Geographic distribution of Indian academic research

How are the various States and Union Territories of India performing relative to each other in academic research? A simple way to find an answer is to see the percentage of papers each state publishes in the Web of Science journals and relate it to its percentage share of GDP.

The scientific output is measured in terms of the number of articles published from the various states of India as registered by the Web of Science over a 3-year period (2007–2009). The GDP of each state was measured in billions of dollars in 2009 (http://www.economist.com/content/indian-summary, accessed on 22 July 2011).

Table 1 presents the results of the output from various Indian States from the Web of Science during 2007–2009 (ref. 1). Tamil Nadu (TN) accounts for the largest number of publications, i.e. 14.05% share of the Indian scientific output during this period. At the same time, it had only a 7.4% share of Indian GDP in 2009. One can think in terms of a leverage ratio of these two percentages: from Table 1, this leverage term for TN is 1.90. The Union Territory of Chandigarh, which has many top national research and academic institutes, ranks first among the Indian States for academic scientific research on this leverage basis; it is 5.59 times more effective than the Indian average. Delhi, which has a privileged status as the National Capital Region, ranks second and the erstwhile Union Territory of Puducherry ranks third on this leverage basis. This is not surprising as a large number of premier research and academic institutes are based in Delhi. Similarly, for its size, Puducherry has a good share of leading central institutes devoted to higher education and research. Among the larger states, Karnataka, TN, West Bengal and Uttar Pradesh perform above this average. Two large states, both in size and from GDP considerations, which are poorly leveraged are Maharashtra and Gujarat. The same information is conveyed graphically in Figure 1. Andhra Pradesh and Kerala are delicately poised at the average leverage line (shown by a dotted line in Figure 1).


GANGAN PRATHAP

CSIR National Institute of Science, Communication and Information Resources
New Delhi 110 012, India
e-mail: gp@niscair.res.in