

Comparative Study of Urban Structure between an Island-Type and a General-Type City

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Abstract : Japan's aging population is increasing due to the decrease in birthrate. It causes various problems like the decrease in the gross domestic product of the country. The reason is why the local government of Japan has been on the way to a sustainable city recently. Then it is essential to get control of an urban structure to make the compact city successful. There are many kinds of paper about the compact city; however, the paper about a compact city of the island-type city is less. The purpose of this study is to clarify difference of urban structure between an island-type and a general city type. The method which has conducted in this research has two steps. First of all, by using evaluation indexes in the handbook, we evaluated the urban structures among each same -population-class cities from 50,000 to 100,000 people. Next, to clear the difference about the urban structure and feature between island-type and general-type cities compare the radar chart which is composed with each evaluation indexes of urban structure. Moreover, in order to clarify the relationship between evaluation indexes and the place of residence by using GIS software to show up population density on the map. As a result of this research, the management of local government and the local economy in evaluation indexes are indicated to be negative point in comparison of island-type cities with general cities. However, evaluation indexes of safety/security and low-carbon/energy are proved to be positive point. The research to find the difference features of the island-type of urban structure proves that the management of local government or the local economy is negative point in these island-type cities. In addition, the public transportation coverage in Miyako Island, Sado Island, and Amakusa Island show low value compare with other islands and average value. Relationship between evaluation indexes of an urban structure and the place of residence prove that the place of residence is related to public transportation coverage. If the place of residence is spread out, the public transportation coverage will be decreased. The results of this research reveal that the finances in island-type cities are negative point compare to general cities. This problem is caused by declining population. In addition, the place of residence is related to the public transportation coverage. Even though, it needs a much money to increase the public transportation coverage. It is possibly to cause other problems furthermore the aspect of finance is influenced by that as well. The conclusion in this research suggests that it is important for creating the compact city in island-type cities that we first need to address solving the problems about the management of local government and the local economy.

Keywords : sustainable city, comparative analysis, geographic information system, urban structure

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