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論文審査の要旨
Summary of Dissertation Review

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論　文　題　目　Title of Dissertation

Behavioral Analysis of Individual Mobilities Based on Life-oriented Approach

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〔論文審査の要旨〕Summary of Dissertation Review

Mobility has become an extremely important keyword for the twenty-first century and it has various implications to sustainable development at global, national, regional, urban and community scales. Focusing on individual mobilities, this study aims to present a set of new methodologies that can properly reflect interdependent decision-making mechanisms of different mobilities in the context of regional, urban and transport developments, to empirically confirm the usefulness of these methodologies, and to derive insightful cross-sectoral policy implications, in the context of Japan. Theoretically, this study follows the life-oriented approach, which argues behavioral interdependencies across life choices. Here, mobility refers to a change in life over time or across space. Four types of mobilities are targeted: (1) *temporal changes* of household expenditures related to young people's car ownership and usage, (2) domestic *migration*, (3) *changes in life caused by* use of smartphone applications, and (4) *locational changes* of household energy consumption.

Behaviorally, four types of mobility choice models are built: a multilinear utility based discrete-continuous choice model (for expenditure decision), a life-course choice model (for migration decision), a random forest approach (for changes in life choices), and a copula-based location-sensitive simultaneous-equation econometric model (for energy consumption). This study originally collected three sets of questionnaires surveys with a sample size of about 1,000 residents, respectively, and made an initial application of a longitudinal six-wave national survey covering 25 years (each wave (year) has about 5,000 – 9,000 households). Four case studies on the above mobilities were conducted in the contexts of transport and environment, migration and regional revitalization, smart society and urban life, and household energy consumption. Various behavioral insights into policy making of mobilities have been derived. It is concluded that copula-based multi-faceted life choices models with context-sensitive behavioral mechanisms could be a promising methodology for representing individual mobilities in association with economically, environmentally and socially sustainable development. All the above phenomenal focuses and applications as well as development of the above models are original and have significantly advanced

research on the life-oriented approach and mobilities.

The thesis consists of six chapters. Seven peer-reviewed papers were published: two SCI/SSCI-indexed journal papers, three book chapters and two papers in international conference proceedings. Furthermore, the student has just finished writing two more papers for SCI/SSCI-indexed journals.