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Author(s)	山田,広明
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Description	Supervisor:橋本 敬,知識科学研究科,博士



Abstract: The purpose of this research is to reveal the mechanism of grassroots formation of local community and to propose a design strategy that is to promote the formation and expansion of local community by acting on the mechanism revealed. We analyze the grassroots formation from the viewpoint of resources mobilization theory and point out that solidary incentive is a key factor in the spontaneous formation. We claim that, in order to cause the spontaneous formation, we should act on psychological factors that trigger the self-reinforcement of solidary incentive and need to integrate socially isolated people, who cannot be motivated by the solidary incentive, into the local society. In this thesis, we focus on self-efficacy as a trigger of the self-reinforcement of solidary incentive and third place as a system which integrates socially isolated people. For understanding how above ideas work, we adopt a constructive approach, in which we construct models representing objective phenomena and operate the models using a simulation.

In order to investigate the effect of solidary incentive and self-efficacy on the formation of local community, we construct an agent-based model representing local residents whose decisions are strongly affected by subjective norm, which is one of the sources of solidary incentive, and self-efficacy worked as self-reward. The model demonstrates the spontaneous formation of local community and reveals an important role of neutral attitude people on the formation. Concretely speaking, cultivation of self-efficacy on the neutral attitude people promotes the spontaneous formation.

Computer experiments of the other agent-based model to find out effective designs of third place to integrate socially isolated people show that, given a high proportion of individual-oriented people (one of the typical types of socially isolated people), designing comfortableness arising from physical factors promotes the coexistence of individual-oriented people and the others. Further, we show that facilitating communication between different types of visitors of third place increases the mobility of the visitors and prevents the exclusion of individual-oriented people.

We conclude that solidary incentive, such as subjective norm, drives the grassroots formation of local community and cultivating self-efficacy on the neutral attitude people accelerate the formation. Moreover providing comfortableness arising from physical factors and facilitating communication between the different types of visitors realize social integration at the third place.

**Keyword:** solidary incentive, self-efficacy, third place, community design, agent-based simulation