Nonlinear Fisher-Kolmogorov equations applied to complex systems

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We propose a quantitative model for the possible attenuation of social conflicts in Latin American countries [1]. We utilize public data such as the consumer price index, the gross domestic product, the debt ratio, and distributions of salaries and per capita income as inputs for a set of two coupled nonlinear Fisher-Kolmogorov equations. The solutions accept interpretation regarding the dynamics population, providing an in-depth analysis of the solution evolution. According to our results, the concavity of salary distribution is a decisive input. Based on the results, we advocate for implementing social policies designed to stimulate social mobility by broadening the distribution of higher salaries. With these supplies, we have a grant to develop a web application to enter actual data of factories, organizations, or countries to prevent any social conflict derived from the failed distribution of salaries.

[1] PLoSONE 16 e0256037 (2021).