

Analysis of the Economic Value of the Urban Residential Environment: A Case Study of Kobe

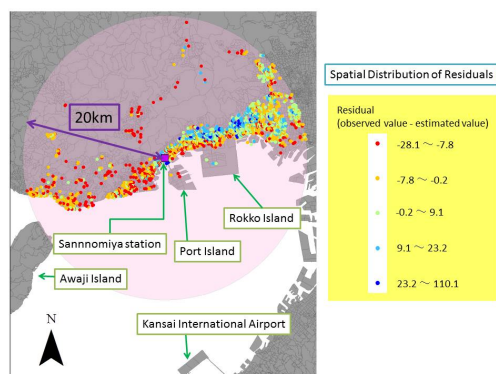
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In recent years, increasing attention has been paid to conserve and improve good living environments in Japan; for example, the Landscape Law was implemented in 2005. In this paper, we attempt to examine the economic value of the urban residential environment, taking into account the urban landscape and regional characteristics that are considered difficult for quantitative evaluation. To do so, we employ the hedonic approach that is based on the capitalization hypothesis that environmental benefits are capitalized into land rents. The variables of our particular interests are green visibility and regional brand, which have rarely been addressed in previous research.

The study area is Kobe, which was accredited as a design city by UNESCO in 2008. Depending on the available variables, different hedonic models were estimated for the Kobe central area (within 3,500 meters of Sannomiya station that is considered the city center), Kobe City, and Kobe broad area (within 20 kilometers of Sannomiya station). In the hedonic models, the dependent variable is the price of mansion per square meter and the independent variables are the residential characteristics including the two variables of interest: green visibility ratio and dummy of very affluent area (the latter is used as the proxy for regional brand). The data on the mansions are from the 2009 condominium data sets provided by the RITS Research Institute. We created the aforementioned two variables of interest by ourselves as follows. The green visibility ratio was calculated by the grid method, using eight photos taken for each mansion in the Kobe central area in August 2010. The dummy of very affluent area was created using the G-codes of Cameo Japan provided by GMAP Consulting. Besides the hedonic approach, we took a different approach (hereafter, the potential approach) to examine the presence of regional brand. In this approach, we examine the spatial distribution of the residuals (the differences between the actual and predicted values) of mansion prices based on the estimated regression model where the dependent variable is the price of mansion per square meter and the independent variables are those selected using the stepwise method from among the commonly used variables in hedonic analysis.

The results from the hedonic models indicate that green visibility ratio has a small and insignificant effect on the mansion price, but that very affluent area is significantly associated with higher mansion price. The results from the potential approach show that areas with clusters of mansions with high residual values overlap with areas that are considered to have regional brand, including Ashiya, Ashiyagawa, Mikage, Okamoto, Sannomiya, and Syukugawa in Hyogo Prefecture (Figure). Further, these areas correspond to the rankings of desired residential areas investigated by private research companies. Future work will entail the refinement of the methods to examine the value of regional brand and the applications of the methods to areas other than the Kobe area.



Keywords: hedonic analysis, residential environment, green visibility ratio, Kobe