論文の内容の要旨

論文題目　Essays on Collective Choice of Locations of Public Facilities
（公共施設の立地の集団的選択に関する研究）

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This thesis comprises three essays on the collective choice of locations of public facilities.

In the first essay, we investigate a model where, on a tree network, players collectively choose the location of a single public facility by noncooperative alternating-offer bargaining with the unanimity rule. We show the existence of a stationary subgame perfect equilibrium and the characterization of stationary subgame perfect equilibria. We also show that the equilibrium location converges to the Rawls location (the Rawlsian social welfare maximizer) as the discount factor tends to 1; however, it does not relate to the Weber location (the Benthamite social welfare maximizer).

In the second essay, we examine a model where, on a line network, individuals collectively choose the location of an undesirable public facility through bargaining with the unanimity rule. We show the existence of a stationary subgame perfect equilibrium and the characterization of stationary subgame perfect equilibria when the discount factor is sufficiently large. Furthermore, we show that as the discount factor tends to 1, the equilibrium location can converge to a location that is least desirable according to both the Benthamite and Rawlsian criteria.

In the third essay, we consider the outcome of majority voting in multiple undesirable facility location problems where the locations of two facilities are planned, any individual is concerned about the location of the nearest facility but not about the location of the other facility, and any individual prefers that the location of the nearest facility be as far as possible from his/her location. We show that a Condorcet winner is a subset of the set of pendant vertices and the vertices adjacent to pendant vertices on a tree network with an odd number of individuals. Furthermore, we derive a necessary and sufficient condition for a set of locations to be a Condorcet winner on a line network with an odd number of individuals.