



## Abstract

# A Basic Study on the Database for Local Investment Appraisal System Using a GIS

According to Gyeonggi investment appraisal system, more than 250 new local financial investment projects are reviewed annually. Most of these projects are newly reviewed, but some are projects that changed the plan to be reintroduced after they had been previously suspended for a second review. If there are similar projects that are previously reviewed, it is necessary to revisit the preliminary evaluation standard. Otherwise, problems of consistency and duplication of reviews between projects may arise.

Therefore, this study aims to build a preliminary investment appraisal system Database(DB) associated with a geographic information system(GIS) to easily grasp the current status of investment review in the study area and improve the consistency and objectivity of the review. The advantage of linking the DB and the GIS is to easily figure out the current status of the projects that have been reviewed in nearby areas by checking on the project location on a map.

This study was conducted on the appraisal of preliminary investment project requested in the third periodic in 2019. First, case studies and literature on the local government investment appraisal system have been reviewed. Next, preliminary review DB data was collected followed

by construction of location information. Lastly, DB system based on GIS, utilization plan and monitoring system were constructed.

Gyeonggi Public Investment Management Center(GIMAC) was established in 2018, and has been in charge of preliminary review of investment for local financial projects in Gyeonggi Province since 2019. In 2019, a total of 255 preliminary reviews for investment review were conducted, with 50 re-examination or re-approval projects, accounting for about 20% of all projects. As some projects are reviewed as new projects even though they are re-introduced ones, which can be a concern as the reason for reconsideration may be missing.

The local public investment management center in Seoul and Gyeongnam have also built and managed the project DB including the local government investment appraisal system. However, these DB are not managed in connection with GIS. social overhead capital(SOC) investment project management systems with GIS include the Korea Transport Institute(2016) and the Korea Research Institute for Human Settlements(2019), and both of the cases are intended to prevent previously reviewed or ongoing projects from being left out when reviewing new investment projects.

In this study, the process of DB creation using a GIS is divided into three step. In the 1st step, basic work necessary for system construction was performed through data collection and business type classification. In the 2nd step, spatial data and attribute data including business location information were constructed. For the DB fields necessary for constructing attribute data, the cases of Korea Transport Institute (2016) and Seoul Institute (2018) were referenced. Finally, in the 3rd step, a user-friendly visualization was performed by linking the constructed spatial data and attribute data with a base map.

In this study, we tried to support efficient and systematic preliminary

review of local financial projects by linking the investment appraisal system DB with the GIS. However, since this study has the basic research, it is necessary to supplement and expand the system so that it becomes user-friendly, convenient, and versatile in the future. Although the basic directions were suggested for such as business type classification, configuration of attribute information data fields, data input and visualization. it will be necessary to improve the system screen composition and user interface so that users who are not familiar with GIS can easily use the time and cost required for DB construction. In addition, in the long run, it will be possible to expand the scope of use by combining with various subject maps in addition to searching and monitoring existing projects.

Lastly, no matter how well the DB system is initially constructed, it is necessary to build a system that continuously manages and maintains the data, as utility decreases if the data is not continuously updated or well managed during the operation stage.