Location Choice of Firms in an Unequal Length Streets Model: Game Theory Approach as an Extension of the Spoke Model

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Abstract : Locating is one of the key elements in success and survival of industrial centers and has great impact on cost reduction of establishment and launching of various economic activities. In this study, streets with unequal length model have been used that is the classic extension of Spoke model; however with unlimited number of streets with uneven lengths. The results showed that the spoke model is a special case of streets with unequal length model. According to the results of this study, if the strategy of enterprises and firms is to select both price and location, there would be no balance in the game. Furthermore, increased length of streets leads to increased profit of enterprises and with increased number of streets, the enterprises choose locations that are far from center (the maximum differentiation), and the enterprises' output will decrease. Moreover, the enterprise production rate will incline toward zero when the number of streets goes to infinity, and complete competition outcome will be achieved.

Keywords : locating, Nash equilibrium, streets with unequal length model, streets with unequal length model
Conference Title : ICGT 2019 : International Conference on Game Theory
Conference Location : Zurich, Switzerland
Conference Dates : January 14-15, 2019