

Italy's anti-nepotism drive picked up in surname study

Statistical study of how names are geographically distributed suggests fewer professors are hiring relatives after 2010 clampdown.

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Nepotism crackdown: in 2010, Italy passed a reform to try to prevent academics from hiring their relatives.

A 2010 law aimed at cracking down on nepotism in Italy's academic system seems to be working, according to an analysis of academic scientists' surnames.

In 2011, ecologist and statistician Stefano Allesina at the University of Chicago in Illinois looked at the diversity of last names in Italian academia and said that his analysis¹ supported widespread anecdotal evidence that nepotism was a problem in the country's science system.

But some Italian researchers criticized the work and questioned the methods. They thought that it overestimated nepotism, and suggested that the study underestimated how much regional naming trends might account for any unusual clustering of last names. It also ignored other possible explanations, critics suggested: for example, some children of professors might legitimately deserve an academic position.

Now, Allesina, along with his University of Chicago colleague Jacopo Grilli, has redone his analysis with more sophisticated statistical methods. Their results suggest that there has been a decline in nepotism in Italy since the introduction of the 2010 law, which banned even indirect relatives — such as cousins — of professors from being hired in the same department. The work is published² in *Proceedings of the National Academy of Sciences USA*.

Alllesina and Grilli assembled a list of the names, ranks, genders and scientific fields of all permanent professors at Italian public universities in 2000, 2005, 2010 and 2015 — around 60,000 researchers in each year. To find out what Italy's scientific system would look like if professors were chosen at random, they shuffled the names around in three different ways: at the national level, within cities, and within each field. By comparing these pictures with the real situations, the pair could detect statistical anomalies in the genuine distribution: for example, where particular surnames might occur too often to be explained by chance or geography alone.

Friends in high places

According to Allesina and Grilli, the likely cause for such anomalies is nepotism: professors hiring their relatives. This seems to happen in particular in medicine and chemistry, and in the southern regions of Puglia, Sicilia and Campania, they found.

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But when the researchers compared the data from 2015 with the earlier years, they found that things were worse in the past. In 2010 and before, statistical evidence of nepotism was stronger, and showed

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up in more fields, including engineering, law and economics. That was not a surprise, says Grilli, because of the 2010 law. "The fact that the effects of the law show up in the data proves that our method works," says Grilli. "It means that we are indeed measuring nepotism, and that it is declining but still there."

Giuseppe De Nicolao, who studies data analysis at the University of Pavia in Italy, says that the pair's revised methods suggest that they have taken into account that the problem is more complex than it seemed. But he remains sceptical. "Statistical significance is one thing; practical significance is another one," he says. The absolute figures show that only a small proportion of appointments are suspect, he says, so nepotism has a small effect.

De Nicolao adds that the kind of "biological nepotism" that Allesina and Grilli measured is less important than "academic nepotism", where professors favour their own students and friends. "But that is not a uniquely Italian problem, and can't be as easily detected," he says.

Allesina and De Nicolao agree that the 2010 law isn't a complete solution. Professors could still have a friend hire their relatives in another department or university, says Allesina. The law might even have negative side effects: it can make it impossible for researchers who marry each other to keep working in the same department. "We are already losing many brilliant researchers because of this," De Nicolao says. "It is the opposite of what happens in other countries, where universities lure brilliant researchers by also offering a position to their partner."

Allesina, Grilli and De Nicolao all agree that the most striking finding in the paper has nothing to do with nepotism: it's the fact that the number of publicly funded research professors in Italy has shrunk by 10% since 2005, from 60,000 to 54,000 today. Some universities have lost one-third of their staff, mainly as a result of budget cuts. If there are too many cuts, there will be no more nepotism, but no professors either, says Allesina. That "would not be a great solution".

References

1. Allesina, S. *PLoS ONE* **6**, e21160 (2011).
2. Grilli, J. & Allesina, S. *Proc. Natl Acad. Sci. USA* <http://www.dx.doi.org/10.1073/pnas.1703513114> (2017).