An Agent-Based Simulation of How Promotion Biases Impact Corporate Gender Diversity

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Abstract

Diversity & Inclusion (D&I) is a topic of increasing relevance across virtually all sectors of our society, with the potential for significant impact on corporations and more broadly on our economy and our society. In spite of the fact that human capital is typically the most valuable asset of every organization, Human Resources (HR) in general and D&I, in particular, are dominated by qualitative approaches. We introduce an agent-based simulation that can quantify the impact of certain aspects of D&I on corporate performance. We show that the simulation provides a parsimonious and compelling explanation of the impact of hiring and promotion biases on the resulting corporate gender balance. We show that varying just two parameters enables us to replicate real-world data about gender imbalances across multiple industry sectors. In addition, we show that the simulation can be used to predict the likely impact of different D&I interventions. Specifically, we show that once a company has become imbalanced, even removing all promotion biases is not sufficient to rectify the situation, and that it can take decades to undo the imbalances initially created by these biases. These and other results demonstrate that agent-based simulation is a powerful approach for managing D&I in corporate settings, and suggest that it has the potential to become an invaluable tool for both strategic and tactical management of human capital.

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