

## Research Trends and Results

# Movement of people, development of a platform, and working on the application of transportation planning

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### 1. Introduction

Information that can clarify the actual way people move collected 24 hours/day for 365 days/year on a nationwide scale from smartphones, car navigation systems, transportation smart card systems etc. (below, “movements of people”) is counted on to be used in a variety of fields.

The NILIM is researching the possibility of applying diverse movements of people to transportation planning by developin a platform capable of collecting and analyzing such information<sup>1)</sup>. This paper reports on the results of a verification of the possibility of applying diverse movement of people to transportation planning through combinational analysis of this information and future prospects.

### 2. Trial of combinational analysis

This research performed features analysis of diverse movement of people and abstraction of usage scenes in the transportation field, verifying that it is possible to apply diverse movements of people to each usage scene based on a case study of combinational analysis<sup>2)</sup>. The following introduces examples of the results of a case study of combinational analysis that clarifies the actual state of public transportation services.

In order to promote the use of public transportation by making it more convenient, it is important to provide public transportation adapted to the residents’ needs. The figure shows an image of the abstraction of latent demand for public transportation. As one application of this combinational analysis, superimposing the flow of people in mesh form obtained from cell phones and actual bus usage by route, by bus-stop, and by time period obtained from transportation system IC cards etc., we succeeded in clarifying the actual movement before and after boarding/alighting from busses at bus-stops in addition to the state of boarding/alighting at each bus-stop (figure on left). By comparing this with population distribution by mesh based on the national census and

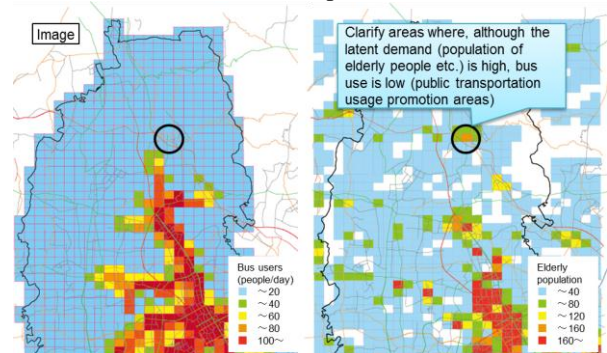
the Basic Residents Register, it was possible to clarify areas where, although the latent demand (population of elderly people etc.) is high, bus use is low (public transportation usage promotion areas). (Fig. on right)

It can be said, that in this way, combinational analysis of multiple movements of people can analyze or visualize the state of transportation, which is difficult to do with only a single movement of people, so that it can be applied to transportation planning.

### 3. Future prospects

The results of the research were obtained through activities of the Tsukuba Mobility Traffic Research Committee<sup>3)</sup>. In the future, we will verify the combinational analysis of diverse movement sof people in the field and clarify the possibility of applying it to transportation planning.

Figure. Image of Abstraction of Latent Demand for Public Transportation



[Sources]

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