Research of the improvement of the efficiency and advancement of methods to investigate, analyze, and plan urban traffic using new technologies

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1. Background and objective of study

Research on the use of various types of big data and its application has been rapidly progressing in recent years in the field of urban traffic. Still, big data supplied by various businesses are assumed to contain some bias depending on user attributes. Thus, this study identifies the characteristics of different traffic-related big data through the comparison with person trip surveys (hereinafter "PT survey").

2. Data to be compared with

Among traffic-related big data, this study uses mobile phone base station operation data supplied by company A and GPS data supplied by company B and company C as the subjects and compares them with the PT survey conducted within the urban zone of Kumamoto in 2012.

3. Results of the comparison and examination and future perspectives

Figures 1 to 3 show the results of the comparison of the OD (origin-destination) volume among small zones between trips within the same area and trips to other areas. Yet, the data of company C were compared using the component ratio of the number of trips due to data characteristics. As a result, the study found different characteristics in the data of different companies, such as separation from the 45-degree line.
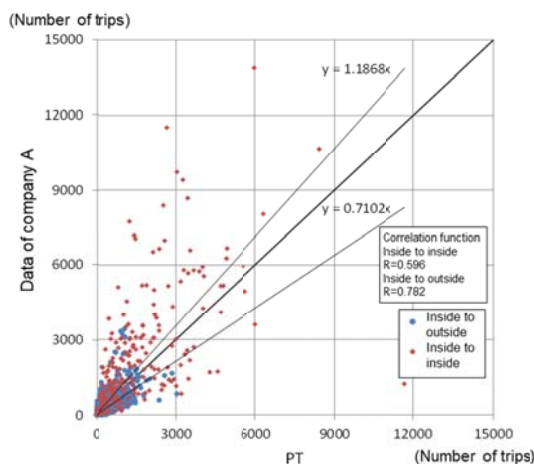
Upon the use of traffic-related big data, it is important to use such data based on an understanding of the characteristics. Thus, this study examines methods to use data based on this recognition.
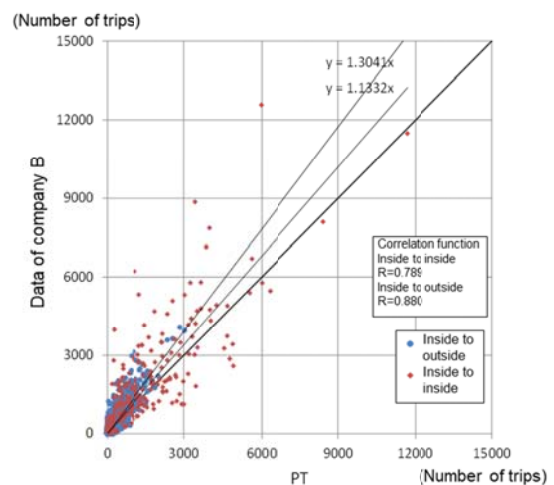

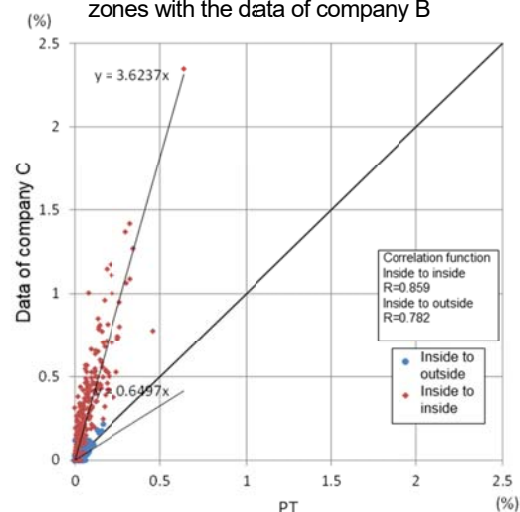Figure 2 Comparison of the OD volume among small zones with the data of company B

Figure 3 Comparison of the OD volume (ratio) among small zones with the data of company C

Figure 1 Comparison of the OD volume among small zones based in the data of company A

☞For more information

1) "Comparison and examination between person trip survey data and traffic-related big data" Urban Infrastructure Technology Promotion Conference, 30th Technological Research Presentation, Nov. 2018