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The Development of User Behavior in Urban Regeneration Areas by Utilizing the Floating Population Data

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Abstract : A lot of urban problems, caused by urbanization and industrialization, have occurred around the world. In particular, the creation of satellite towns, which was attributed to the explicit expansion of the city, has led to the traffic problems and the hollowization of old towns, raising the necessity of urban regeneration in old towns along with the aging of existing urban infrastructure. To select urban regeneration priority regions for the strategic execution of urban regeneration in Korea, the number of population, the number of businesses, and deterioration degree were chosen as standards. Existing standards had a limit in coping with solving urban problems fundamentally and rapidly changing reality. Therefore, it was necessary to add new indicators that can reflect the decline in relevant cities and conditions. In this regard, this study selected Busan Metropolitan City, Korea as the target area as a leading city, where urban regeneration such as an international port city has been activated like Yokohama, Japan. Prior to setting the urban regeneration priority region, the conditions of reality should be reflected because uniform and uncharacterized projects have been implemented without a quantitative analysis about population behavior within the region. For this reason, this study conducted a characterization analysis and type classification, based on the user behaviors by using representative floating population of the big data, which is a hot issue all over the society in recent days. The target areas were analyzed in this study. While 23 regions were classified as three types in existing Busan Metropolitan City urban regeneration priority region, 23 regions were classified as four types in existing Busan Metropolitan City urban regeneration priority region in terms of the type classification on the basis of user behaviors. Four types were classified as follows; type (I) of young people - morning type, Type (Ⅱ) of the old and middle-aged- general type with sharp floating population, type (Ⅲ) of the old and middle aged-24hour-type, and type (Ⅳ) of the old and middle aged with less floating population. Characteristics were shown in each region of four types, and the study results of user behaviors were different from those of existing urban regeneration priority region. According to the results, in type (I) young people were the majority around the existing old built-up area, where floating population at dawn is four times more than in other areas. In Type (Ⅱ), there were many old and middle-aged people around the existing built-up area and general neighborhoods, where the average floating population was more than in other areas due to commuting, while in type (Ⅲ), there was no change in the floating population throughout 24 hours, although there were many old and middle aged people in population around the existing general neighborhoods. Type (Ⅳ) includes existing economy-based type, central built-up area type, and general neighborhood type, where old and middle aged people were the majority as a general type of commuting with less floating population. Unlike existing urban regeneration priority region, these types were sub-divided according to types, and in this study, approach methods and basic orientations of urban regeneration were set to reflect the reality to a certain degree including the indicators of effective floating population to identify the dynamic activity of urban areas and existing regeneration priority areas in connection with urban regeneration projects by regions. Therefore, it is possible to make effective urban plans through offering the substantial ground by utilizing scientific and quantitative data. To induce more realistic and effective regeneration projects, the regeneration projects tailored to the present local conditions should be developed by reflecting the present conditions on the formulation of urban regeneration strategic plans.

Keywords : floating population, big data, urban regeneration, urban regeneration priority region, type classification
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