

Demographic Decomposition of Population Growth Rates by Prefectures in Japan: 1950-2020

(2) Decomposition by Time Period and Analysis of Population by Age Groups

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This study decomposes the population growth rates of the population by age group by prefecture in Japan into four demographic factors: age structure, fertility, mortality and migration. We performed the factor decomposition for the period from 1950 to 2020; this period was then divided into five scenarios. We evaluate the contributions of these factors to the population growth rates of the prefectures using the method of Bongaarts and Bulatao (1999).

As a result of the analysis, first, the analysis with the year 2020 added confirmed the steady decline of the population, with all prefectures except Okinawa Prefecture showing a negative age structure. Second, the population growth rate for the period 1950-2020 was divided into five periods characterized by population growth, and the results showed that the age structure factors, the mortality factors and the fertility factors had higher contributions in the more recent periods. On the other hand, the migration factor showed a higher contribution in the 1960s and 1970s, when migration from non-metropolitan areas to the three major metropolitan areas was more pronounced, and gradually declined thereafter. Thirdly, the distribution of the contribution of demographic factors to the population growth rate between 1950 and 2020 by age group shows that the contribution of age structure, mortality and fertility factors is higher for younger age groups. Finally, the age-specific contributions of the mortality and migration factors were examined by cohort, and a mortality transition process was observed in which the contribution of the mortality factor was high in the 0-4 age group for the cohort born in the 1950s-1970s and gradually increased after the 40s. For the migration factor, the three major metropolitan areas showed a large positive contribution from the late teens to the early 20s and a negative contribution from the late 20s to the 30s, indicating an age-specific contribution.

keywords: demographic transition of prefectures, population growth rates, decomposition method, contributions of demographic factors