Profiting from the fight against corruption

March 13 2017

It makes sense for non-governmental organizations to band together to fight government corruption; they get better results that way.

But did you know it's also in the corrupt government's interest?

That's the startling finding of a new game theory paper by researchers at HEC Montréal published in the January issue of *Mathematical Social Sciences*.

"The fact that civil society organizations achieve a better result when they cooperate is intuitive," note the study's co-authors, Fabien Ngendakuriyo and Georges Zaccour of the inter-university Group for Research in Decision Analysis (GERAD).

At the same time, one might "expect that a predatory government prefers facing uncoordinated civil society organizations," the authors continue. But that's far from true, they argue.

"A corrupt government will be better off if [...] civil society organizations cooperate. [...] [It will] prefer to see citizens allocating a significant proportion of their time to productive activities, which will subsequently increase the government payoff."

Fingers in the pie

Zaccour, a professor at HEC Montréal's Department of Decision Sciences, explained why.

"It's always a tradeoff," he said.

"The NGOs get stronger when they cooperate with each other, but at the same time, the more they cooperate, they more efficient they become, and that leaves even greater leeway for a corrupt government to dip into the coffers."

How so?

"When anti-corruption works, it creates wealth for everyone - including, paradoxically, the government, because it has its fingers in the pie, too."

To construct their game, the researchers expanded a previous study they did in 2013 in which the government and civil society were in continuous long-term interaction.

They gave government the role of "leader" and two NGOs the role of followers who can compete or coordinate their strategies in the fight against government corruption.

Key was finding out whether cooperation was better, and for whom.

As it turns out, it's better for both, the leader as much as the followers. And the proof is in the several pages of mathematical formulae Zaccour and Ngendakuriyo used to model their game and test it out.

"For the moment, our work is purely theoretical," Zaccour said. "The next step will be to see if we can validate our results through stories from the field that can be documented at a qualitative level."

The Africa connection

Zaccour credits Ngendakuriyo with the idea for the game. It grew out of

the academic interest the young researcher, who's originally from Burundi, took in government corruption while at Université catholique de Louvain, in Belgium.

He did his graduate studies there from 2005 to 2011, earning a doctorate in economics before coming to Montreal to do further research at GERAD. Since 2013 he has worked as an East Africa research analyst for the World Bank, in Tanzania.

Based at the University of Montreal, GERAD brings together some 70 mathematicians, computer scientists and other experts from the HEC and Polytechnique Montréal, as well as from McGill University and UQÀM.

"For us, mathematics are an instrument," said Zaccour, GERAD's chair of game theory and management.

"Usually, it's economists and political scientists who are interested in things like corruption and its impact. What we do is sketch it out in the form of a game and draw our conclusions."

It's how academics like him operate, he said.

"In the social sciences, we don't have laboratories like physicists and chemists do. Our laboratory is the mathematical model, and we manipulate those models to deduce the results we get."

More information: Fabien Ngendakuriyo et al, Should civil society organizations cooperate or compete in fighting a corrupt government?, *Mathematical Social Sciences* (2017). DOI: 10.1016/j.mathsocsci.2016.11.001