wisconsin Center for the Advancement of Postsecondary Education Forum on The Use and Abuse of College Rankings (Madison, WI, November 20-21, 2003). September 07, 2003, pp 23.
- Florian, R. V. (2007) 'Irreproducibility of the results of the Shanghai academic ranking of world universities', *Scientometrics*, 72(1), pp 25-32, DOI: 10.1007/s11192-007-1712-1.
- Foskett, N., Roberts, D. and Maringe, F. (2006) *Changing fee régimes and their impact on student attitudes to higher education*, Report of a Higher Education Academy Funded Research Project 2005-2006, http://www.heacademy.ac.uk/assets/York/documents/ourwork/research/changing_fees_regimes_full_report.pdf
- Guarino, C., Ridgeway G., Chun, M. and Buddin, R. (2005) 'Latent variable analysis: a new approach to university ranking'. *Higher Education in Europe*, 30(2), pp 147-165, ISSN: 0379-7724.
- Hazelkorn, E. (2007) 'The Impact of League Tables and Ranking Systems on Higher Education Decision-Making', *Higher Education Management and Policy*, 19(2), pp 81-105.
- HEFCE (2006) *Needs of employers and related organisations for information about quality and standards of higher education*, Report by University of Sussex School of Education, Bristol: Higher Education Funding Council for England, http://www.hefce.ac.uk/pubs/rereports/2006/rd20_06/
- IREG (2006) *Berlin Principles on Ranking of Higher Education Institutions*, International Ranking Expert Group (IREG) UNESCO European Centre for Higher Education (UNESCO-CEPES) and the Institute for Higher Education Policy, Washington DC, 18 to 20 May, 2006. http://www.che.de/downloads/Berlin_Principles_IREG_534.pdf

- Jobbins, D. (2002) ‘“The Times/The Times Higher Education Supplement” league tables in Britain: an insider’s view’. *Higher Education in Europe*, 27(4), pp 383-388, ISSN: 0379-7724.
- Jobbins, D. (2005) ‘Moving to a global stage: a media view’, *Higher Education in Europe*, 30(2), pp 137-145, ISSN: 0379-7724.
- Kingston, B. (2002) ‘Tables help cut through the swamp of data and hype’. *Times Higher Education Supplement*, 10 May.
- Lampl, P. (2004) ‘Imbalance of talent’, *Times Higher Education Supplement*, 20 August, p16.
- Liu, N. and Cheng, Y. (2005) ‘The academic ranking of world universities’. *Higher Education in Europe*, 30(2), pp 127-136, ISSN: 0379-7724.
- MacLeod, D. (ed) (2007) *The Guardian University Guide 2008*, London: Guardian Books.
- Marginson, S. and van der Wende, M. (2006) *To rank or to be ranked: the impact of global rankings in higher education*, Centre for Higher Education Policy Studies, University of Twente, The Netherlands,
http://www.studiekeuzeenranking.leidenuniv.nl/content_docs/paper_marginson_van_der_wende.pdf
- Merisotis, J. (2002), ‘Summary Report of the Invitational Roundtable on Statistical Indicators for the Quality Assessment of Higher/Tertiary Education Institutions: Ranking and League Table Methodologies’, *Higher Education in Europe*, 27(4), pp 475-480.
- Morley, L. and Aynsley, S. (2007) ‘Employers, quality and standards in higher education: shared values and vocabularies or elitism and inequalities?’ *Higher Education Quarterly*, 61(3), pp 229-249.
- Morrison, H.G., Magennis, S.P. and Carey, L.J. (1995). ‘Performance indicators and league tables: A call for standards’, *Higher Education Quarterly*, 49(2), pp 128–145.
- Müller-Böling, D. and Federkeil, G. (2007) ‘The CHE-Ranking of German, Swiss and Austrian Universities’, in Sadlak, J. and Liu, N.C. (eds) *The World-Class University and Ranking: Aiming Beyond Status*, Bucharest: UNESCO-CEPES.
- Naidoo, R. and Jamieson, I. (2005) ‘Knowledge in the Market Place’ in Ninnes, P. and Hellsten, M. (eds) *Internationalizing Higher Education – Critical Explorations of Pedagogy and Policy*, CERC Studies in Comparative Education 16, The University of Hong Kong: Springer
- Pascarella, E.T. and Terenzini, P.T. (2005) *How College Affects Students: A Third Decade of Research*, San Francisco: Jossey-Bass.
- Provan, D. and Abercromby, K. (2000) *University league tables and rankings: a critical analysis*, Paper No. 30, Commonwealth Higher Education Management Services,
<http://www.acu.ac.uk/chems/onlinepublications/976798333.pdf>
- Reay, D., David, M.E. and Ball, S. (2005) *Degrees of Choice: Social class, race and gender in higher education*, Stoke on Trent: Trentham Books.
- Roberts, D. with Thompson, L. (2007) *University League Tables and the Impact on Student Recruitment*, Reputation Management for Universities, Working Paper Series No. 2, The Knowledge Partnership,
<http://www.theknowledgepartnership.com/docsandpdf/leaguetablefinalreport.pdf>
- Sarrico, C.S., Hogan S.M., Dyson R.G. and Athanassopoulos, A.D. (1997) ‘Data envelopment analysis and university selection’, *The Journal of the Operational Research Society*, 49(12), pp 1163-1177.
- THES-QS (2006a) *World University Rankings*, Times Higher Education Supplement, 6 October,
<http://www.thes.co.uk/worldrankings/>

THES-QS (2006b) *Guide to the World's Top Universities*, London: Quacquarelli Symonds Ltd/Blackwell.

THES-QS (2007a) *World University Rankings 2007*, Times Higher Education Supplement, 8 November, <http://www.thes.co.uk/worldrankings/>

THES-QS (2007b) THES – QS World University Rankings 2007, *Basic explanation of key enhancements in methodology for 2007*, Ben Sowter, QS, 22 October 2007, http://www.topmba.com/fileadmin/pdfs/meth_enhancements_2007.pdf

Turner, D. (2005) 'Benchmarking in universities: league tables revisited'. *Oxford Review of Education*, 31(3), pp 353-371, ISSN: 0305-4985.

UNITE (2001-2007) *The Student Experience Reports*, Bristol: UNITE.

Usher, A. and Savino, M. (2006) *A World of Difference: A Global Survey of University League Tables*, Toronto, ON: Educational Policy Institute, <http://www.educationalpolicy.org/pdf/World-of-Difference-200602162.pdf>

Wedlin, L. (2006) *Ranking business schools: forming fields, identities and boundaries in international management education*, Cheltenham: Edward Elgar.

Williams, R. (2007) *Ranking Australian Universities: Controlling for Scope*, University of Melbourne, Melbourne Institute of Applied Economic and Social Research, <http://www.melbourneinstitute.com/publications/reports/uniscope/>

Yorke, M. (1997). 'A good league table guide?', *Quality Assurance in Education*, 5(2), pp 61-72.

Yorke, M. and Longden, B. (2005) *Significant Figures – Performance Indicators and 'League Tables'*, London, Standing Conference of Principals (now GuildHE), <http://www.scop.ac.uk/UploadFolder/SCOPsigfigfinalprint2.pdf>



CHERI

Centre for Higher Education
Research and Information



Higher Education Funding Council for England
Northavon House
Coldharbour Lane
BRISTOL
BS16 1QD

tel 0117 931 7317
fax 0117 931 7203
www.hefce.ac.uk