

Integrated Projection Model of Regional Population and Households – Methodological Problems –

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This paper discusses methodological problems that make it difficult to project regional population and households simultaneously and dynamically. While a dynamic regional population projection model includes migration probabilities by origin and destination, a dynamic household projection model incorporates the transition between marital states and household positions. If migration and marital/household transitions were mutually independent, it would be possible to easily compile these probabilities into a transition matrix. However, the results of the Seventh National Survey on Household Changes conducted in 2014 show many examples of mutual dependence between two behaviors. Examples include the relationship between migration and first marriage, between migration and marriage dissolution, and the asymmetry between urban and rural migration during the first marriage.

Another problem is the regional difference in missing values in the census and vital statistics. For example, the Tokyo metropolitan area and Okinawa prefecture exhibit very different magnitudes and age patterns regarding "unknown" marital states. Furthermore, the comparison of age-specific first marriage rates between Tokyo and Okinawa highlights the difficulty in applying the proportional hazard approach.

The final problem is the regional difference in household formation and dissolution behavior. For example, the probability of leaving the parental household is lower in a metropolitan area than in a rural area. The probability of co-residing with parents after marriage is the highest in the Tohoku and Hokuriku regions. Although such patterns are well known, it is difficult to obtain the sex- and age-specific probabilities empirically for every prefecture.