VALid Economic and Research Indicators Exercise

Valerie McCutcheon, 2005.

Introduction

This report sets out the findings of a study trip to three Higher Education Institutions (HEI's) in London during the week beginning 8th August 2005. The trip was funded via sponsorship from the Robbie Ewen Fellowship[1]. The main aims were to bring a greater degree of standardization, robustness, and audit control to data supplied in response to surveys.

Background

The Higher Education sector submits data on knowledge transfer related activity to a number of surveys. The definitions and recording systems used by the bodies running the surveys, and the HEI's vary widely with the result that misleading conclusions may be drawn during comparison.

This work follows on from work done with other colleagues in the Russell Group Knowledge Transfer Group Metrics Working Group in developing metrics for Knowledge Transfer.

Aims

To explore ways in which HEI's can ensure that data submitted to mandatory surveys is comparable. In particular:

- To research the most appropriate method for identifying income by company size.
- To clarify what type of activity should routinely be reported as consultancy.
- To clarify what type of activity should routinely be reported as facilities.
- To discuss best practice in recording disclosures.
- To find out what classifications others apply to data e.g. Licence types of software/non-software.

Benefits

For the Sector

- Optimise survey returns so that any funding based upon the returns is based on sound auditable data.
- Improve the reliability of benchmarking between institutions by proposing methods whereby HEI's can be confident that each has reported activity in a consistent manner.
- Offer suggestions on how to reduce the level of manual intervention required for statistical returns by building frequently required classifications into the systems.

Of particular benefit for The University of Glasgow:

- Increase knowledge and understanding of reporting that will be of use when completing surveys.
- Inform the Research System Development Project of specifics of requirements so that effective mechanisms can be put in place.
- Potential to improve profile of GU by initiating and documenting discussion on the topic of metrics.

Methodology

- Reviewing various survey submissions made by the University of Glasgow primarily the Higher Education Business and Community Interaction survey.[2], and the Knowledge Transfer Survey (SHEFC) to identify specific data gathering obstacles and conflicting definitions.
- Exploring how some peer institutions have interpreted the guidelines and how they store and extract the relevant information. This involved both the institutions visited and other institutions that have input to the discussion.
- Producing and sharing a report to:
    - Identify, and prompt action on, value adding changes to University of Glasgow processes
    - Inform discussion with the Funding Councils and our colleagues at other HEI's to continually improve the efficiency and effectiveness of how we measure knowledge transfer activity.

Key Findings

1) There is strong support for having robust performance indicators that Funding Councils can use to monitor activity at HEI's and the impact of this activity on the economy. To do this efficiently and effectively it is recommended that Funding Councils consult with HEI's as to what is measurable and relevant.

Some explanation of what Funding Councils hope to achieve by asking each question would help those completing the surveys to provide the right information. E.g.

- The HEBCI survey currently asks for RDA (Regional Development Agency) sub-totals. This identifies local activity but does not identify 'UK' versus 'Rest of the World' split.
- It is not clear why HEBCI asks specifically for a software and non-software split for licences.

2) To reduce the burden and enhance validity of any benchmarking some of the statistics could be taken from the HESA (Higher Education Statistical Agency) Finance Statistics Return e.g. question 1a of the HEBCI survey asks for income from Collaborative Research involving both public funding (EU Government) and funding from business. HEI's could be instructed to take the EU total from the column for EU Government on HESA table 4 as the basis and then identify which elements of this also involved business funding. This could be done specifically or by estimate depending on the level of information held at HEI's but at least there would be a common starting point.

3) Definitions need to be clearer, however, if HESA definitions were used (where available) it was felt that the data comparison would have greater validity as HEI's are used to classifying data under the HESA

codes.

Key areas to be clarified include:

- 'Research' activity for HEBCI question 1a. This can be widely interpreted as any research activity with both public and business interest involved.

- 'Contract research' - for HEBCI question 1b. If this means research activity with no public body collaborating, but with funds from a business, this should be made clear in the guidelines to distinguish it from the activity reported in question 1a.

- Definitions of 'consultancy' and 'facilities and equipment related services' are widely interpreted.

4) Some HEI's felt that they had underestimated in many of the answers for several reasons including not having systems to record the data centrally, difficulty imposing central recording, and incorrect coding of activity.

5) Some had separate Research and Finance systems with different coding that was not aligned.

Clarity of definitions would help address some of these issues as HEI's could build new systems, or amend existing systems accordingly.

More detailed findings are grouped together under the relevant HEBCI survey question for ease of reference. Not all HEBCI questions are covered by this paper e.g. Continued Professional Development (CPD) is the topic of discussion between CPD specialists.

Question 1a– Collaborative research involving both public funding and funding from business.

The HEBCI survey asks for figures for collaborative research involving both public and business funding.

It should be clear if the intention is to collect the total value of income from both public and business sources where there is funding from both, or just the value of the public funding element for collaborations where there is also a business interest.

The definition must be clear to elicit robust data. E.g. there may be collaborative activity that involves only 'in-kind' input from business and by counting this activity the public funding income reported may be higher than excluding this activity.

Some institutions manually looked through lists of activity to identify which fitted the description of 'collaborative research' given by HEBCI (e.g. substantially speculative with uncertain outcomes, interest to both parties, joint investment of physical and intellectual resources). This was done to varying degrees of thoroughness from using general knowledge of the type of activity to more detailed analysis. There were different interpretations of what fitted the description given. Others considered this too time consuming.

Some institutions have systems that record all funders of work so it is possible to extract the relevant data. Some manually reviewed lists looking for 'collaborative' activity. Some looked at all activity that generated income and some included all collaboration regardless of whether the business collaboration brought in income to the project.

For 'Collaborative research involving both public funding (from other UK Government departments) and funding from business some found link schemes, Knowledge Transfer Partnerships, Department of Trade and Industry programmes etc easy to pull out. However other relevant activity might not be as readily identifiable.

A potential improvement could be to use the HESA return as base figures for this question so that the starting point was:

HEBCI Question	**HESA Return Base Data**
OST Research Councils	Table 4, column 1 ;OST Research Councils
Other UK Government departments	Table 4, Column 3, UK cent gov't/loc auth, health hospitals
EU Government	Table 4, Column 5, EU Gov't.

From each starting figure only those values where there was also some business collaboration (with collaboration more clearly defined as mentioned above) could be reported. If HEI's had systems to identify what proportion of this income involved some matched funding from business then they could provide a reliable answer, and where they did not have a system an estimate could be used but at least they would be starting from the same point.

It would be more difficult to reliably provide figures for 'Collaborative research involving both public funding (from other public sources), and funding from business from the HESA return. It might be possible to use HESA table 4 rows 6 (EU Other), 7 (Other Overseas) and 8 (Other Sources) as the base data but categories cover many things. It would be useful to define what should be counted in this category. E.g. define whether each of the following are relevant or not:

Overseas HEI's
Overseas Government e.g. World Health Organisation, Institute of Health (USA)
Learned Societies e.g. Royal Geographical Society, Society for Endrocrinology.
Professional Bodies e.g. British Medical Association
Trade Associations e.g. Police Federation, The Fisheries Society of the British Isles

Questions 1b Contract Research (excludes 1a and Research Councils).

Methodologies adopted to identify value of contract research with SME's included listing all companies with which the organisation had 'research contracts' and manually coding each as an SME or not e.g. from general knowledge or web searches. There were different interpretations of what to include as 'contract research'.

It may be appropriate to use HESA table 4, Column 4 Industry as a basis for a more detailed breakdown or estimate.

When exploring how best to record which 'income' was related to SME's it was generally felt that coding each company was not appropriate. A company status could change over time and any company could have several agreements and income transactions thus necessitating regular checking and updating of records. Most agreed that to record income from SME's correctly one would have to mark each income

transaction as from an SME or not as status of a company could change between transactions. This was not deemed practical.

Although still an approximation it might be acceptable to code each agreement as to whether it is with an SME or not. One of the HEI's I spoke to already used this method. Companies may grow during the life of an agreement but that would not be common. There were various views about how to capture the data as some felt the company would need to indicate it was an SME (or not), and others felt it was not a burden to their staff to ask another question, or that the question might not be necessary as staff involved in negotiation of an agreement would generally know the size of the company and therefore be able to record it. Most people did not have a means of recording the SME element in their systems but many intended to address this.

To identify the number of research contracts with SME's in their RDA some HEI's record postcode and use this to identify RDA 'manually' by reviewing the list. This is easier for some areas than others. Where there are a number of different counties people do not always readily know which postcodes fall into their RDA. Some, who did not already code sufficient information in their system to allow this to be extracted, amended systems after the HEBCI survey and intend to ensure sufficient information is captured for new agreements to facilitate such exercises. One HEI I spoke to set up default RDA' s for funders so the RDA does not have to be coded for every new agreement.

At the University of Glasgow each funder has a country code. As there is a country code of GBS (Great Britain Scotland) it is possible to identify activity in our RDA.

Questions 2a Consultancy contracts

Some institutions have specific account coding on their financial records that can be used to extract 'consultancy' activity. What was coded as consultancy varied hugely.

Some HEI's asked departments to provide lists. Most noted the issue of consultancy activity being done without central administration being notified therefore it is possible that some HEI's have grossly underestimated this section.

It was not clear whether Doctor and Dentist private consultancy should be recorded (and again it may be difficult to find out about all of the relevant activity).

Consultancy is one area where there is no distinct grouping on the HESA return that could readily be mapped.

The definition of consultancy provided by HEBCI is:

'The provision of expert advice and work which, while it may involve a degree of analysis, measurement or testing, is crucially dependent on a high degree of intellectual input from the HEI to the client (commercial or non-commercial). Such work is usually paid for at a market rate, and may deliver stronger IP rights to the business client than would apply in a collaborative research relationship.'

The 'Russell Group Knowledge Transfer Group Metrics Working Group' suggests the following principle is added to this definition along with some clear examples of what does, and what does not fit the definition of consultancy.

'It is unlike research in that it does not have as its prime purpose the generation of new knowledge.'

Note: KTG states that personal consultancy should not be included but that the total value of consultancy processed via the University ledger inclusive of any sum subsequently paid on to individuals can be included. The KTG survey uses the HEBCI definition for consultancy.

Most of the institutions I have spoken to seem to have interpreted that personal consultancy which does not appear on the Finance ledger should not be included in the HEBCI return. It may be worth making this explicit in the guidance notes (if that is what is meant).

More detailed specification and example of what types of activity should and should not be included would be helpful. For example the boundary between certain types of training, events, services, and consultancy is grey.

Questions 2b Facilities and equipment related services

Some institutions record testing and equipment services with specific account codes in their finance systems. Some noted that departments managed their own services making it difficult to identify and return all relevant activity.

Some institutions had no specific codes to identify this activity and therefore estimated.

To identify the value of facilities and equipment related services specifically with SME's many HEI's simply looked through the list of activity they had identified as facilities and equipment related services and made a reasonable guess as to which were SME's. The degree of accuracy varied from looking each company up e.g. on the web, to casting an eye over the list and estimating total % of SME's.

The HEBCI definition is:

'…. Use by an external party (not another HEI) of the physical academic resources of the HEI. This could range from electron microscopes to performance space. Provision of such resources may include a degree of, for example, technician support. However, where a high level of expert knowledge is provided, usually by academic staff, that part of the activity may be defined and reported as consultancy instead.

Simple trading activities, such as the commercial hire of conference facilities that could be obtained from a non-HE provider, should not be included.'

The 'Russell Group Knowledge Transfer Group Metrics Working Group' suggested that specific examples would help to clarify this question.

They also suggest it might be a sub-set of the data returned in HESA table 5b, question 4.

What can and cannot be included should be pinned down.

Questions 4a – Disclosure and patents filed by or on behalf of the HEI

Some institutions have databases where the staff responsible for the administration of technology transfer

record all disclosures. The level of sophistication varies from a basic spreadsheet to integral part of Research activity database. Counting disclosures should not be problematic if the staff in the 'technology transfer' offices log each disclosure made to them.

Questions 4b – Licence Numbers

To classify licences as software/non-software several of the HEI's manually looked through the list of licences and hand coded them as software/non-software. Some noted that they did not have many licences so it was not onerous. Some already had, and some intended to add, a field to code this into their database system.

It would be useful to remove the 'other classification' or suggest what it might be used for as many assumed 'other' to be the same as 'non-software'.

Questions 4c – IP Income and total costs associated with IP Income

Several HEI's may have under reported this figure. E.g. The University of Glasgow figure does not include income from sale of copyright items (e.g. licence to use drawings and designs) as it not recorded centrally in the same way that income from technology licences is recorded.

As this figure is validated against HESA I suggest that the question could simply ask that you report the figure on the HESA report table 5b row 4f.

Some institutions have systems to record patent, legal, and other costs associated with licences. Sophistication varies from keeping notes in case files, to systems designed to record all costs. Some institutions had to estimate

Questions 5 – Social, Community and Cultural Engagement: Designated Public Events

Some institutions were pondering if the cost-benefit of recording this data would justify establishing a system that they would need to impose on all areas of the HEI. Most thought that it was impractical.

If we did manage to collect reasonably comprehensive data it might need to be linked to the systems that hold research agreements e.g. a grant might be counted in one of the other questions but also fund an event. We might need to identify which agreements had events as part of the activity and then add other events (that were not strictly research related, so were not already recorded on the research system for any other reason) to the central record.

Some collected data from various departments and manually summed it. Some had regular events lists that they could use as a basis adding lists from libraries, museum visitors etc.

HEI's would appreciate clearer definitions of what is required if this data is to be requested in future.

Conclusion and Recommendations

The main aims of this study have been achieved and a number of suggestions as to how to improve the relevance and comparability of data submitted to surveys have been suggested. Further consultation is recommended to address the issues highlighted in the 'key findings' section of this report. The biggest

issue is the clarity of the definitions.

Follow on Actions

Specific changes to the University of Glasgow Research System will be made in response to the findings of this report.

In addition this report will be made publicly available. It will also be distributed to colleagues in other HEI's who have indicated an interest in this topic, to SHEFC, to HEFCE, and within the University of Glasgow. It is hoped that further discussion and action will take place leading to improved efficiency and effectiveness of capturing and reporting performance indicators relating to economic impact and research.

It may be that the specific suggestions in this paper are not taken forward, however, if further discussion is provoked resulting in improvements to the efficiency of data collection and quality of data returned it will have served it's purpose.

Acknowledgements

With thanks to all who made time to show me their systems and answer my questions.

References:

Higher Education – business and community interaction survey 2003-04.
Knowledge Transfer Return 2004 Notes of Guidance, SHEFC.
HESA Finance Record Coding Manual
Progress Report, Metrics Working Group of The Russell Group Knowledge Transfer Group, January 2005.

Useful Links:

http://www.hefce.ac.uk/reachout/HEBI/
http://www.gla.ac.uk/R-E/pub/statistics/statistics_definitions.html
(See the link at bottom of this web page for HEBCI statistics template)
http://www.shefc.ac.uk/library/06854fc203db2fbd000000fee29900bf
http://www.hesa.ac.uk/manuals/04031/FSRmanual2004-05.htm
http://www.gla.ac.uk/services/courtoffice/fellowship/index.html

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[1] The purpose of the 'Robbie Ewen Fellowship Scheme is to allow short visits, at home or abroad, to other Higher Education Institutions in order that recipients might benefit from seeing differences of approach and structure.

[2] Administered by HEFCE (the Higher Education Funding Council for England) in conjunction with SHEFC (the Scottish Higher Education Funding Council), HEFCW (the Higher Education Funding Council for Wales), and the Department for Employment and Learning (Northern Ireland).