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# A methodology to measure the effectiveness of academic recruitment and turnover



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## ABSTRACT

We propose a method to measure the effectiveness of the recruitment and turnover of professors, in terms of their research performance. The method presented is applied to the case of Italian universities over the period 2008–2012. The work then analyses the correlation between the indicators of effectiveness used, and between the indicators and the universities' overall research performance. In countries that conduct regular national assessment exercises, the evaluation of effectiveness in recruitment and turnover could complement the overall research assessments. In particular, monitoring such parameters could assist in deterring favoritism, in countries exposed to such practices.

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## 1. Introduction

The quest for excellence in research and higher education systems is a high priority for national governments, faced with the current realities of the knowledge economy. Universities produce new knowledge and educate the future labor force, and thus represent a potential distinctive competence in strengthening the nation's competitive advantage. The European Union considers the contribution of higher education as central in giving the region "the most competitive economy and knowledge-based society of the 21st century". Nevertheless, the EU higher education system remains fragmented, and in many countries is hampered by a combination of excessive public control and scarce autonomy. In the recent years we have witnessed interventions by a growing number of governments to reinforce competitive market-like mechanisms and thus achieve greater effectiveness and efficiency (Jongbloed, 2004). In Northern Europe, the application of New Public Management in the academic sector, with emphasis on quasi-market competition, efficiency and performance audit practices, has led to an overall increase in performance, together with greater differentiation among universities in the 1990s, and less so in the 2000s (Halffman & Leydesdorff, 2010). Expectations are also that, in the coming years, government funding will be distributed in an increasingly less uniform manner (Horta, Huisman, & Heitor, 2008). In southern Europe, higher education systems are generally composed of public universities with relatively low autonomy, and are often characterized by weak overall performance with little differentiation among institutions (van der Ploeg & Veugelers, 2008). In Italy, as a case in point, the variability of research productivity among universities (standardized citations per researcher in the same field)

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results as being much lower than that within individual institutions, which then result as rather homogeneous in terms of research performance (Abramo, Cicero, & D'Angelo, 2012a).

A distinctive competence of prestigious universities is their ability in attracting and retaining the best professors. Other key competencies, such as success in attracting talented students and abundant resources, are a direct consequence of the quality of faculty. In these institutions, appointments to academic positions are normally managed through institutionally appointed *ad hoc* search committees, which advertise the competitions in international social networks and scientific journals. In contrast, a number of the European nations govern recruitment and advancement through the imposition of rigid procedures, regulated and in part enacted by a central bureaucracy. In nations with non-competitive higher education systems, and with generically high levels of corruption in public administration, this situation generates further exposure to phenomena of favoritism and nepotism in faculty recruitment and advancement. Italy is a case in point, as shown by empirical studies, judicial reports and media attention. Italian governments have intervened repeatedly to reduce the problem, with scarce success. In cases such as this, access to instruments that could measure the effectiveness of the universities' academic recruitment could serve as a deterrent against the activation and continuation of the practices of discrimination and favoritism.

In this work we present a methodology to measure, in comparative terms, the effectiveness of recruitment and turnover by universities. Since the single most important criterion in the selection of candidates to faculty positions is excellence in research, we simply compare the research performance of the new entrants to the average performance of their peers, in the same fields of research. Those universities that tend to recruit higher performing candidates will evidently be the most effective. We conduct an analogous operation for the professors separating from faculty, in which we adopt the principle that the universities which succeed in disposing of low performers (*i.e.* retaining the higher performers) are those most effective in managing turnover. The current paper applies the methodology to the case of Italian universities, however the model should be of interest to all countries characterized by non-competitive higher education systems, as well as all those that adopt national research assessment exercises. The information gained through the methodology could be of interest in selective funding. It also contributes to greater symmetry of information between universities and stakeholders, and permits the universities and government to demonstrate to taxpayers that public money is effectively spent.

The next section of the paper describes the Italian context in terms of the higher education system and recruitment processes. Section 3 describes the methodology for measurement of scientific merit and presents the dataset for the analyses. In Section 4 we analyze the Italian academic mobility in the period under observation. In Section 5 we develop the indices of effectiveness for recruitment, turnover, and overall mobility, and present the resulting rankings from their application to Italian universities. The final section discusses the conclusions and implications.

## 2. The Italian higher education system

The Italian Ministry of Education, Universities and Research (MIUR) recognizes a total of 96 universities as having the authority to issue legally recognized degrees. Of these, 29 are small, private, special-focus universities, 67 are public and generally multi-disciplinary universities, scattered throughout Italy. 94.9% of faculty are employed in public universities. Public universities are largely financed by the government through mostly non-competitive allocation of funds. Until 2009 the core government funding was independent of merit, and distributed to universities in a manner intended to satisfy the needs of each and all equally, with respect to their size and research disciplines. It was only following the first national research evaluation exercise, conducted in the period 2004–2006, that a minimal share, equivalent to 3.9% of total income, was assigned by the MIUR as a function of the assessment of research.

In keeping with the Humboldtian model, there are no 'teaching-only' universities in Italy, as all professors are required to carry out both research and teaching. National legislation includes a provision that each faculty member must devote a minimum of 350 h per year to teaching activities.

Salaries are regulated at the central level and are calculated according to role (administrative, technical or professorial), rank within role (*e.g.* assistant, associate or full professor) and seniority. None of a professor's salary depends on merit. Moreover, as in all Italian public administration, dismissal of unproductive professors is unheard of. All new personnel enter the university system through public competitions (*concorso*), and career advancement depends on further public competitions. The entire legislative–administrative context creates a culture that is scarcely competitive, which is further associated with high levels of corruption and favoritism. According to The Global Competitiveness Report 2014–2015 (Schwab, 2014), Italy ranks 106th out of 144 countries in deterioration in the functioning of its institutions, and 134th in favoritism in decisions of government officials; while placing 54th out of 150 countries in the 2014 World Democracy Audit for corruption<sup>1</sup>. It is no surprise then that the nationally governed competitions for faculty positions have come under frequent fire, and that the Italian word "*concorso*" has gained international note for its implications of rigged competition, favoritism, nepotism and other unfair selection practices (Gerosa, 2001). Letters in prestigious journals such as *The Lancet*, *Science* and *Nature* (Garattini, 2001; Aiuti, 1994; Biggin, 1994; Amadori, Bernasconi, Boccadoro, Glustolisi, & Gobbi, 1992; Gaetani & Ferraris, 1991; Fabbri, 1987), as well as entire monographs, (Perotti, 2008; Zagaria, 2007) continue to report on injustice in recruitment, including

<sup>1</sup> <http://www.worldaudit.org/corruption.htm>, last accessed on September 15, 2015.

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