



## Gender and the evaluation of research

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### ABSTRACT

This study examines if and how gender relates to research evaluation via panel assessment and journal ratings lists. Using data from UK business schools we find no evidence that the proportion of women in a submission for panel assessment affected the score received by the submitting institution. However, we do find that women on average receive lower scores according to some journal ratings lists. There are important differences in the rated quality of journals that men and women publish in across the sub-disciplines with men publishing significantly more research in the highest rated accountancy, information management and strategy journals. In addition, women who are able to utilise networks to co-author with individuals outside their institution are able to publish in higher-rated journals, although the same is not true for men; women who are attributed with “individual staff circumstances” (e.g. maternity leave or part-time working) have lower scores according to journal ratings lists.

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### 1. Introduction

Evaluating the quality of academic research and its policy outcomes is an important task. Academic research is under pressure to become more relevant to society and to pay its way (Nightingale and Scott, 2007), while the knowledge-based economy is seen as key to national competitiveness (Department for Business Innovation and Skills, 2012). Providing and developing an internationally competitive higher education sector, with high-quality teachers and researchers, is central to building such an economy and is a core objective of national and regional entities (e.g. European Commission, 2005).

Assessing new knowledge derived via research is controversial, and how that evaluation occurs may have important impacts. Gender equality is also a pressing policy issue in higher education (Jacobs and Winslow, 2004; London et al., 2012; Long et al., 1993; Mayer and Tikka, 2008; Miller et al., 2005; Rama et al., 1997; Van Den Brink et al., 2006; Wolfinger et al., 2009), especially since legislation requires the public sector to promote equality rather

than simply prevent discrimination.<sup>1</sup> There has been a shift internationally towards more ratings-based methods to measure the quality and impact of research, alongside other methods such as research assessment exercises (Butler, 2007; Coupé et al., 2010; Donovan, 2007; Moed, 2007).<sup>2</sup> Evaluation apportions not only income<sup>3</sup> but reputational impact on both the school and the individuals within it. The use of “A-journal” listings forms a critical element of US and Canadian tenure decisions, although these listings are not publicly provided and differ across institutions.<sup>4</sup> In Australia, institutions now follow a combination of indicators and expert review by committees comprising experienced, internationally recognised experts, having moved away from explicitly

<sup>1</sup> For example, the Equality Bill (2007).

<sup>2</sup> Some care is necessary since the term “impact” as it is used within the bibliometrics literature relates purely to numbers of citations. Since citations can be positive or negative (e.g. papers are cited as exemplars of poor research or to correct their errors), it is important to distinguish impact from “quality” as the term is used within the RAE/REF in the UK, where it is taken to mean the originality, significance and rigour of a piece of work.

<sup>3</sup> According to the Higher Education Funding Council for England, around £1.5bn was allocated in “QR” funding, which depends on research quality, to English universities alone in 2011–2012.

<sup>4</sup> Most internationally recognised US and Canadian institutions require six “A-list” publications over six years to obtain tenure. The specific outlets that make up the A-list differ between institutions but rankings form the basis of these.

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incorporating journal rankings (Donovan, 2007).<sup>5</sup> New Zealand has the Performance Based Research Fund (PBRF), developed to encourage excellent research at institutions of higher education. A total of 60% of the research funding available through the PBRF is allocated according to a peer assessment of individual research performance, which rates individuals' portfolios as having international, national or local standing.<sup>6</sup> Italy is developing a research exercise similar to the UK's.<sup>7</sup> There are also a host of alternative rating lists relating to business and management, including the Erasmus Research Institute of Management list, the ESSEC Research Centre Ranking of Journals, and subject-specific ratings such as that produced by the Tinbergen Institute and Internal Kiel Institute Journal Ranking.<sup>8</sup>

In the UK, the Research Assessment Exercise (RAE, now renamed the Research Excellence Framework (REF) for 2014) provides a comprehensive evaluation of the quality of research.<sup>9</sup> The RAE 2008 was the most recent of four evaluations conducted by academic institutions in the UK.<sup>10</sup> The objective was to produce quality profiles and sub-profiles for each submitting unit (Broadbent, 2010). The assessments were performed by panels of experts who produced quality profiles in three areas: outputs, environment and esteem.

Here we explore whether and how the gender of an author affects evaluations of research quality in business and management in the UK. Business and management is a significant cognate area regarding research evaluations, as the magnitude of business schools relative to other university departments means they are subject to much of the pressure for improved scores by academic institutions (Piercy, 2000). The UK is a particularly suitable setting for this enquiry, as it has a comparatively homogeneous higher education system, and a long history of research assessment (Collini, 2008). Moreover, the UK has witnessed repeated concerns about the use of journal ratings lists (Morris et al., 2011; Northcott and Linacre, 2010; Oswald, 2007; Piercy, 2000). Following considerable debate, the REF administrators have stated that in REF2014, no sub-panel will exclusively employ metrics to evaluate research

quality,<sup>11,12</sup> in part due to suggestions that they may disadvantage women (HEFCE, 2011).<sup>13</sup>

As is the case internationally, the use of journal ratings lists has become increasingly popular in the UK. It is seen as a means to objectify research assessment and avoid or compensate for any biases in peer review (Taylor, 2011a). Yet journal list-based evaluation has been criticised as inappropriate for this role, being inadequate as a measure of journal quality (Easton and Easton, 2003; Moed, 2007) where the indicator becomes a target leading to gamesmanship by the academic (Macdonald and Kam, 2007a,b) and leaving lower-rated journals struggling with diminished quality and quantity of submissions (Northcott and Linacre, 2010). Yet the proliferation of journal rating lists indicates increasingly wide usage across disciplines (both explicitly and implicitly) for a variety of quality assessment purposes, such as resourcing, recruitment, merit raises and promotion (Agrawal et al., 2011; Giles and Garand, 2007; Reinstein and Calderon, 2006; Voss, 2010). The Association of Business Schools (ABS) and the *Financial Times* journal lists are the most actively employed UK listings. The former has achieved some currency in other countries, where citation-determined impact factors also commonly appear in workload models, and feature in the discussions of interview panels and promotion committees (Beattie and Goodacre, 2012). Studies have demonstrated that the journal ratings of a department's publications are the strongest predictor of the results obtained in the 2008 UK's RAE, although journal ratings were not formally used in the evaluation (Kelly et al., 2009; Taylor, 2011b). University managers appear to be making increasing use of such journal ratings to prepare for the forthcoming assessment (REF2014).

Examining how gender relates to research assessment is complicated by the number of mechanisms through which women may be affected (Dwyer, 1994; Ginther and Kahn, 2004; Maranto and Griffin, 2011; Probert, 2005; Ward, 2001a). However, it is not clear if the use of different measures affects women, or how they may reinforce and/or interact with each other. While there have been a number of qualitative studies (Aksnes et al., 2011; Haynes and Fearfull, 2008; Knights and Richards, 2003) on gender effects, there has been less work examining how gender directly affects research exercises involving a peer review process or indirectly affects research evaluations via citation or journal ratings lists.

This paper examines both panel processes and journal ratings lists, which measure the quality of research in business and management in the UK. It makes two contributions. First, it examines whether the proportion of women in institutions submitted to the Business and Management Unit of Assessment in RAE 2008 impacts on institutional performance. Second, we examine whether journal ratings lists could indirectly affect the measured performance of women. We also examine whether indirect effects from the extent

<sup>5</sup> See also <http://arc.gov.au/era/era.2012/era.2012.htm> for the specific arrangements of the most recent exercise conducted in 2012.

<sup>6</sup> Detail concerning the PBRF is found at <http://www.tec.govt.nz/Funding/Fund-finder/Performance-Based-Research-Fund-PBRF/>.

<sup>7</sup> <http://www.anvur.org/?q=en/content/procedura-di-valutazione>.

<sup>8</sup> The Erasmus Research Institute of Management list is found at <http://www.erim.eur.nl/ERIM/About/EJL>; <http://www.tinbergen.nl/research-institute/journal-list.php>; the ESSEC Research Centre Ranking of Journals is found at [http://www.essec.edu/fileadmin/user\\_upload/Rubrique.Professeurs.et.recherche/Recherche/revues-management-classification.pdf](http://www.essec.edu/fileadmin/user_upload/Rubrique.Professeurs.et.recherche/Recherche/revues-management-classification.pdf); that of the Tinbergen Institute at (<http://www.tinbergen.nl/research-institute/journal-list.php>); and the Internal Kiel Institute Journal Rankings at (<http://www.ifw-kiel.de/forschung/internal-journal-ranking>).

<sup>9</sup> The RAE was an evaluation of the quality of research produced by UK universities run jointly by the Higher Education Funding Council for England (HEFCE), the Scottish Funding Council (SFC), the Higher Education Funding Council for Wales (HEFCW), and the Department for Employment and Learning, Northern Ireland (DEL). Any higher education institute in the UK that is eligible to receive research funding from one of these bodies was eligible to participate in the RAE, and the evaluation was done separately by subject area. The results of the exercises have been used to determine the amount of QR funding allocated to universities for their research. The exercise was conducted in 1986, 1989, 1992, 1996, 2001 and 2008. The RAE has now been replaced by the REF, which has similar objectives and will operate much like the RAE: see [www.rae.ac.uk](http://www.rae.ac.uk).

<sup>10</sup> Individual higher education institutions were free to select which subject area sub-panels to submit their work to for the RAE, and it might be that two or more schools from a given institution were combined together in a single submission. Therefore, in this paper, we use the terms "school", "department", "institution", "submitting unit" and "university" interchangeably since almost invariably each institution would make a maximum of one submission to the Business and Management Sub-Panel.

<sup>11</sup> REF2014: Assessment Framework and Guidance on Submissions, document no. 2011-12, p. 4, states that "while these experts will draw upon appropriate quantitative indicators to support their professional judgement, expert review remains paramount." Even more explicitly, the Panel Criteria and Working Methods document for Main Panel C, p. 64, states that, "No sub-panel will use journal impact factors or any hierarchy of journals in their assessment of outputs." In addition, the Business and Management Sub-Panel elected to neither receive nor make use of citation data for individual outputs (p. 66). See [www.ref.ac.uk/subguide/citationdata/contextualdata](http://www.ref.ac.uk/subguide/citationdata/contextualdata).

<sup>12</sup> We recognise the distinction between "bibliometrics," which usually refer to an assessment of the citation scores of a specific output, and journal impact factors. However, we employ data on journal ratings rather than those of the individual studies published in them, following the procedure that many institutions appear to be adopting in preparation for the REF.

<sup>13</sup> The study utilises information from 22 institutions across 35 RAE units of assessment drawing upon the Web of Science and Scopus databases. The study finds there is a gender difference comparing men's and women's scores. It does not consider the mechanisms by which women are disadvantaged.

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