

Artificial intelligence predicts corruption

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Artificial neural networks and a database of real cases have revealed the most predictive factors of corruption. Credit: Pixabay

Researchers from the University of Valladolid (Spain) have created a computer model based on neural networks that calculates the probability in Spanish provinces of corruption, as well as the conditions that favor it. This alert system confirms that the probabilities increase when the same party stays in government for more years.

The study, published in *Social Indicators Research*, does not mention the provinces most prone to [corruption](#) so as not to generate controversy, explains one of the authors, Ivan Pastor, who says, "A greater propensity or high probability does not imply corruption will actually happen."

The data indicate that the real estate tax, the exaggerated increase in the price of housing, the opening of bank branches and the creation of new companies are some of the variables that seem to induce [public corruption](#), and when they are added together in a region, more rigorous control of public accounts might be warranted.

"In addition, as might be expected, our model confirms that an increase in the number of years of government by the same political party increases the chances of corruption, regardless of whether or not the party governs with majority," says Pastor. "Anyway, fortunately, for the next years, this alert system predicts fewer indications of corruption in our country. This is mainly due to the greater public pressure on this issue and to the fact that the economic situation has worsened significantly during the crisis."

To carry out the study, the authors relied on all cases of corruption that appeared in Spain between 2000 and 2012, such as the Mercasevilla case (in which the managers of this public company of the Seville City Council were charged) and the Baltar case (in which the president of the Diputación de Ourense was sentenced for more than a hundred contracts "that did not complied with the legal requirements").

The collection and analysis of all this information was conducted with [neural networks](#), which show the most predictive factors of corruption. "The use of this AI technique is novel, as is the database of real cases, since until now, more or less subjective indices of perception of corruption were used, with scores assigned to each country by agencies such as Transparency International, based on surveys of businessmen and

national analysts," says Pastor.

The authors hope that this study will contribute to better direct efforts to end corruption, focusing the efforts on those areas with the greatest likelihood, as well as applying their model internationally.

More information: Félix J. López-Iturriaga et al. Predicting Public Corruption with Neural Networks: An Analysis of Spanish Provinces, *Social Indicators Research* (2017). [DOI: 10.1007/s11205-017-1802-2](https://doi.org/10.1007/s11205-017-1802-2)

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