A Geographical Study on Changes of
Modern River Transportation in the Yodo River Basin:
A Case Study with a Historical GIS Database

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This thesis aims to examine the applicability of geographical approaches to the studies of modern river transportation. By using Historical Geographic Information System (HGIS) as a tool for more accurate analyses, therefore, this thesis investigates how the river transportation in the Yodo River Basin changed from 1889 to 1937. The study reveals its changes by analyzing spatiotemporal distribution of ships, river ports, and regional differences in terms of prosperity and decline.

The research outcomes can be summarized in the following three points:

First, the river transportation can be divided into four phases in terms of prosperity and decline, as follows:

Phase I: The river transportation was in a development phase.

Phase II: The railroads were complementing, substituting for, and competing with the river transportation.

Phase III: The river transportation was stagnating.

Phase IV: The river transportation continued, based on the main ports and Osaka City.

Second, this thesis argues that the river transportation had bases in the upper, middle, and lower reaches respectively, whose close network contributed to the survival of the river transportation to the early Showa era, despite changes in types of ships it had to go through in the modern times.

Third, this thesis proves the validity of HGIS by analyzing time-space in three different scales of region, town, and port. The research results demonstrate the importance of multi-scale analysis—analysis of national, basinal and local levels—for the study of river transportation.

In conclusion, the thesis could elucidate the prosperity and decline of the river transportation in the Yodo River Basin in the modern times, as well as proves the validity of HGIS approaches to its studies.