

Master of Science in Policy and
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Consultations, Lectures, and Collaborative Research ThemesAnalysis of diffusion and accumulation of urban areas in local cities and
Improve logistics efficiency by utilizing local ports**e-mail address**

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Main research themes and their characteristics**「Accumulation and diffusion of urban areas in local cities」**

In local cities in Japan, it is said that the population density has declined and the urban area has expanded due to the diffusion of residential areas and the advent of commercial facilities in the suburbs due to the dissemination of car use. However, existing research and analysis data are limited to understanding the population density and DID population of the city, and there is not enough perspective to understand the overall image based on the topographical and spatial characteristics of each city. As the city itself is expected to shrink in the future, reorganizing the urban area compactly will realize policy effects, such as improving productivity by reducing travel time, giving elderly and children opportunities to move by enhancing public transport services, maintaining sustainable urban management, conserving environment, and diminishing energy loads. But it is necessary to analyze the current situation appropriately. Therefore, in this study, we estimate the population density function using regional mesh data to analyze the time series changes and comparative analysis between cities of the accumulation and diffusion of urban areas in each local city. Regarding the population density function, since Clark (1951), the population distribution of cities has been analyzed by various function types, but in Japan, there are many analyzes targeting metropolitan areas. On the other hand, in this study, the population density function is estimated for local cities based on the institutional differences in urban planning, for example, the differences in the development status of urbanized areas and rural areas. An analysis of the population distribution of Toyama City showed that urban areas tended to spread from 2005 to 2010, but they tended to accumulate to 2015. We confirmed that the compact city policy promoted by Toyama City is effective.

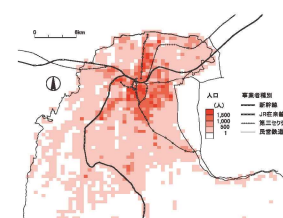


Fig.1 Population density in Toyama city (2015)

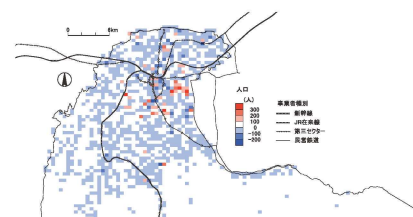


Fig.2 Changes in population density in Toyama City (the number of changes from 2010 to 2015)

「Streamlining logistics utilizing local ports」

On the roads around major ports such as Keihin Ports and Hanshin Ports, congestion is common and frequent delays in import and export freight, which hinders smooth logistics. Therefore, avoiding land transportation around the major ports, and for cargo departing and arriving in the local area, loading and unloading at the neighboring local ports by the feeder route from the main ports, or directly importing and exporting from overseas to the local ports. The use of local ports is considered as one of the means for improving the efficiency of logistics in Japan. However, from the viewpoint of the shipper company, there are restrictions on the use of regional ports because the convenience of logistics services around the ports is low compared to the main ports, such as the frequency of port calls and the number of routes, the lack of CIQ facilities and cargo handling equipment. On the other hand, for shipping companies, it is difficult to increase the frequency of port calls and the number of shipping routes because the population and industrial clusters in the hinterland are small and the collection volume is limited. Based on these issues facing local ports, we analyze what conditions are necessary to utilize local ports in streamlining logistics.



Fig.3 The congestion of container terminals at Keihin Ports and frequent congestion on surrounding roads

Major academic publications

Tomonori Kondo "The Analysis on Yard-stick Competition in Electricity Industry –Does Regulation Make Firms Inefficient?–", The Waseda Commercial Review, No.378(1998)107-131.

Takashi Namba, Masayuki Doi, Tomonori Kondo "Improvement Programs of Logistics Efficiency in the North Kanto Region in Use of the Port of Hitachinaka" Journal of Japan Logistics Society, No.9(2001)77-84.

"Economics of Ports and Areas" Supervised by Shinichi Ichimura, Edited by Masayuki Doi, Taga Publishing (2003), Chapter 1 Section 2 Writing