



Application of GIS in exploring spatial dimensions of Efficiency in Competitiveness of Regions

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Infrastructure is an important component in building competitiveness of a region. Present global scenario of economic slowdown that is led by slump in demand of goods and services and decreasing capacity of government institutions in investing public infrastructure. Strategy of augmenting competitiveness of a region can be built around improving efficient distribution of public infrastructure in the region. This efficiency in the distribution of infrastructure will reduce the burden of government institution and improve the relative output of the region in relative lesser investment.

A rigorous literature study followed by an expert opinion survey (RIDIT scores) reveals that Railway, Road, ICTs and Electricity infrastructure is very crucial for better competitiveness of a region. Discussion with Experts in ICTs, Railways and Electricity sectors were conducted to find the issues, hurdles and possible solution for the development of these sectors.

In an underdeveloped country like India, there is a large constrain of financial resources, for investment in infrastructure sector. Judicious planning for allocation of resources for infrastructure provisions becomes very important for efficient and sustainable development. Data Envelopment Analysis (DEA) is the mathematical programming optimization tool that measure technical efficiency of the multiple-input and/or multiple-output case by constructing a relative technical efficiency score. This paper tries to utilize DEA to identify the efficiency at which present level of selected components of Infrastructure (Railway, Road, ICTs and Electricity) is utilized in order to build competitiveness of the region. This paper tries to identify a spatial pattern of efficiency of Infrastructure with the help of spatial auto-correlation and Hot-spot analysis in Arc GIS. This analysis leads to policy implications for efficient allocation of financial resources for the provision of infrastructure in the region and building a prerequisite to boost an efficient Regional Competitiveness.