Computer model shows that preventing extortion is more efficient than fighting it

February 22 2021

Francisco Grimaldo. Credit: Asociación RUVID

Francisco Grimaldo, professor at the Department of Computer Science

at the University of Valencia (UV), together with Mexican researchers, has developed a computer model that allows simulating the effect of extortion on companies and analyzing aspects such as GDP, the unemployment rate or the inflation. Research shows that the negative effects of extortion are milder when the population does not commit this crime than when it stands trial.

The project developed by Francisco Grimaldo, in collaboration with the Artificial Intelligence Research Centre of the Universidad Veracruzana (Mexico), measures the socioeconomic impact of extortion, a type of crime which it is difficult to obtain data on because the number of complaints is low for fear of retaliation.

"The analysis of in silico data, generated through large-scale simulation computational models, allows us to scrutinize the behavior of complex systems such as criminal networks anonymously and securely," Francisco Grimaldo highlighted.

The [computer model](#) includes the different economic actors that intervene in the goods market, the labor market and the credit market; thus, the micro and macroeconomic indicators of this simulated society are calculated adjusting parameters such as the propensity to make use of extortion, the limit that companies will be willing to pay, or the probability that these criminals will be imprisoned.

The data analyzed shows how a greater number of extortionists increases the [unemployment rate](#) and inequalities, in addition to having a negative effect on GDP.

The results obtained by the study through the two main variables of the [model](#), which are the probability that the population will become extortionists (which will depend on the authorities' ability to prevent it) and the probability that the extortionists are imprisoned (which will

depend on the effectiveness with which the justice system punishes this crime), present better socioeconomic data in a scenario where the appearance of extortionate attitudes can be prevented as much as possible.

The authors highlight that a possible way to prevent extortion would be to make this activity less profitable for criminals since, according to the research data, the wealth of extortionists is strongly related to the propensity to report companies. An effective justice system that builds trust in citizens would also help in this prevention.

More information: Alejandro Platas-López et al. On the Macroeconomic Effect of Extortion: An Agent-Based Approach, *Journal of Artificial Societies and Social Simulation* (2021). DOI: 10.18564/jasss.4496

Provided by Asociacion RUVID