What do Examiner Patent Citations Indicate in Regions With Low Absorptive Capacity?

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Abstract

Citations in patents are a frequently used indicator of patents' knowledge base. Traditional studies justify the use of citations although most of them originate in examiners because inventor citations are abundant and even predominant. The literature on the differences between examiner and inventor citations is very recent, mainly based on the US case, and it analyses only those inventor citations that the examiner consider relevant. Most studies use to focus on national or international contexts, especially contexts with high absorptive capacity, or peak technologies, strongly dependent of science, and they employ examiner citations. We claim that the results may vary when we take the region as the context of analysis, especially if it is a region with low absorptive capacity, and when we study all inventor citations and examiner citations separately, especially in the European case, where the obligation to reveal information is not as compelling as in the US case.

We test this hypothesis through the analysis of a region that fits in the profile of a region with low absorptive capacity, the Valencian Community in Spain. To this end, we built a database with 571 Valencian firm patents, applied for between 1999 and 2003 through the Spanish, European and World Patent Offices. We extracted examiner citations from front pages and inventor citations from the description of the invention included in the application form. We classified patents by year of application, patent office, number of co-applicants, sub-regional division, technology class and technology scope. We created a variable on the difference between examiner and inventor citations and ran some regressions to explain it. We interpret the results in terms of the extent to which examiner citations are representative of inventor citations. A first difference with traditional studies is that only 30 percent of Valencian firm patents have at least one inventor citation, so it makes it recommendable to perform the estimations on the full sample and a sub-sample of patents with a positive number of inventor citations. According to the econometric results, examiner citations are representative of inventor citations by patent office and number of co-applicants and technology scope. For the full sample, examiners citations are becoming more representative of inventor citations through time but for the sub-sample, the opposite occurs, i.e. examiner citations hide a significant drop of inventor citations in patents with at least one inventor citation. For both the full sample and the sub-sample, examiner citations underrepresent inventor citations in science-based technologies and overrepresent inventor citations in other technologies, i.e. examiners tend to smooth the differences in inventor citations by technological class. We conclude that a study based only in the often-used examiner citations in a region with low absorptive capacity may lead to biased results and that the results from traditional approaches is not generalisable. We recommend continuing the separate use of inventor and examiner citations and we discuss to what extent science and technology policymaking can rely on these indicators.