

THE USE OF SPATIAL BIG DATA TO SUPPORT TERRITORIAL POLICIES

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Abstract

The advancement and the spread of information and communication technology (ICT) changes the way we live and act. Computers and ICT devices become smaller and invisible, and they are now virtually everywhere in the world. Most socio-economic activities are now subject to the use of Computers and ICT devices although we don't really recognise it due to the pervasive computing technologies. Nevertheless, the activities supported by digital devices leave digital records, and a myriads of these records becomes what is called 'big data'.

Big data differ from conventional data we have collected and managed in that it holds detailed information of people's lives and activities. Thus, they offer new insight for our society and hence new opportunity for innovation. Not surprisingly, experts and scholars forecast that the big data will transform various socio-economic activities as well as our societies.

The goals of this research are twofold. Firstly, it aims to understand the nature and characteristics of spatial big data. Then it seeks to suggest ways of utilising such spatial big data for planning support. In this regards, this study defines the concepts of "integrated spatial big data analysis and application system" which consists of modules and techniques for the visualisation, analysis, and simulation of spatial big data. To achieve these goals, this study conducts an experimental case study for the Seoul Metropolitan Area and Jeju Island. We obtained and analysed energy usage data, mobile phone data, and credit card usage data

for these area. The research concludes with future studies and policy measures to promote the use of spatial big data in the territorial and urban planning fields.

Yet, this research is subject to further development. First of all, we need to understand where and in what form the big data is available. Next, it is also necessary to develop analytical methods for various types of big data. Then we need to find the application area for big data. It is still an open question how we can use big data for planning support.