

# 맞춤형 공간전략 도출을 위한 인구감소지역 진단체계 연구: ‘현안 체크리스트’와 ‘지역 Space-MBTI’의 개발과 적용

A Study on a Diagnostic System for Population Decline Areas to Develop Customized Spatial Strategies

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With the increasing demand for social and policy measures to address population decline and local extinction crisis, support policies for population decline areas have expanded since 2017, primarily under the leadership of the Ministry of the Interior and Safety. In November 2021, the Ministry of the Interior and Safety designated 89 areas as population decline areas based on the Population Decline Index. In December of the same year, Articles 22 through 29 were newly established in the "Local Autonomy Finance Management Act," introducing the "Fund to Respond to Local Extinction" to be supported by the central government for the years 2022 to 2023. However, the current Fund to Respond to Local Extinction faces challenges in providing strategic responses tailored to the specific characteristics of each region, mainly due to limitations in objective, specialized analysis of regional issues, insufficient spatial planning guidelines, and underdeveloped support systems. As a result, this hinders the appropriateness, diversity, and practicality of regional projects and makes it difficult to carry out differentiated projects that reflect regional conditions and spatial characteristics. In this context, this study aims to grasp the current issues in population decline areas arising from the existing urban structure centered on quantitative growth and population and

social changes. It also seeks to develop a regional diagnostic system for effective urban management. Furthermore, the study intends to propose policy directions and institutional improvements suitable for regional characteristics to address regional depopulation and promote regional revitalization. To achieve these objectives, we will conduct the research through the following two research questions.

Research question 1: What are the characteristics of current issues in population decline areas and projects to respond to local extinction?

Research question 2 : What methods can be employed to customize the diagnosis of current issues and characteristics in population decline areas?

The spatial scope of this study includes 89 local government units designated as population decline areas and 15 metropolitan local government units. Specifically, the study will pilot the diagnostic tools proposed within this research in 12 population decline areas located in Gangwon Province. In terms of content scope, the study provides recommendations concerning investment plans for the Fund to Respond to Local Extinction for the years 2022 and 2023, as well as policies and measures that can be linked to the Fund to Respond to Local Extinction for all 89 local government units and 15 metropolitan local government units. The research methodology involves a multidimensional analysis of quantitative data (regional statistics) and qualitative data (expert opinion surveys) through a mixed-method analysis. Qualitative data analysis is conducted by coding and text mining using NVivo12, while quantitative data analysis involves cluster analysis using SPSS.

Research question 1: What are the characteristics of current issues in population decline areas and projects to respond to local extinction?

In order to understand the current issues in population decline areas, it is essential to look beyond the mere aspect of population decline and consider all the direct and indirect impacts it has on the region. In this study, to address this, the opinions of 15 experts in the fields of architecture and urban planning were gathered to identify the current issues in population decline areas from both a human and spatial perspective. From a human perspective, six major issues (along with 17 sub-issues) were identified,

including a decrease in the working-age population, a society characterized by low birth rates and an aging population, exclusive local communities, demographic and social imbalances, inadequate educational and childcare environments, and other related concerns. These issues highlight the imbalances in various aspects, such as the economy, society, and education, resulting from overall population decline. From a spatial perspective, six primary issues (along with 22 sub-issues) were identified, including physical environmental deterioration, a decline in quality of life infrastructure and services, inefficiencies in urban administration, a lack of community cohesion, reduced mobility, and other related concerns. It appears that the most significant problem stems from the overall physical environment and the consequent deterioration in infrastructure and service quality. These human and spatial issues faced by population decline areas are complex and interrelated, emphasizing the need to develop strategic responses to address these problems effectively.

In line with this, expert opinions were collected to derive 35 spatial strategies across eight sectors. The goal was to analyze the characteristics of the investment projects funded by the Fund to Respond to Local Extinction currently being undertaken in population decline areas. The derived strategies can be categorized as follows. 1. Creating Hubs and Restructuring, 2. Establishing an Economic Activity Base, 3. Expanding the Population for Daily Life and Settlement, 4. Improving Infrastructure and Services, 5. Providing Specialized Housing and Environmental Enhancement, 6. Regional Specialization Projects, 7. Enhancing Spatial Identity and 8. Promoting Integrated Policies.

According to these strategies, the 466 projects from the 89 population decline areas (basic accounts) for the years 2022 and 2023 were classified. Analyzing the projects based on the results, the top-ranked projects submitted by the 89 population decline areas were related to '4. Improving Infrastructure and Services,' '3. Expanding the Population for Daily Life and Settlement,' '6. Regional Specialization Projects,' '2. Establishing an Economic Activity Base,' '5. Providing Specialized Housing and Environmental Enhancement,' '7. Enhancing Spatial Identity,' '8. Promoting Integrated Policies,' and '1. Creating Hubs and Restructuring.' Furthermore, when looking at the project rankings, the top-priority projects were heavily focused on '4. Infrastructure and Service Improvement' and '2. Establishing an Economic Activity Base.' Second-priority projects were primarily related to 'Tourism Specialization,' followed by 'Providing

Specialized Housing for In-Migration' and 'Job Creation and Entrepreneurial Spaces.' For the third-priority projects, there was a relatively high emphasis on '3. Expanding the Population for Daily Life and Settlement.' This analysis reveals that many regions are actively working on improving infrastructure and services, attracting population inflow and pursuing regional specialization and economic activity base projects. Notably, they prioritize infrastructure and job creation projects as their top choices, while spatial identity enhancement projects and service program support tend to rank lower.

In the analysis of 231 projects from the 15 metropolitan local government units (metropolitan accounts), the projects were classified as related to '4. Infrastructure and Service Improvement,' '3. Expanding the Population for Daily Life and Settlement,' '2. Establishing an Economic Activity Base,' '5. Providing Specialized Housing and Environmental Enhancement,' '6. Regional Specialization Projects,' '7. Enhancing Spatial Identity,' and '8. Promoting Integrated Policies.' This suggests that the metropolitan accounts prioritize efforts to attract a resident population and allocate projects to support daily life infrastructure and services. Analyzing the projects based on their rankings, the top-priority projects were focused on '2. Establishing an Economic Activity Base' and '4. Infrastructure and Service Improvement.' Second-priority projects had a high emphasis on '4. Improving Infrastructure and Services,' '2. Establishing an Economic Activity Base,' '5. Providing Specialized Housing and Environmental Enhancement,' while third-priority projects showed a significant emphasis on '2. Establishing an Economic Activity Base.' In comparison, the metropolitan accounts placed a relatively higher importance on strategies related to establishing an economic activity base and attracting a population compared to the basic accounts. However, the emphasis on regional specialization projects was lower, and they ranked lower in priority in the metropolitan accounts.

To sum it up, both basic and metropolitan areas prioritized strategies related to infrastructure improvement, establishing an economic activity base, and attracting a population. This signifies the importance of these strategies in both basic and metropolitan areas. However, the lack of differentiation in projects between basic and metropolitan areas and among different regions indicates the need for a more comprehensive understanding of regional conditions, synergies with neighboring areas, and distinctiveness compared to other regions. This issue arises from a lack of information on the current regional situation and the characteristics of the adjacent

areas, which serves as the foundation for formulating differentiated responses for each region. To enable a fair evaluation of investment plans in the future, a diagnostic system for comparable current issues and regional characteristics is required.

Research question 2 : What methods can be employed to customize the diagnosis of current issues and characteristics in population decline areas?

In order to enhance the effectiveness and efficiency of investment projects for addressing local extinction, it is crucial to accurately analyze and assess the current issues and characteristics of population decline areas. However, the current evaluation methods for investment plans have limitations in terms of assessing the distinctiveness of these areas and the severity of the crisis compared to other regions. Therefore, it is worth considering the application of a diagnostic system for comparable current issues and regional characteristics that can be used in the evaluation of investment plans. To address this, this study has developed regional diagnostic tools for both quantitative and qualitative analysis of the current issues and characteristics of population decline areas. The regional diagnostic tools consist of a Regional Issue Checklist and a Regional Identity Self-Diagnostic Tool.

The Regional Issue Checklist is designed to quantitatively analyze the current issues in various aspects of the region, including population-related, spatial, economic, and social aspects. It was developed by collecting indicators related to issues involving people and places through expert opinions. The tool is divided into sections covering population (population changes, population composition, demographic characteristics), space (spatial structure, living environment, urban infrastructure, educational infrastructure, cultural and welfare infrastructure, safety), and economic, social, and administrative aspects (employment, businesses, quality of life, social services, administration). Quantitative data was collected and used to rank indicators based on their positive impact on population change. The tool calculates the percentage ranking for each indicator, with lower percentages indicating a negative impact and higher percentages signifying relative strengths compared to other regions. This enables each local government to understand their current status, strengths, and weaknesses in each section, allowing for comparison and analysis in relation to other regions.

Furthermore, in addition to the Issue Checklist, a diagnostic tool called the "Regional Space-MBTI (Municipal Base Type Indicator)" was developed for self-diagnosing regional identity. This diagnostic tool is designed to stimulate local stakeholders to perceive and participate in planning. It goes beyond quantitative analysis, allowing for the exploration of the decline and potential of the region from various perspectives. The diagnostic tool consists of 120 questions, and each question is categorized into four main categories. These categories are assessed based on their social and economic influence and divided as followings. ① Energy, ② Position, characteristics of physical environment, ③ Value which is closely related to local identity and features and ④ Lifestyle. ① Energy was divided into E (Externality) or I (Internality) depending on the share of visiting population (e.g. tourists). ② Position was divided depending on the presence of natural elements or urban structure. ③ Value is divided depending on whether the area is more related to tradition or area focuses on future values. ④ Lifestyle was divided into temporary area where temporary energy or share of seasonal activities is high and journey area characterized by routine style. By structuring these categories and attributes, a total of 16 distinct regional types are derived. This allows for a diagnostic assessment of the identity and values associated with each regional type, as perceived by the members of the community.

The diagnostic tool developed was pilot-tested on 12 depopulation areas in Gangwon Province, and a comparison was made with the investment plans submitted by each region for 2022 and 2023. This process aimed to evaluate the necessity of regional diagnostics and the direction for tailored regional planning. The results revealed that there were both common attributes applicable to the entire Gangwon Province region and unique characteristics specific to each area. Taking these similarities and specificities into account when implementing investment projects is expected to enhance the execution of these projects.

Efforts to address local extinction need further development. It is essential to actively diagnose and incorporate the current issues, potential, and identity of regions from both the people and places perspectives. By doing so, region-specific spatial strategies can be formulated. The diagnostic tools proposed in this study can provide an objective comparison and analysis of local issues, enabling reliable judgments about the current situation and contribute to the development of project plans tailored to the population decline types specific to each region. Furthermore, it is hoped that these tools can serve

as a means to untangle the complex threads contributing to the concerns of depopulation areas regarding local extinction.

**Keywords :**

Population Decline Area, Local Extinction, Fund to Respond to Local Extinction, Spatial strategy, Regional Characteristics Diagnostic Tool