

Utilization of Big Data to Improve Traffic Demand Estimation

- Focused on New Development Areas

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Summary

1. While national estimation of traffic demand has long been developed based on the 4-step model, changes in population and social environment, behavioral patterns and policy direction have raised diverse demand in improving analysis methodology for traffic demand estimation.
2. This study verifies outcomes from each step of current traffic demand model (Trip Demand – Trip Distribution – Transport Allotment – Trip Assignment) using Big Data and propose methods improving the current model.
3. Particularly for newly developed areas where speed of development is rapid, Big Data can solve the problem of data shortage for traffic demand estimation by filling the gap between time intervals of each data collection cycle.
4. In order to make practical use of Big Data pilot research such as of this study, technological and institutional support is necessary, and especially technological integration methodology is required for improving provision of traffic data and overcoming inherent limitations in application of analysis methodology.

Policy Issues

1. To actively utilize Big Data for transportation sector, it is fundamental to continually carry out studies in utilizing current analysis framework. In addition, it is must to provide technological support and to develop a methodology that is specialized for Big Data in order to facilitate the acquisition and analysis of Big Data.
2. **Data Policy:** The scope and method of Big Data supply should be reviewed and improved in its quality along with the formation of consistent data market including regular subscription services to improve

process of acquiring Big Data

3. **Information Service Policy:** It is necessary to connect Big Data providers and Big Data customers of traffic experts and policy makers under the entity, which is specialized in providing traffic related processing and analyzing services. Ultimately it is essential to foster workforce equipped with knowledge in traffic sector and information technology especially on Big Data.
4. **Big Data Research Policy:** To effectively improve current methodology for traffic demand estimation using Big data, it is necessary to launch cooperative research between researchers who construct national traffic DB and researchers who utilize the DB. In the future, development of new traffic demand analysis methodology that goes beyond the scope of current methodology in use should be pursued.