Predicting Transportation Demand Based on Manufacturing Activity

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1 Introduction

The movement of resources, people, and things is made possible through transportation, which is essential to the operation of contemporary society. To optimize supply chains, cut costs, and reduce environmental impact, transportation resources must be allocated effectively. The level of manufacturing activity within an economy has a substantial impact on transportation demand. Traditionally, transportation demand estimation has relied on historical data, trend analysis, and expert judgment. However, with the development of big data and sophisticated analytical methods, there is a chance to use data-driven methodologies to better correctly estimate transportation demand. In this study, we present a unique methodology for more accurate and reliable transportation demand prediction using data on factory activities. Moreover, the geographical distribution and clustering of manufacturing facilities significantly influence transportation patterns, as the movement of goods between suppliers, production sites, and distribution centers forms intricate transportation networks. Therefore, the central question guiding our research is: How effectively can manufacturing activity data be utilized to predict transportation demand, and what insights can be derived to optimize transportation planning and resource allocation? By addressing this question, we aim to uncover the underlying relationships and patterns between manufacturing activity and transportation demand, ultimately contributing to more accurate forecasting and informed decision-making. The dataset contains 623 observations and 12 variables. The findings of this research have important implications for policymakers, organizations, and advocacy groups committed to promoting fair and inclusive labor practices globally.

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2 References