

1145-49-1469

Gayatri Pany* (gayatripany@gmail.com), Singapore University of Technology and Design, Singapore, 487372, Singapore. *Equilibrium structure for a spatial economy: effects of automated transport modes.*

Our study relates to potential games, i.e., the study of games where the equilibria can be derived from the optimization of a potential. A potential is a functional in terms of some distribution related to the underlying game, for example it may be action distribution or spatial distribution, depending on the framework of the game. Adoption of variational approach enables to find the equilibria effectively. It has been observed that urban forms are affected by the continuous development of the transport modes. Several case studies are available in literature. Motivated by these works, we study equilibrium structure for a spatial economy (\mathcal{S}) based on, before and after the introduction of automated modes of transport. In this work we adopt the variational approach. The first step towards applying the variational approach will be to build up an utility functional in terms of distribution of commuters (λ). Critical points of this functional will represent the equilibria for the spatial economy. Our study is at the exploratory stage. Consequently we will study the conditions for the existence and uniqueness of the equilibria. (Received September 22, 2018)