

集成CA与QSIM的非正式组织群体行为演化的定性模拟

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Qualitative Simulation for Nonprofit Group Behavior by Integrating CA and QSIM

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摘要 集成QSIM(Qualitative SIMulation)算法和CA(Cellular Automata,即元胞自动机),提出一种非正式组织群体行为定性模拟方法。其中,用基于CA的方法描述了群体成员行为、成员人性特征和群体环境因素;在此基础上,根据QSIM的定性模拟思路,设计了群体行为后续状态转换方法、过滤器和模拟引擎,提出了忠诚-成本均衡概念,以设计过滤器;Visual Basic 6.0用来编程实现了本文的方法;通过八项实验设计,对本文方法进行了确认;应用中的模拟结果表明,本文方法能够做为非正式组织管理决策支持的虚拟实验工具。

关键词: 元胞自动机 定性模拟 忠诚-成本均衡 忠诚度引力 成本引力

Abstract: A qualitative simulation for nonprofit group behavior is proposed by integrating QSIM(Qualitative SIMulation) and CA(Cellular Automata).CA based method is used in description for group behavior,characteristic of member and environmental factor.Based on it,transition of successor behavior state,filter and simulation engine are proposed in terms of notions in QSIM.The concept of fidelity-cost equilibrium is presented to design filter.The proposed method is coded by Visual Basic 6.0.Validation of the proposed method is tested by simulation with eight naive experimental designs.Simulation results in application show that the proposed method can be served as a virtual experiment tool for decision making in management of nonprofit group.

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