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Effect Equilibrium Approach in Calculating the Economic Range of a Freeway Industrial Zone

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Abstract

This research aims to develop a valid method to examine the relationship between transportation infrastructure and economic growth through the measurement of the economic boundary of a freeway industrial zone in developing countries. By comparing the similarities of a freeway industrial zone with an electromagnetic field, the Boit-Schwander law in electromagnetism is applied to create an electromagnetic model, which can calculate the attractive effect caused by a freeway on its influential area. When the attractive effect is equal to the traffic impedance, the economic range of the industrial zone can be determined by the effective equilibrium approach. An empirical analysis of the Ha-Shuang freeway demonstrates this approach is valid and practical.