

Extracting “Tour Themes” from Railway Usage Data of Foreign Visitors to Japan and Its Application to Policy Measures

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This study aims to obtain knowledge that can be used for railway operators' policy measures to improve convenience of foreign visitors' travel within Japan. Using station boarding and alighting data, we analyzed day-by-day use of railways by foreign visitors touring major cities in Japan. We assumed “tour themes” associated with combinations of stations, and attempted to extract various tour themes from a large data set using topic model. Given the characteristics of the station boarding and alighting data, we applied BTM (Biterm Topic Model), an effective topic model for short texts, to the actual data and extracted 30 tour themes. Moreover, we proposed possible policy measures by interpreting these 30 tour themes, as a case study. The results demonstrate that, based on the data, railway operators can consider policy measures to promote foreign visitors' tour within Japan and improve transportation planning.