

ABSTRACT AND EXTENDED ABSTRACT SUBMISSION

Conference:

ENID Science and Technology Indicators Conference 2011 on 'Actors and networks in European Science'

Rome, 7th–9th September 2011

Format:

For oral presentation

Name and affiliation of the author(s):

Dr Duncan A Thomas, Manchester Institute of Innovation Research, Manchester Business School, UK

Conference theme and session:

Theme: The proposed paper deals with conceptual work to frame indicator development on funding agencies and programmes at the European level.

Session: 'Funding systems in a European perspective' [Organiser: Maria Nedeva]

Title:

Developing indicators and a typology of frontier-potential researchers to understand better the impact of an ERC funding scheme

Abstract:

This paper describes the conceptual development and initial empirical testing of a novel survey-based methodology to register and attribute changes to numerous characteristics of academic researchers that are impacts of European Research Council (ERC) grant funding, in particular its Starting Independent Research Grant Scheme (StG). The work attempts to identify an indicator-based impact methodology specifically tailored to researchers likely to align with ERC funding impact objectives, i.e. those who undertake research that has the potential to become regarded as path-breaking or 'frontier'. The methodology probes key research system components, such as researchers' standing in their knowledge communities, researcher careers, research content, and research conditions within research organisations. The resulting typology should permit a better understanding of the impact of the ERC and its funding schemes on the European research system – and of funding frontier-potential research more generally. The paper also touches upon researcher perceptions of the roles played by the ERC vis-à-vis other national and European research funders.

Extended abstract:

This paper describes the conceptual development and initial empirical testing of a novel survey-based methodology to register and attribute changes to numerous characteristics of academic researchers that are impacts of European Research Council (ERC) grant funding, in particular its Starting Independent Research Grant Scheme (StG). The work attempts to identify an indicator-based impact methodology specifically tailored to researchers likely to align with ERC funding impact objectives, i.e. those who undertake research that has the potential to become regarded as path-breaking or 'frontier'. The methodology probes key research system components, such as researchers' standing in their knowledge communities, researcher careers, research content, and research conditions within research organisations. The resulting typology should permit a better understanding of the impact of the ERC and its funding schemes on the European research system – and of funding frontier-potential research more generally. The paper also touches upon researcher perceptions of the roles played by the ERC vis-à-vis other national and European research funders.

The methodology was designed to include an online survey questionnaire. This ran from mid-December 2010 to mid-February 2011. It addressed the 'first cohort' of researchers who applied for an ERC StG in 2007. Two panels were selected from this first cohort in order to control for dynamic changes in contextual conditions during later impact assessments. The first panel was successful applicants awarded a 2007 ERC StG. The second panel was applicants who passed what can effectively be seen as a 'quality' threshold for the StG grant (Stage 1 of the ERC's application evaluation process) but did not finally receive a grant. Both panels were assumed to contain very similar and equally 'excellent' researchers, given that the 'grantees' were awarded a high prestige ERC grant and the 'controls' only did not receive a grant due to budgetary reasons and not inherent 'excellence'-related problems (assuming the ERC's quality threshold held).

To date a first deployment of the survey has provided vital baseline data. However the methodology requires a further run, at least five or so years later, to permit sufficient time to pass for impact to become apparent and measurable. At that time, specific characteristics of both panels, as defined by the methodology, would be re-registered. The divergence of specific aggregates of changes in the 'grantee' panel away from corresponding changes in the initially similar 'control' panel would then be robustly attributed as ERC funding impacts. In other words the methodology provides two panels of similarly excellent researchers initially. One panel received ERC funding whilst the other did not. In simplification, all other conditions remain roughly equal (albeit dynamic). The main difference present between the first and second measurements will be ERC funding. Any impacts would be an outcome of it. This essential second step has yet to be performed. For now this paper deals with crucial aspects of the first, baseline step that lays the foundation for this later impact assessment.

To be robust, the methodology needed to be able to empirically determine precisely which particular respondents from the two panels were similar. This was desirable to as fine a degree as possible even down to single individuals (if permitted by sample size). It would be unreliable to simply take one average across the diverse range of all the respondents' research fields. To take one average for each of the three 'domains' within which the respondents were originally categorised by the ERC (physical sciences and engineering, life sciences, and social sciences and humanities; a fourth, interdisciplinary, has since been added by the ERC) would also not solve the problem. Data would be simply too heterogeneous for such averages to accommodate the complexity and specificity of the responding researchers, their research and their research conditions.

Instead the methodology used attempted to define a typology of the responding researchers, based on indicators within three overall categories, namely: demographic factors (gender, age, nationality, familial issues); research approach characteristics (geographical and disciplinary mobility, attitudes to novelty and risk within research project activities, career choices and ambitions, desirable workplace features, funding preferences, output activities); and markers of standing in knowledge communities (career standing, workplace standing, funding portfolio, collaboration). The reasoning was thus: 'demographics' were likely to influence researcher opportunities (but should not change after receipt of an ERC grant, i.e. an independent variable); 'approach' should indicate whether a researcher is undertaking research with the potential to become frontier (once again, most likely an independent variable, although change here might have been possible); and 'standing' would indicate access to the necessary settings/opportunities to perform and disseminate frontier-potential-research (and should be changed by receiving an ERC grant – or not – i.e. the dependent variable).

The aim was to use from these demographic/approach/standing indicators to locate all the responding researchers, from both panels, into a uniform typology – or else into three ERC-domain specific typologies to account better for variance caused by differing research traditions. In addition to highlighting any overall differences between the grantee and control panels, use of this typology would permit a further essential step. With all respondents assigned a discrete type, corresponding researchers that had been empirically found to be similar – not just assumed to be so – could then be

paired up between the two panels. The methodology would then be tracking actually similar individual researchers (or groups of very alike researchers) in both panels. Intentionally the survey was non-anonymous (albeit confidential) and the survey software used facilitates returning to the exact same individual researchers (or groups) during future measurement stages. Following a second survey measurement therefore, it will be possible to determine how empirically similar 'grantee' and 'control' researchers change over time under controlled conditions where the only (major) difference was an ERC grant. Any divergence in the changes of these initially-alike pairs should then be attributable as impact of ERC funding.

For the time being, the paper reports on the successes and challenges of creating the typology from the baseline survey measurement (where the 'grantee' panel included 276 potential respondents; the 'control', 105; and a total of 181 usable responses were received from the 381 potential respondents). The paper also touches upon a preliminary overview of selected more general results from the survey, including how the ERC was perceived by the responding researchers in comparison to other existing national and transnational funders.

Acknowledgements

This paper presents work from the EURECIA academic research project (2009 to 2011) sponsored by the ERC and funded by the Ideas Programme of the EU Seventh Framework Programme (grant number 229286), which aims to develop and to apply a novel conceptual framework and methodology to understand better the dynamics of the European science system and the activities of the European Research Council (ERC) by assessing the impact and outcomes of its funding schemes. The design of the survey was led by Duncan Thomas but significant inputs were received from the EURECIA project team.