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The Study on the Factors for Target Region Selection of Support Projects in Underdeveloped Areas

– Focusing on local government conditions –

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Abstract

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All citizens have the right to live in a good environment, and the state should create an environment in which people can maintain a minimum quality of life and lead a humane life. To fulfill these obligations, the state is pushing for various projects to support underdeveloped areas to improve the poor living environment and revitalize the local community. Support projects for underdeveloped areas, which are distributed and promoted by various administrative agencies, are commonly targeted at areas where the physical environment is weak, threatening the safety and hygiene of residents, and poor economic conditions. Although it is not a large project, these projects are receiving positive reviews for their project design based on the demand of residents and their visible performance over a short period.

Despite the positive evaluation, problems have been pointed out regarding the process of selecting a project target area. This is because the selection method of target areas is not a top-down method for underdeveloped areas that do not meet certain standards, but a bottom-up method when local governments that claim to need support apply for support projects. This local government public offering method seems to be a fair system that

provides opportunities equally to all regions, but it is difficult to say that fair competition is achieved due to limitations in the selection process and procedure. As a result, in some cases, areas that are difficult to classify as underdeveloped areas themselves or do not meet the criteria for selecting projects even if they are underdeveloped are selected.

Therefore, this thesis analyzed the effects of the physical or socioeconomic environment of the region, the capabilities of basic local governments applying for the public offering, and the political and social surroundings in determining whether to select the target area for the underdeveloped area support project. First of all, this thesis attempted to verify whether the existing target area selection criteria were working effectively. In addition, by identifying factors that affect other than the selection criteria, it was intended to derive implications that could increase the validity of the method of selecting target areas of the support project.

To analyze this, the dependent variable was set as whether it was selected as a target area for the underdeveloped area support project in the public offering procedure, and the independent variable was divided into demand factors, local government capability factors, and surrounding conditions factors. First, as a physical environmental factor, the ratio of old houses, the ration of empty houses, the water supply installation ratio, the and sewage installation ratio were applied, and the ratio of the elderly population and GRDP per capita were applied as socioeconomic environmental factors. Second, the size of the local government personnel, the size of local government expenditure budget, and the degree of financial independence were set as capability factors. Third, the number of universities, the number of non-profit private organizations, and the number of lawmakers elected were applied as factors of surrounding conditions. For analysis, the relationship between independent and dependent variables was verified through binary logistic regression analysis using national approval statistics published through the Korean Statistical Information Service (KOSIS) and the National Balanced-Development Information

System (NABIS).

The analysis results are as follows. First, the ratio of old houses, the ration of empty houses, and the sewage installation ratio, which are stipulated as one of the physical indicators in the selection criteria for support projects in underdeveloped areas, are factors that influence the selection of target areas. However, contrary to predictions, the higher the sewage installation ratio, the higher the possibility of selecting the target area. Second, the water supply installation ratio is not currently included in the selection criteria for the target area, but is a factor that influences the determination of whether to select the target area. Third, the proportion of the elderly population is a factor that affects the selection of the target area, but contrary to predictions, the lower the proportion of the elderly population, the higher the possibility of selection. Fourth, the size of the workforce of basic local governments, that is, the number of public officials, is a factor that affects whether or not the target area is selected.

Through the research results, the following implications and policy implications could be derived.

First, it is necessary to further solidify the current selection criteria that use physical environment indicators as a key criterion for selecting target areas. This is because it was confirmed that some indicators included in the current selection criteria are functioning as effective indicators in the selection process of the target area. However, it is necessary to supplement the selection criteria in the direction of increasing the validity. It is possible to consider adding a water supply installation ratio to the current selection criteria, and removing or lowering the sewage installation ratio and the proportion of the elderly population. On the other hand, in the long run, it is necessary to deviate from the existing public offering method of the current project target area selection method. In other words, it is necessary for the state to comprehensively evaluate the vulnerable level of the region and convert it into a system that supports the establishment of project plans while giving opportunities to promote projects in underdeveloped areas. This is

because, in addition to the objective selection criteria, various exogenous factors that may affect the public offering review process can be blocked.

Second, it is necessary to simplify the public offering procedure and form so that the administrative or financial burden of basic local governments participating in the public offering of support projects can be reduced. This is because participating in the public offering process itself causes a considerable administrative burden on local governments and a financial burden in the preparation process. Simplification of procedures and forms is necessary not only to minimize the impact of local governments' capabilities on the selection of target areas, but also to minimize resources wasted in the selection process.

Third, it is necessary to strengthen the representation and independence of the review committee, which has the authority to make final decisions, to increase the validity of selecting areas subject to support projects for underdeveloped areas.

Fourth, there is a need for a control tower that can comprehensively manage support projects for underdeveloped areas distributed and implemented by various administrative agencies. If there is an institution that integrates and coordinates support projects in underdeveloped areas and manages them to achieve mutual synergy, it will not only reduce the burden on local governments, but also help to continuously maintain support projects and create results.

Keywords: Underdeveloped areas, Support projects for underdeveloped areas, Target region of projects, Selection factors, Public offering

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Table of Contents

List of Tables

List of Figures

Chapter 1. Introduction

1.1. Study Background

The government aims to create an environment in which all citizens maintain a minimum quality of life and individual citizens can lead a human life. (Commitee, 2022) To achieve these long-term national goals, the government is taking various policy approaches. As one of the direct support methods, financial support projects are being promoted to improve the weak living base of the region and create an economic development base for the local community, and these support projects are distributed and executed by various central administrative agencies.

Although the specific targets and support requirements of each support project are different, all support projects have a common point in that the areas with the weak physical environments, threatened by residents' hygiene and safety, and poor economic conditions are defined as support targets. The main contents of the project include improving the physical environmental conditions of underdeveloped areas, creating a foundation for continuously generating income, and improving the quality of life of local residents by supporting programs and convenience facilities for community recovery. These projects are often positively evaluated because they are designed based on the needs of local residents living in underdeveloped areas, and include direct physical environment improvement, economic activity opportunities such as local product development, and software support to strengthen solidarity among residents. Therefore, residents' satisfaction is higher than that of other regional development projects, and local governments are positively aware of it as a project that can achieve tangible results through small budget input.

Since the original purpose of the project is to create a living environment where the minimum quality of life can be maintained, it

is logically reasonable to have a top-down approach to implement projects by setting minimum environmental standards and investing finances sequentially in areas that do not meet these standards. In fact, for residential spaces, the state sets the "minimum housing standard," which is the minimum requirement for the size of houses and essential facilities. In addition, various housing welfare support projects are being promoted with the direct policy goal of reducing the number of households living in houses that do not meet the minimum housing standard. However, if you look at the actual process of the project to support underdeveloped areas, there is indeed a big gap from the top-down project promotion structure. This basically stems from the fact that what factors should be included in the living conditions of the region, which are essential for residents to maintain a minimum life, are too broad and ambiguous. In reality, it is very difficult for the state to establish a minimum environmental standard that can be applied to the entire country, and it is also difficult to grasp the local situation in detail even at the detailed village level. As a result, due to practical limitations, the central administrative agency that promotes the project selects the target area based on the project plan submitted by the local government and executes the budget. In other words, it means a bottom-up approach called the "public offering" method.

The process of implementing financial support projects for supporting underdeveloped areas is as follows. First, guidelines on support criteria are prepared to select regions to support the budget by administrative agencies (committees or ministries) that have the authority to execute the budget for project promotion. Second, the guidelines prepared in this way are disclosed to local governments that become support units through the public offering process. Third, local governments that intend to promote the project with budget support find areas suitable for the guidelines presented, prepare a project plan, and apply for a public offering to the relevant central administrative agency. Fourth, the institution selects and announces the target area through a pre-announced screening procedure, and finally supports the budget for the

selected area.

The target area of the support project is selected after reviewing the physical and environmental standards of the region to determine the vulnerability of the region and verify whether the project has conditions to achieve desirable results. In most support projects, these screening processes have procedural commonalities such as document screening, on-site evaluation, and deliberation by a separate selection review committee based on written applications submitted by local governments. The relevant institution in charge of the support project first receives a written application from the local government to determine whether the basic standards presented in the guidelines are met. For areas deemed to have met basic requirements, the contents of the written application are verified through on-site evaluation, and non-physical elements that are not easily revealed through application documents, such as the will of local residents, are identified. Finally, these evaluation data are used as basic data for the selection review committee separately composed of external experts in related fields. The administrative agency in charge of the public offering is striving to secure the validity and transparency of the selection process and increase independence by making the final target area through deliberation and decision by these committees.

At first glance, the public offering method, which is a bottom-up project promotion structure, seems to provide opportunities equally to all local governments. In fact, a number of target areas are selected through fair evaluation, and areas with suitable conditions for project promotion are selected. However, if you look at the finally determined target areas, many areas do not seem to meet the original purpose of the project due to limitations in the public offering process and procedures. Considering the original project purpose, underdeveloped areas with high urgency to improve living conditions even through financial input should be selected. However, many areas that do not seem to need support because it is difficult to classify themselves as underdeveloped areas, or areas that do not appear to meet the guidelines or

selection criteria originally announced even if they are somewhat underdeveloped are selected.

Some unreasonable consequences come for several reasons. This is because the public offering process involving local governments is a process that requires various resources and efforts from the preparation stage, the screening stage, and the final selection stage. Therefore, the results of project selection are often greatly influenced by the conditions and willingness of local governments to participate. In some areas with severe vulnerability, there are cases where it is not possible to even participate in the public offering process due to various obstacles.

First of all, the lower the vulnerability, the more difficult it is to discover project ideas and establish project plans because of the lack of human resources and economic foundations in the region. To establish a project plan, it is essential to analyze existing project cases and plan to prepare new project contents. At this time, NGO activists or faculty members of universities in the region participate as coordinators or activists, and in areas with poor human resources, there are often no competent local experts to play this role.

Second, since the subject of the application for the public offering is the basic local government, many aspects depend on the ability of the local government to implement the project and the possibility of success. In particular, the competence and experience of public officials in charge of supporting projects in underdeveloped areas act as the most important factors. In the case of small local governments, it is difficult to secure dedicated personnel only to support projects in underdeveloped areas, so the burden on public officials in charge has a significant impact on the quality of the project plan and the creation of project conditions in the local community. In addition, in most cases, it is not easy to receive assistance within the organization because most local governments themselves often lack experience in promoting projects. As a result, it is highly likely that they will not be able to actively participate in the public offering process or will have

difficulty preparing a substantial project plan. In fact, many local governments spend huge amounts of money to improve the quality of project plans and use professional consulting firms, which may cause local governments' financial capabilities to cause result in selection of target areas that are far from vulnerable.

In addition, the interest and willingness of the heads of local governments in underdeveloped areas to support projects can greatly determine whether to participate in the public offering or the quality of the project plan. On the other hand, in the process of selecting a target area at the village level for project application within the region, there is a tendency to prioritize areas with high residents' needs rather than actual vulnerability or to select regions to maximize local budgets. Even in areas with high vulnerability, if there is a possibility of future development or other financial support projects, they are excluded from areas subject to the public offering. In addition to the participation stage of the public offering, the selection results are frequently adjusted due to various external pressures or fairness between regions in the process of selecting areas for many other support projects

Most of the projects supporting underdeveloped areas select suitable target areas through public offering procedures for local governments and execute projects according to the purpose of the project. However, given the participation in the public offering process and the various factors and inherent limitations that may affect the entire process of public offering process, it is necessary to verify what factors affect the decision on whether to select a target area for areas where support projects are currently underway. Therefore, this study aims to find out what factors have an important influence on determining whether to select a target area for underdeveloped area support projects for local governments that participated in the public offering.

1.2. Purpose of Research

This study aims to examine the main factors that influence the selection of areas subject to the government's financial support project for underdeveloped areas. By analyzing local governments that participated in the public offering process for basic local governments, it is intended to identify the indicators that show the difference between the area determined as the final project target area and the area that was eliminated from the final selection.

Through this, first, it is verified whether indicators related to regional vulnerability play a key role in determining the area subject to the support project as originally intended.

Second, regardless of regional vulnerability, it identifies what factors are influencing the decision of the project target area. Based on this, I would like to present implications for improving the method of selecting a project in the future in a way that can alleviate or supplement the intervention of the factor throughout the public offering process.

Chapter 2. Institutional overview and Literature Reviews

2.1. Outline of support projects for underdeveloped areas

2.1.1. Basic System for Underdeveloped Areas: Growth promotion area

Underdeveloped areas refer to areas where residents' living standards are much lower than the national average and are isolated from other regions due to cultural and economic backwardness. (*Dictionary of land-use terms*, 2022) There is no current law that legally stipulates underdeveloped areas, but before the revision of the < Special Act on Balanced National Development > in 2009, the Act stipulated underdeveloped areas as follows.

- Remote areas under the < Land Development Promotion Act >
- Island subject to development under the < Island Development Promotion Act >
- Boundary areas under the < Boundary Area Support Act >
- Development promotion district under the < Act on Balanced Regional Development and Promotion of Local Small and Medium Enterprises >
- An area selected as an underdeveloped area with poor living conditions and significantly poor development level by comprehensively evaluating indicators such as the average annual population reduction rate, financial situation, and income level

As can be inferred from past legal regulations, the concept of underdeveloped areas is a relative concept that means areas with poor conditions due to a lack of growth compared to other regions. Since no clear physical standards are presented, it is not easy to determine which specific area is underdeveloped. Therefore, it is necessary to look at the current status of the system operating

based on similar concepts. The "growth promotion area" system, currently jointly operated by the Ministry of Government Administration and Security and the Ministry of Land, Infrastructure and Transport, can be seen as a similar system.

The growth promotion area refers to an area that requires special consideration in the construction of infrastructure necessary to promote social and economic growth due to poor living environment and poor development level announced under subparagraph 6 of Article 2 of the < Special Act on Balanced National Development >. It was first designated in 2009, and was re-designated and announced in 2014 and 2019. For 159 cities and counties excluding island areas, 70 are selected in the order of high vulnerability by comprehensively evaluating the average annual population change rate, income level, financial situation, and regional accessibility of each region.

The most recent growth promotion area announced in 2019 was selected by supplementing evaluation indicators to help improve the quality of life by providing more practical support to the area based on related laws. Four items were evaluated: population, income, finance, and accessibility, and the "GRDP" index representing regional economic vitality was added in the income sector, and the "Life SOC Accessibility" index was additionally supplemented in the accessibility sector to reflect the vulnerability of the region. About 210 billion won will be provided annually for the next five years to expand infrastructure in areas designated as growth promotion areas.

Table [1] 2019 Growth Promotion Area Evaluation Indicators

Item	Population	Income	Finance	Accessibility
Indicators	Population density, The annual rate of change in population	Local income tax, GRDP	Financial Power Index	Regional accessibility, Life SOC Accessibility

Source: Ministry of Land, Infrastructure and Transport Press Release

Table [2] Current status of growth promotion areas

Province	No.	Regional name
	70	
Gangwon-do	8	Hoengseong-gun, Samcheok-si, Taebaek-si, Yeongwol-gun, Pyeongchang-gun, Hongcheon-gun, Yangyang-gun, Jeongseon-gun
Chungcheongbuk-do	5	Okcheon-gun, Danyang-gun, Goesan-gun, Yeongdong-gun, Boeun-gun
Chungcheongnam-do	6	Yesan-gun, Buyeo-gun, Cheongyang-gun, Geumsan-gun, Seocheon-gun, Gongju-si
Jeollabuk-do	10	Namwon-si, Gimje-si, Jeongeup-si, Jinan-gun, Muju-gun, Jangsu-gun, Imsil-gun, Sunchang-gun, Gochang-gun, Buan-gun
Jeollanam-do	16	Damyang-gun, Gokseong-gun, Gurye-gun, Goheung-gun, Boseong-gun, Hwasun-gun, Jangheung-gun, Gangjin-gun, Haenam-gun, Hampyeong-gun, Jangseong-gun, Wando-gun, Jindo-gun, Sinan-gun, Yeonggwang-gun, and Yeongam-gun
Gyeongsangbuk-do	16	Sangju-si, Andong-si, Yeongcheon-si, Yeongju-si, Mungyeong-si, Gunwi-gun, Uiseong-gun, Cheongsong-gun, Yeongyang-gun, Yeongdeok-gun, Cheongdo-gun, Goryeong-gun, Seongju-gun, Bonghwa-gun, Uljin-gun, Ulleung-gun
Gyeongsangnam-do	9	Miryang-si, Uiryeong-gun, Goseong-gun, Namhae-gun, Hadong-gun, Sancheong-gun, Hamyang-gun, Geochang-gun, Hapcheon-gun

Source: Ministry of Land, Infrastructure and Transport Press Release

The Ministry of Public Administration and Security and the Ministry of Land, Infrastructure and Transport use the growth promotion area system by selecting support projects organized by each administrative agency, or by assigning or adjusting the amount of support.

2.1.2. Support projects for underdeveloped areas according to regional classification

Under the five-year national balanced development plan established under Article 4 of the < Special Act on Balanced National Development >, the government's support projects for underdeveloped areas include living conditions renovation project in vulnerable areas, rural vitality plus projects, and fishing village New Deal 300. (*Handbook of Balanced National Development Projects*, 2021)

Each support project is divided into the type of support project and the administrative agency in charge of it depending on whether the project area falls under the urban area under the < National Land Planning and Utilization Act >. Special cities, metropolitan cities, and cities or counties in provinces corresponding to urban areas are subject to living conditions renovation project in vulnerable urban areas along with urban readjustment projects and urban regeneration projects implemented to improve the general residential environment. On the other hand, rural areas and fishing villages, not urban areas, are being separately promoted to support the characteristics of the region. In the case of rural areas, the rural vitality plus project and the renovation project of living conditions in vulnerable rural areas will be promoted. In the case of fishing villages, an additional fishing village new deal 300 project is being promoted. Each support project is as follows.

1) Living conditions renovation project in vulnerable areas (National Balanced Development Committee)

The project to renovate living conditions in vulnerable areas organized by the National Balanced Development Committee has been in progress since 2015. It is also called the "Saedeul Village Project." The purpose of the project is to expand vital living

infrastructures such as safety and hygiene, improve the residential environment, and strengthen residential capacity to ensure the basic living standards of residents in vulnerable areas. The characteristic of this project is that it takes into account not only the physical environment but also the vulnerability of residents and the geographical characteristics of the region in the process of selecting the target area.

The project is divided into rural and urban types depending on the area where the project is carried out, and a total of 120 areas, including 100 rural areas and 20 urban areas, are selected every year. To reflect the characteristics of each region and ensure the efficiency of execution, the Ministry of Agriculture, Food and Rural Affairs and the Ministry of Land, Infrastructure and Transport are in charge of project management of rural and urban types, respectively.

At the beginning of each year, the National Balanced Development Committee prepares and announces guidelines for selecting areas subject to the project, and basic local governments across the country can apply for a public offering. To apply for a public offering, a basic local government shall submit a project plan containing the current status and project plan of the target area according to the selection criteria, with a small village unit area within its jurisdiction as the target area. The National Balanced Development Committee shall organize a separate selection review committee with experts, professors, and managers in related fields to proceed with the public offering review process. Based on the project plan submitted by the basic local government, the committee conducts a written evaluation on whether the selection criteria are met, and conducts an on-site evaluation of local vulnerabilities and qualitative indicators. A final review is conducted based on the written evaluation and on-site evaluation results, and the final project area is determined through the committee's decision.

Looking at the guidelines presented by the National Balanced Development Committee, it is possible to see what criteria are being applied to the selection of areas subject to living

conditions renovation projects in vulnerable areas. Looking at the evaluation items and allocation criteria of urban types, the quantitative indicators account for 45 points, the qualitative indicators for 45 points, and the housing vulnerability for 10 points. Quantitative indicators include living and safety infrastructure (the ratio of houses only in contact with defective roads, the ratio of households without sewage, the ratio of households without urban gas), housing environmental standards(the ratio of old houses over 30 years old, unlicensed and slate housing ratio, vacant housing ratio), socioeconomic environmental standards for residents (population ration of over 65 years of age, household ratio of basic livelihood recipients, and population ratio of disabled people), qualitative indicators consist of the adequacy of the plan, the will of local governments, and the urgency of the project. Residential vulnerability is scored by reflecting the regional vulnerability rating according to the calculation result of the residential vulnerability index analyzed by the Architecture & Urban Research Institute. In addition to the scores calculated in this way, additional or deduction factors include the degree of linkage with the life SOC complex project, evaluation results of the existing project for the local government, cancellation of the existing project, and difference in project application and field data. The specific evaluation score table is shown in Table [3]. Rural types also differ in detailed standards, so the basic evaluation factors are similar.

Table [3] Evaluation items and distribution criteria for living conditions renovation projects in vulnerable areas (urban types)

Evaluation elements	Evaluation items	Evaluation contents	Score
Total			100
Quantitative indicators (45)	Living and safety infrastructure (15)	1. Percentage of houses facing only defective roads less than 4m	7
		2. Percentage of households without sewerage	4
		3. Percentage of households without city gas installation	4

Evaluation elements	Evaluation items	Evaluation contents		Score
	Housing environmental (15)	4. Percentage of old houses over 30 years		5
		5. Percentage of unlicensed and slate houses		6
		6. Percentage of vacant houses		4
	Socioeconomic environmental (15)	7. Percentage of senior citizens aged 65 or older		5
		8. Percentage of households eligible for basic living		6
		9. Proportion of the disabled population		4
Qualitative indicators (45)	Adequacy of the plan (15)	10. Appropriateness of deriving project contents through review of regional status and problems		10
		11. Appropriateness of calculating project details, such as project costs and periods, for the details of the project		5
	Will of local governments (10)	12. Understanding the purpose of the project and willingness to promote the project		5
		13. Efforts to link in-house projects, ministries-related projects, private capital, etc		5
	Building resident engagement and governance (10)	14. Collection of residents' opinions, the composition of existing residents' communities, details of activities, etc		5
		15. Establishment and planning of governance in connection with local socio-economic organizations, etc		5
	The urgency of the project (10)	16. The urgency of the project to improve the degree of vulnerability of the target site and the risk factors related to safety and hygiene through on-site evaluation		10
Housing vulnerability (10)		17. The regional vulnerability rating according to the calculation result of the residential vulnerability index analyzed by the Architecture & Urban Research Institute		10
Additional or subtractive points	Additional Points (10)	Link to life SOC complexity	Where the specificity and realization are high by preparing a linkage plan within the project target site	+5
			Where the project is being promoted near the target site or a linkage plan is prepared and embodied	+3
		Evaluation results for existing projects	In the case of 'A' as a result of the annual evaluation, 2 points per location (maximum of 5 points)	+5
	Subtractive Points (-10)		In the case of "C" as a result of the annual evaluation, 2 points are deducted per location (up to 5 points)	-5
		Project Cancellation Case	Where the project is canceled during the pre-selected project	-5

Evaluation elements	Evaluation items	Evaluation contents		Score
		Degree of difference between project application documents and field data	Where it is deemed that the quantitative evaluation index is significantly different from the field evaluation	-5

Source: National Balanced Development Commission Guidelines for Living Conditions Renovation Project in Vulnerable Areas

If selected as a target area for the project, up to 70% of the project cost reflected in the project plan can be supported by state funds, with 1.5 billion won for rural areas and 3 billion won for urban areas. However, up to 80% of the project cost is provided for projects related to living, sanitary infrastructure, or safety. The project implementation entity becomes the head of the basic local government, and the project period is usually designed within four years, but it can be extended if the project period needs to be extended to complete the project.

Looking at the contents of the support, the project plan is established according to the priority selected by the residents, and customized support is provided. First, securing safety can include preventing disasters such as landslides, habitual flooding, and fires that pose direct or indirect threats to the safety of residents, repairing old-age dangerous facilities such as shafts, fences, and buildings, and installing CCTVs. Second, to improve living and sanitation infrastructure, it supports infrastructure that is close to residents' lives, such as installing simple water supply, installing small sewage treatment facilities, improving traditional and common toilets, and creating living spaces for village communities. Third, a project to improve housing conditions shall be implemented for basic livelihood recipients and the next-highest class. The main content of the project is to improve the safety problem of housing by improving the old-age defective housing. Fourth, projects to strengthen human care and resident capabilities are also included.

Various residents' activities support projects suitable for village conditions such as elderly care, health care, cultural leisure programs, and education may be included.

Since 2015, new target areas have been steadily selected every year, and as of 2022, 449 rural types and 146 urban types have been selected. Among them, 68 new target areas (10 urban types and 58 rural types) were selected in 2022, and KRW 146.1 billion in state funds (135.6 billion won for continuing projects in existing target areas and KRW 10.5 billion for new target areas) will be provided in 2022.

2) Rural vitality plus project (Ministry of Agriculture, Food and Rural Affairs)

The Rural New Vitality Plus Project is a key project in the agricultural and rural sectors among the basic plans for balanced national development, and aims to select a total of 100 cities and counties from 2018 to 2022. By selecting 20 new regions in 2021, 80 cities and counties have been promoting rural vitality plus projects so far.

Looking at the contents of the support, the area selected as the target area for the project will execute a total of 7 billion won over four years, with state expenses of 4.9 billion won and local expenses of 2.1 billion won. It is mandatory to use more than 30% of the total project cost for software programs to foster local innovators and strengthen innovation capabilities. The subjects who can apply for the project are 123 cities and counties in general agricultural and fishing villages. It aims to select 100 locations by 22 and provide a total of 700 billion won.

This project is a project to upgrade local specialized industries and create social jobs by utilizing local assets and private organizations prepared for local resource development projects, regional and village development projects, etc. In particular, it focuses on fostering local human resources such as private promoters and activists. Accordingly, a private-centered "new

vitality promotion team" such as local universities, research institutes, experts, and activists is formed, and project plans are established and promoted through agreement with those who wish to participate in the project.

In addition, projects needed by regions (residents and local governments) can be autonomously organized in line with the decentralization trend, so that human resource development, software, and hardware can be autonomously combined to achieve regional project goals. In particular, it supports the development and commercialization of new products using local resources, improvement of processing facilities and equipment, start-ups, and community spaces for local residents.

Table [4] Current target areas of rural vitality plus projects

	2018 (10)	2019 (20)	2020 (30)	2021 (20)
Gyeonggi (5)	Gapyeong	Yeoju	Yangpyeong, Hwaseong	Icheon
Gangwon (7)	Pyeongchang, Wonju	Gangneung, Hongcheon	Hoengseong	Yeongwol, Yangyang
Chungbuk (7)	Yeongdong	Jeungpyeong, Chungju	Goesan, Jincheon	Cheongju, Danyang
Chungnam (7)	Yesan, Asan	Cheongyang	Geumsan, Cheonan	Gongju, Boryeong
Jeonbuk (10)	Wanju	Gimje, Iksan, Imsil, Jangsu	Gochang, Namwon, Buan, Sunchang	Jinan
Jeonnam (14)	Jangheung	Yeonggwang, Gangjin, Jangseong, Muan	Goheung, Gokseong, Gwangyang, Gurye, Naju, Haenam	Wando, Hwasun, Hampyeong
Gyeongbuk (15)	Uiseong	Mungyeong, Sangju, Yecheon	Gunwi, Seongju, Yeongcheon, Ulleung, Uljin, Cheongdo	Gimcheon, Yeongdeok, Andong, Yeongju, Goryeong
Gyeongnam (13)	Hadong	Hamyang, Sancheong	Geoje, Geochang, Namhae, Miryang, Yangsan, Changnyeong, Hapcheon	Changwon, Gimhae, Tongyeong
Jeju (2)		Seogwipo		Jeju

Source: Ministry of Agriculture, Food and Rural Affairs Press Release

The Ministry of Agriculture, Food and Rural Affairs, which is promoting the project, expects to create jobs and create a virtuous cycle in the region by revitalizing communities such as agricultural corporations and social economy organizations using agricultural resources.

3) Fishing Village New Deal 300 Project (Ministry of Oceans and Fisheries)

To revitalize fishing villages, the fishing village New Deal 300 is a project to revitalize fishing villages by selecting 300 ports and fishing villages nationwide to modernize essential infrastructure such as underdeveloped docks, and to promote regional-specific projects using various resources from fishing villages such as natural scenery, cultural heritage, and local specialties.

It was first introduced in 2019 and is being implemented by the Ministry of Maritime Affairs and Fisheries, and up to 10 billion won will be provided over three years, which is the project period for each target area. The basic local government becomes the subject of the project application, and it is operated in a procedure that is selected when the application is submitted through a written public offering after preparing a project plan for each fishing village. The main characteristic is that a project plan is established based on the opinions of a regional consultative body composed of local residents, public officials, and experts, and based on this, regional customized projects are promoted.

Starting with the selection of 70 locations in 2019, the selection of 300 target areas was completed by selecting 50 target areas in 2022. A total of 1.6 trillion won was invested by 2021, and 735 billion won was invested by 2022, making it the largest investment project in fishing villages with about 3 trillion won invested from 2019 to 2024.

Looking at the progress of the project so far, representative projects such as Manjae-do, Sinan-gun, Jeollanam-do, Gauido North Port, Taean-gun, Chungcheongnam-do, and Hupo Port,

Ganghwa-gun, Incheon, have been completed. The improvement of maritime passenger facilities such as passenger ship docks has made it easier for local residents to travel to and from the land, and specialized projects using local specialties can be stably promoted.

The contents of the project are largely divided into supplying SOCs for local life, developing specialized fishing villages using local resources, and reviving fishing villages through local regeneration. First of all, in the case of supplying local-friendly living SOCs, reinforcement of docks, expansion of waiting rooms, installation of safety facilities, and creation of residents' convenience facilities will be promoted to improve the marine transportation infrastructure of underdeveloped fishing villages. Through this, the purpose is to increase the convenience of maritime transportation and to improve the accessibility and settlement conditions of fishing villages. In the case of specialized fishing village development using local resources, it aims to create a new income base for fishing villages and revitalize the fishing village economy by using local unique assets such as natural scenery, cultural heritage, and local specialties. To this end, various resident-participating income projects are promoted through village companies centered on local residents to increase the income of residents and revitalize the fishing village economy. Finally, in the case of reviving fishing villages through regional regeneration, the main content is to expand start-up platforms and infrastructure to promote the influx of returnees to fishing villages, and to establish a sustainable fishing village regeneration base.

2.1.3. Support projects for underdeveloped areas according to regional characteristics

Some projects are being promoted to solve specific problems that have occurred in the region without limiting the target area to specific geographical categories such as cities and rural areas. A representative example is the project to support the

population reduction area program promoted by the Ministry of Public Administration and Security.

This project is a project to select and support projects desired by local governments according to regional characteristics and on-site demand to effectively respond to the crisis of population decline in areas where the population continues to decline and population structure deteriorates. In the case of provinces, despite the high fertility rate in the region compared to the metropolitan area or large cities, the population in the region is rapidly decreasing due to the outflow of young people, and the project was introduced to actively solve this problem. It is also intended to promote inclusive balanced development that can enjoy public services beyond the minimum standard of living anywhere in the country.

If a basic local government establishes a project plan and applies for the project, the metropolitan government submits an application for the public offering to the Ministry of Public Administration and Security, and the Ministry of Public Administration and Security conducts a document review and on-site review and finally selects it through the selection committee.

The contents of the project are to plan software projects desired by local governments following the on-site demand of regional characteristics to solve problems in population-decreasing areas, and to support such project plans. According to the specific content, it is divided into three types: population vitality, economic recovery, and spatial innovation. First, in the case of the type of population vitality, education, exchange and communication, and intermediate support organization linkage programs are included to support young people in the region or young people flowing into the region to learn, meet, and communicate. Second, the type of economic recovery is to foster specialized industries in the region for young people to settle in the local community and to revitalize the social economy and regional circulation system. The contents include fostering specialized industries, diversifying social and economic networks, and start-up practice programs. Third, the

type of spatial innovation is to create a regional community base space and strengthen the already established space utilization. It includes education to strengthen residents' capabilities and programs to create community-based spaces such as club meetings.

Since 2017, five places have been selected every year and supported through the issuance of a special grant tax of 400 million won per project, and the government subsidy ratio is 50%. In 2020, the number of project target areas was expanded to 10 reflecting the growing demand of local governments as the population decline problem grew, and a budget of 100 to 200 million won per project area was supported.

Table [5] Results of selection of programs supporting population reduction areas in 2020

Regional name		Project name
Gangwon	Jeongseon	Pioneer Colloquium
Gangwon	Donghae	Rice wine ripening Hongwolpyeong
Chungbuk	Okcheon	OCU (Oshu) Project to Okcheon
Chungnam	Cheongyang	Revitalization of Youth Street for Youth Communication
Jeonbuk	Gochang	Training of Hanok Specialists and Population Inflow Using Local Resources
Jeonbuk	Gimje	Becoming Young, Youth Start-up (Farmer) Regional Settlement Solution in Rural Areas
Jeonnam	Goheung	Youth Happiness Bridge Project in our neighborhood
Gyeongbuk	Gunwi	Gunwi (WE) Let's live well
Gyeongbuk	Mungyeong	Youth Trading Center, a place where young people harvest their dreams
Gyeongnam	Hadong	Akyang Village Market

Source: Ministry of Public Administration and Security Press Rele

2.2. Literature Review

2.2.1. Studies on the Underdeveloped Areas and Past Development Policy

The underdeveloped area is a policy concept with relativity. Therefore, research on underdeveloped areas was often conducted with policies for the development or support of underdeveloped areas rather than the purpose of researching themselves.

First, Kim et al. (Y. D. Kim, & Seo, 2015) analyzed that the concept of underdeveloped areas continued to change without a generalized definition because the meaning of the concept of underdeveloped areas varies depending on the level of economic development or the degree of a regional gap. In addition, each government's policy change was verified for island development policy, remote development policy, development promotion zone policy, border area policy, new vitality area policy, and new development area policy, and the cause of the policy change was explained by changes in interests due to government change.

As an attempt to identify underdeveloped areas through empirical methods, research was conducted to calculate the underdeveloped level of the region and use it as a standard for support policies. Lee (S.B. Lee, 2009) calculated the 'Comprehensive Vulnerability Index' and classified basic local governments into declining areas, stagnant areas, development areas, and growth areas. For the four types, it was compared and analyzed that they have different characteristics based on the degree of financial independence, the proportion of elementary, middle, and high school students, the proportion of the elderly, and the proportion of workers by industry. Through this, implications were derived that differentiated development plans were needed for each type. In addition, if it is not selected as a target area for the support project, it was suggested that it is necessary to deviate from the dichotomous support system, which is a method of

excluding support. In other words, a differential support system is needed for areas that have not been selected.

Ahn et al. (S. J. Ahn, Kim, & Go, 2015) selected and standardized regional vulnerability indicators, and calculated and empirically applied the vulnerability index in Gyeongsangbuk-do. Regional vulnerability indicators derived through previous studies and expert interviews included population growth rate, aging index, manufacturing worker ratio, GRDP, road rate, number of cars registered, number of doctors per 100, the ratio of basic livelihood recipients, and local tax collection per capita. As a result of the actual application, the vulnerability was found to be high in the order of Uiseong-gun, Yeongyang-gun, Cheongsong-gun, Yeongdeok-gun, and Gunwi-gun.

On the other hand, to empirically analyze the effects of the support policy for underdeveloped areas in the past, Hong et al. (S. W. Hong, & Kim, 2007) verified the effects through quasi-experimental control methods for the first and second development promotion zones, which are considered representative vulnerable area support projects. As a result of the analysis, it was found that despite the implementation of the development promotion zone project, it did not significantly affect the change in the local population, local taxes per capita, and the proportion of manufacturing workers in the development promotion zone.

Verification of policy effects led to attempts to derive problems with existing policies and present new policy directions. Jeong (C. M. Jung, 2005) presented wide-area development, specific regional systems, development promotion zones, and underdeveloped area development policies (island development, remote development, border areas) as representative policies that are being promoted as vulnerable area support projects, and analyzed their problems. The fragility and shortness of support policies, deepening local governments' dependence on the central government, lack of coordination and integration functions, and lack of post-evaluation and feedback were derived as problems, and policy directions for the successful implementation of the next

government's regional innovation policies were presented.

Lee et al. (B. W. Lee, Kim, & Lee, 2012) attempted to derive policy implications that can be used in the local field by investigating problems and improvement measures recognized by local government officials on vulnerable area development policies. As a result, policy directions such as enhancing the efficiency of planning and project promotion of regional development projects, expanding finances and establishing standards for state support, and strengthening cooperation between projects through the establishment of an efficient regional development project promotion system were presented.

The flow of research to identify underdeveloped areas and future policy proposals by verifying the effectiveness of the policy to support underdeveloped areas continues even with the current policy to support underdeveloped areas.

2.2.2. Studies on the Current Support Policy for Underdeveloped Areas

In this study, a number of studies were conducted to verify the performance of the project and to derive improvements in the system by discovering the problems of the existing project.

Among them, the most studied project is the living conditions renovation project in vulnerable areas. First, in the process of preparing for the full-scale introduction of the project, there was an analysis of similar cases of overseas developed countries (J. M. Lim, Lee, Kim, Cho, Choi, Park, & Hwang, 2016) and a study to establish an effective project operation system with public offering guidelines. Through this, it was suggested that a monitoring system that can verify the effectiveness of the project and a clear judgment index on the level of regional decline should be implemented to support underdeveloped areas, and package-type projects that can solve various problems in the region should be implemented.

After the project was carried out in earnest, a supplementary study (Y. H. Lee, Baek, Lim, & Kim, 2021) was conducted to check the project's progress by project stage and survey various subjects (public officials in charge, village activists, residents, etc.) who participated in the project. As a result of the status survey, a total of 721 unit projects were planned in the case of 30 target areas selected in 2015. This means that an average of 24 unit projects per target area were carried out during the four-year project period. Looking at the results of the survey on project participants, the evaluation of project performance and policy goals was positive, but the satisfaction of residents was somewhat lower than that of public officials and village activists. Based on the results of analyzing the results of the current status diagnosis and satisfaction survey, this study suggested that it is necessary to prepare a maintenance plan after the end of the project as a requirement for future system improvement.

Seo et al. (S. J Seo, & Kim, 2019) developed the 'residential vulnerability index' and applied it to areas subject to urban-type living conditions renovation project in vulnerable areas to verify the validity of existing areas. In this study, indicators were derived and reflected for each of the three fields to calculate the residential vulnerability index. First, regarding the residential environment, the ratio of old houses, slate roof houses, and empty houses were selected, and indicators such as the ratio of new houses, poor road access, and too small land were derived in the infrastructure sector, and the ratio of the elderly population, basic living beneficiaries, and the next-highest class were derived. Comparing the calculated residential vulnerability index with the previously selected target areas, many of them were found to be high, but some areas were selected for reasons such as considering regional equity despite the good residential environment. Therefore, this study proposed a method of selecting project targets using the published official statistics.

In addition, studies related to the living conditions renovation project in vulnerable areas mainly focused on analyzing

the performance of the project based on individual cases. In the case of Jeong (G.C. Jung, 2022), the project was analyzed to be effective in improving the village landscape in rural areas, and suggested that it needs to be appropriately used as a means of improving the landscape. Yoo (H. J. Yoo, 2014) analyzed the factors for the successful promotion of regional revitalization projects, comparing the Busan Gamcheon Culture Village project and the Shinsu-dong Happiness Village Co., Ltd. project. From the perspective of local governance, the factors affecting the successful promotion of the project were analyzed, and implications were derived that the role of the government was important in the early stages of the project.

Studies related to rural vitality plus projects are as follows. Jang et al. (E. M. Jang, Lee, & Park, 2021) conducted interviews with experts who participated in the rural vitality plus project to analyze the success factors of the project, drawing on the point that it is important to use a cooperative network for the project to succeed despite legal or institutional constraints. In a study of Sunchang-gun among the areas subject to rural vitality plus projects, Lee et al. (J. H. Lee, Lee, Jung, Lee, & Choi, 2020) suggested the need to investigate human resources in the area and use geographical information through GIS in the project planning stage, which can be applied to all areas.

Since the integrated support project for population reduction areas and the fishing village New Deal 300 project were relatively recently introduced, there were some studies suggesting directions for successful implementation of the project in the early stages of its introduction or for basic local governments participating in the project public offering process.

2.2.3. Studies on the Determinants of Policy or Location

Research on the factors that determine specific policies or projects of local governments focuses on the process of adopting specific policy flows rather than decision-making by detailed

project units.

Based on the policy-making factor theory, Hwang (D. Y. Hwang, 2006) analyzed the impact of local government characteristics on policy calculation, set the financial power index and population density as major socioeconomic factors, and set the turnout and party belonging to the head of the organization as political factors. Choi (J. Y. Choi, 2006) derived the degree of financial independence of local governments as a factor that determines the environmental policy of local governments. Lee (J. H. Lee, 2013) divided the influencing factors into political administrative factors and socioeconomic factors while analyzing the impact on the proportion of local governments' welfare-type job projects. Political and administrative factors included the political orientation of the party to which the head of the organization belongs and the proportion of the job budget among the local government budgets, and socioeconomic factors included the elderly population ratio and unemployment rate. Park (K.Y Park, 2014) analyzed the factors that determine childbirth incentives for each local government by dividing them into four factors as follows. Socioeconomic factors (income level, early marriage rate, population density, population growth rate), political and administrative factors (government relations, re-election of the head of the organization, timing of local elections, percentage of votes cast by the head of the organization, and turnout for local elections), fiscal capacity factors (weight of welfare budgets, local financial independence, expenditure budget), and equalization factors (average value of childbirth incentives of metropolitan governments). Cho (C.D. Cho, 2020) analyzed the factors affecting the amount and proportion of youth-related budgets, and set the proportion of youth voters and the number of youth civic groups per 100,000 residents as independent variables. As a result of the analysis, it was analyzed that the number of youth civic groups affects the youth-related budget.

A study that analyzed the determinants of location, not the policies of local governments, there is a study by Kim (T. H. Kim,

2017), who analyzed the factors that determine the location of the designated general industrial complex after 2008. In this study, the size of individual locations by region, the degree of financial independence, the size of local taxes, and the location of existing general industrial complexes were set as independent variables. As a result of the analysis, it was analyzed that all four independent variables influenced the location decision.

Kim (M. H. Kim, 2015) identified the factors affecting the performance of financial projects and analyzed their influence. In this study, multiple regression analysis was conducted by setting the characteristics of the project itself, such as the type and size of the financial project, and the characteristics of the minister (policy expertise, knowledge expertise, management expertise), relevant ministries, and institutions by policy type as independent variables. As a result of the analysis, it was analyzed that independent variables, excluding the minister's expertise and characteristics by policy type, affect the performance of the financial project.

In addition, studies that analyzed the factors involved in specific decision-making focusing on key conditions are as follows. Sa (C. W. Sa, 2012) conducted a factor analysis on the decision to distribute special grant taxes, focusing on the influence of political officials. Through the analysis of previous studies, Kim (Y.Y. Kim, 2018) compared and analyzed the factors affecting the business effect of private-led government support projects, focusing on the agricultural, livestock, and fisheries self-help systems. As a result of the analysis, the influencing factors were presented based on the creation of the system, the department in charge, the purpose of introduction, the creation method, the size of the self-help fund, and the use of self-help funds. Choi (M.S. Choi, 2016) compared and analyzed the scale of preventive medical expenditure, and suggested differences in political stability between OECD countries as a determinant. Im (J. K. Im, 2016) analyzed the factors that influence the location conditions of each parcel set during the project plan for the sale of support land in the industrial complex. In this study, independent variables were divided into parcel-

specific attributes (available period and shape by parcel), transportation convenience (number and size of encounter roads by parcel, distance from bus stops), and environmental convenience (distance from park or green area, distance from industrial land or residential) and the impact of each factor on the first successful sale by parcel.

Table [6] Summary of previous studies on the determinant analysis

Research name	Dependent variable	Independent variable	Control variable
Effects of Local Government Characteristics on Policy Calculation (Deok-yeon Hwang, 2006)	1) Social development expenses 2) Economic development expenses 3) Percentage of social/economic development expenses	1) Financial strength index 2) Fiscal expenditure for the previous year 3) Automobile ownership rate 4) Population density 5) Population 6) Percentage of people eligible for basic living security 7) Percentage of workers in the manufacturing industry 8) Party belonging to the head of an organization 9) Turnout 10) Percentage of votes cast	None
An Analysis of the Effect of Financial Power Differences on Environmental Policy in Local Governments (Jin-young Choi, 2006)	Results of environmental suitability evaluation by local governments (surveying for local governments)	Degree of financial independence of local governments	None
An Analysis of Factors Affecting the Percentage of Expenditure on Welfare-Type Job Projects: Focusing on Financial Assistance Job Projects (Ji-hye Lee, 2013)	Percentage of the budget for welfare-type jobs that correspond directly to the total budget for jobs unique to local governments	1) Political and administrative factors: the tendency of local government heads to belong to political parties, the proportion of job budgets 2) Socioeconomic factors: proportion of the elderly population, the unemployment rate	None

Research name	Dependent variable	Independent variable	Control variable
A Study on the Determinants of Basic Local Government's Childbirth Promotion Policy : Focusing on Cash Support (Ki-young Park, 2014)	The total amount of childbirth incentives, which is the sum of the actually available subsidies	1) Socioeconomic factors: income level, early marriage rate, population density, population growth rate 2) Political and administrative factors: government relations, the re-election of the head of the organization, election timing, the percentage of votes cast by the head of the organization, and the turnout for local elections 3) Factors of financial capacity: local fiscal independence, the proportion of welfare budget, and expenditure budget size 4) Factors of isomerization: average of childbirth incentives for metropolitan organizations	None
A Study on the Determinants of the Local Government's Youth Policy Budget: Focusing on the Discriminatory Effects of Conventional and Non-Traditional Participation (Chang-deok Cho, 2020)	1) Youth policy budget per resident 2) Percentage of youth policy budget	1) Percentage of young voters 2) Number of youth civic groups per 100,000 residents	1) Socio-economic factors: youth population, youth unemployment rate, local tax per capita 2) Political factors: the proportion of progressive members of the parliament, political parties belonging to the head of the organization 3) Financial Factors: percentage of subsidized projects
Analysis of Location Characteristics and Determinants of General Industrial Complex Designated since 2008 : Focusing on Policy Factors of Determining Industrial Location (Tae-hyung Kim, 2017)	Whether a general industrial complex is located	1) Size of the area of an individual location 2) Degree of financial independence 3) The size of local taxes 4) Whether the existing industrial complex is located	1) Population 2) Road rate 3) Number of cultural infrastructures
A Study on the Determinants of Financial Business Performance (Min-ha Kim, 2015)	Total score for financial project self-evaluation	1) Project characteristics: project type, project size 2) Ministerial characteristics: policy expertise, knowledge expertise, management expertise 3) Institutional characteristics: department in charge, institution by policy type	Measurement year

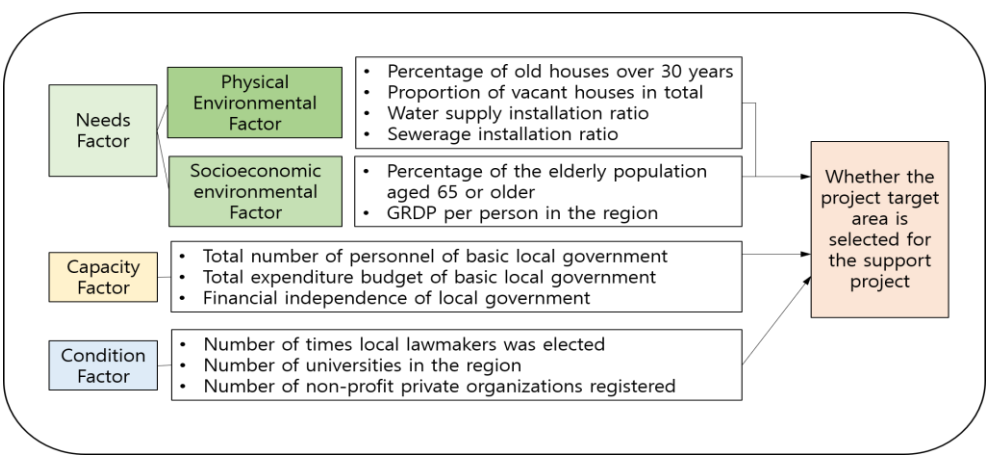
Research name	Dependent variable	Independent variable	Control variable
An Empirical Study on the Determinants of the Distribution of Special Grant Tax: Focusing on the Influence of Government Political Officials (Chang-woo Sa, 2012)	Amount of special grant tax by local government	1) Socioeconomic variables: local population, administrative district (city/county/district) 2) Political variables: the best player in the National Assembly, members of the Administrative Autonomy Committee, members of the Special Committee on Budget and Accounts, members of the ruling/opposition parties, and public officials in government political affairs	None
A Study on the Factors Influencing the Effectiveness of Private-led Government Support Projects : Focusing on the Comparison of Agricultural, Livestock, and Fisheries Subsidy System (Yoon-yi Kim, 2018)	The method of creating a self-help system (Arbitrary/Obligation)	1) Industrial conditions 2) The will of a producer group 3) Government policy support	None
A Study on the Determinants of Preventive Medical Expenditure: Focusing on the Political Stability of OECD Countries (Mi-sun Choi, 2016)	Percentage of preventive healthcare expenditure	1) Whether to adopt a presidential system 2) Parliamentary fractional index	1) GDP per capita 2) Trade dependence 3) Aging Ratio 4) Fiscal Deficit Ratio 5) The percentage of deaths from diabetes
Analysis of factors influencing the sale of supporting land in industrial complexes - targeting individual parcels of Sihwa MTV support land in K-water - (Jin-kyung Lim, 2016)	Whether the first sale was successful by parcel	1) Associated with parcel-specific properties: available period by parcel, shape 2) Transportation convenience: the number and size of the access road by parcel area, and the distance from the bus stop 3) Environmental Convenience: distance from park and green area, distance from industrial land and residential area	1) Korea Composite Stock Price Index 2) Factory registration rate 3) Price per unit area

3. Research Design and Methodology

3.1. Research Model

Based on the institutional background and previous studies, a research model as shown in Figure 1 was constructed to analyze what factors affect the selection of vulnerable area support projects. In this study, whether or not to select an area for the underdeveloped area support project was used as a dependent variable, and the independent variable was largely divided into a demand factor, a capacity factor, and a condition factor. Demand factors were classified into physical and socioeconomic environmental factors, and physical environmental factors included the ratio of old houses, the ratio of vacant houses, water supply installation ratio, and sewage installation ratio, and socioeconomic environmental factors included the ratio of elderly people and GRDP per person in the region. As for the capacity factors, the size of the workforce of the basic local government, which is the unit applying for a public offering, and the size of the expenditure budget were considered as well as the degree of financial independence. Conditional factors included the number of elected lawmakers in the region, the number of universities based in the region, and the number of non-profit private organization registrations.

[Figure 1] Research Model



3.2. Data and Composition of Samples

Support projects for underdeveloped areas may include several projects as previously discussed, but this study analyzed the "Living Conditions Renovation Project in Vulnerable Urban Areas" (Subject: National Balanced Development Committee, Management: Ministry of Land, Infrastructure and Transport). Considering the nature and procedures of the support project, consistency in the management of the target area, the number of target areas, the competition rate for public offerings by local governments, and the possibility of obtaining data throughout the selection process, it was judged to be suitable for analysis. The reasons for selecting the project as an analysis target are as follows.

First, the living conditions renovation project in vulnerable urban areas has been promoted by the National Balanced Development Committee since 2015, and the project has been stably selected every year for more than five years until 2022.

Second, 20 to 30 project target areas are selected every year according to the budget size allocated every year. The number of selected areas is relatively small compared to the number of applied areas, so competition is taking place to some extent. If the number of project target areas is less than 10, it is difficult to derive meaningful analysis results due to the small sample size, and if there are too many project target areas each year, most of the applied local governments can be selected or the target areas tend to be allocated by region, so it is not meaningful to analyze the selection factors.

Third, the project has been closely managed by the Ministry of Land, Infrastructure and Transport since the selection of the target area, and the project is highly effective because it monitors the entire project process, evaluates the project performance, and even manages it afterwards.

Fourth, data on the area where the project was applied and

the area selected as the target area is not easily disclosed to outsiders due to problems such as fairness in the project selection process, so there are considerable restrictions on data collection. However, the project was able to obtain internal data from the person in charge.

Looking at the current status of living conditions renovation projects in vulnerable urban areas, a total of 136 target areas were selected across the country from 2015 to 2022. The local government's public offering to select the target area was held at the beginning of each year after a guideline briefing session, and the target area selected through the public offering evaluation was usually announced in March every year. In this study, except for the 2015 target areas where data could not be obtained, the study was conducted with basic local governments that participated in the public offering after 2016.

A total of 209 basic local governments participated in the public offering (including overlapping in the same area with different application years), 116 of which were selected as the final target area, and 93 were eliminated from the selection. The ratio of the final selected target area (selection ratio) to the area participating in the public offering was 55.5%. Of the total 209 regions, 55 were for special cities or metropolitan cities, and 154 were for other provinces.

By period, a total of 44 regions participated in the public offering in 2016, and 22 of them were selected as project areas, with the final selection ratio of 50.0%. In 2017, a total of 34 regions participated in the public offering, and 16 of them were selected as project areas, with a selection ratio of 47.1%. In 2018, a new project area could not be selected because a new project promotion budget was not separately secured. In 2019, when the selection of new target areas resumed, 39 regions participated in the public offering, and 30 of them were selected as project areas, with a selection ratio of 76.9%. In 2020, a total of 37 regions participated in the public offering, and 22 of them were selected as project areas, with a selection ratio of 59.5%. In 2021, a total of 28 regions

participated in the public offering, and 16 of them were selected as project areas, accounting for 57.1%. In 2022, when the most recent public offering was held, a total of 27 regions participated in the public offering, and 10 of them were selected as project areas, with a selection ratio of 37.0%. The current status of basic local governments subject to analysis is as described in Table [7].

Table [7] Status of basic local governments subject to analysis

			Target area not selected		Selected target area	Selec-tion rate (%)
		No.	Region name	No.	Region name	
	209	93		116		
2016	44	22	Busan (Buk-gu), Incheon (Nam-gu, Nam-dong, Jung-gu), Daejeon (Dong-gu, Nam-gu, Dong-gu, Dong-gu), Ulsan (Nam-gu, Jung-gu), Gyeonggi (Dongducheon, Uijeongbu, Paju), Gangwon (Gangneung, Sokcho, Wonju, Chuncheon, Hoengseong), Chungnam (Cheon), Jeonbuk (Gimje), Gyeongnam (Gimhae)	22	Busan (Geumjeong-gu, Nam-gu, Dong-gu), Incheon (Dong-gu), Gwangju (Seo-gu), Ulsan (Dong-gu, Buk-gu), Gangwon (Donghae, Samcheok, Taebaek), Chungbuk (Yeongdong), Chungnam (Buyeo), Jeonbuk (Gunsan, Iksan, Jeonju), Jeonnam (Mokpo, Yeosu, Jangseong), Gyeongbuk (Andong, Yeongju), Gyeongnam (Jinju, Tongyeong)	50.0
2017	34	18	Seoul (Seongdong-gu, Jongno-gu), Busan (Seo-gu), Daejeon (Dong-gu), Gwangju (Gwangsan-gu), Ulsan (Jung-gu), Gyeonggi (Anseong, Paju), Gangwon (Gangneung, Hoengseong), Jeonbuk (Gunsan, Jeonju), Jeonnam (Naju, Mokpo), Gyeongnam (Geoje, Jinju, Tongyeong), Jeju (Jeju)	16	Seoul (Geumcheon-gu), Busan (Buk-gu, Sasang-gu, Saha-gu), Incheon (Dong-gu), Daejeon (Nam-gu), Gwangju (Nam-gu), Gangwon (Sokcho, Yeongwol, Taebaek), Chungnam (Boryeong, Hongseong), Jeonbuk (Gimje), Gyeongbuk (Yeongju), Gyeongnam (Kimhae, Miryang)	47.1
2019	39	9	Busan (Geumjeong-gu), Gwangju (Seo-gu), Gyeonggi (Namyangju, Paju (Paju-eup)), Gangwon (Taebaek), Jeonbuk (Buan, Iksan (Dongsan-dong), Iksan (Mohyeon-dong)), Jeonnam (Mokpo (Jukgyo-dong)), Gyeongnam (Geoje (Jangseungpo-dong))	30	Busan (Busanjin-gu, Sasang-gu, Jung-gu), Incheon (Michuhol-gu), Daejeon (Dong-gu), Gwangju (Nam-gu, Dong-gu, Buk-gu), Gyeonggi (Uijeongbu, Paju(Beopwon-eup), Pyeongtaek), Chungnam (Geumsan, Seocheon), Jeonbuk (Gochang, Jangsu, Jeonju, Jinan), Jeonnam (Mokpo(Yudal-dong),	76.9

			Target area not selected		Selected target area	Selec-
					Suncheon, Yeosu), Gyeongbuk (Mungyeong, Andong, Yeongju), Gyeongnam (Geoje(Neungpo-dong), Jinju, Changwon, Tongyeong)	
2020	37	15	Seoul (Jungnang-gu), Gwangju (Donggu), Gyeonggi (Icheon), Chungbuk (Eumseong(Eumseong-eup), Chungnam (Geumsan, Seocheon), Jeonbuk (Gochang, Gunsan, Gimje, Namwon, Jeonju (Wansan-dong)), Gyeongbuk (Gyeongju, Yeongcheon), Gyeongnam (Geoje, Yangsan)	22	Busan (Busanjin-gu, Seo-gu, Yeonje-gu), Gyeonggi (Paju), Gangwon (Taebaek), Chungbuk (Eumseong(Geumwang-eup), Jecheon) Chungnam (Nonsan, Yesan, Cheongyang), Jeonbuk (Gunsan(Guam-dong), Sunchang, Iksan, Jeonju (Namnosong-dong)), Jeonnam (Yeosu, Yeonggwang, Wando), Gyeongbuk (Bonghwa, Yecheon, Cheongdo), Gyeongnam (Changwon, Tongyeong)	59.5
2021	28	12	Incheon (Gangwha), Daejeon (Dong-gu), Gyeonggi (Namyangju(Palya), Uiwang), Gangwon (Donghae(Mukhojin-dong), Taebaek, Hoengseong), Chungbuk (Cheongju), Chungnam (Gongju), Gyeongbuk (Yeongyang), Gyeongnam (Kimhae, Yangsan)	16	Busan (Seo-gu), Gwangju (Dong-gu), Gyeonggi (Namyangju(Tegyewon), Gangwon (Donghae(Balhan-dong), Samcheok), Chungbuk (Jecheon), Chungnam (Seocheon), Jeonbuk (Gunsan, Gimje, Jeonju), Jeonnam (Gwangyang, Goal, Wando), Gyeongbuk (Bonghwa, Yeongcheon), Gyeongnam (Changwon)	57.1
2022	27	17	Busan (Buk-gu), Incheon (Kanghwa, Dong-gu), Daejeon (Dong-gu), Gyeonggi (Namyangju, Yangpyeong), Gangwon (Donghae, Chuncheon, Taebaek), Chungnam (Nonsan), Jeonbuk (Buan), Jeonnam (Naju), Gyeongbuk (Yeongdeok, Yeongyang, Cheongdo), Gyeongnam (Changwon, Tongyeong)	10	Busan (Seo-gu), Gyeonggi (Uijeongbu), Gangwon (Samcheok), Chungbuk (Cheongju), Jeonbuk (Gunsan, Namwon), Jeonnam (Gangjin, Hampyeong), Gyeongbuk (Yeongju, Yeongcheon)	37.0

* Source: Internal data and press releases of the National Balanced Development Committee
* In 2015, the project area was excluded from the analysis because it was difficult to obtain data on the status of basic local governments that participated in the selection
* In 2018, the project budget for new project areas was not secured, so only the existing project areas were executed without selecting new areas

By region, Jeollabuk-do applied for 29 business area contests and participated in the public offering most actively, followed by Gangwon-do (26), Gyeongsangnam-do (22), and Gyeongsangbuk-do (19). Looking at the results selected as the final target area, Jeollabuk-do had the largest number of 18 places, followed by Busan and Jeollanam-do with 14, Gyeongsangbuk-do with 13, and Gangwon-do with 12. Busan and Jeollanam-do showed the highest selection ratio with 77.8%, followed by Chungcheongbuk-do (71.4%), Gyeongsangbuk-do (68.4%), Chungcheongnam-do (64.3%), and Jeollabuk-do (62.1%). Table [8] shows the results of the application for public offering by administrative district and the selection of target areas.

Table [8] Status of basic local governments subject to analysis by administrative district

		Number of Public Offering Applications	Number of selection of target regions	Selection ratio (%)
Special city/metropolitan area		55	28	50.9
	Seoul	4	1	25.0
	Busan	18	14	77.8
	Incheon	9	3	33.3
	Daejeon	5	1	20.0
	Daegu	2	1	50.0
	Gwangju	12	6	50.0
	Ulsan	5	2	40.0
Provincial areas		154	88	57.1
	Gyeonggi-do	18	6	33.3
	Gangwon-do	26	12	46.2
	Chungcheongbuk-do	7	5	71.4
	Chungcheongnam-do	14	9	64.3
	Jeollabuk-do	29	18	62.1
	Jeollanam-do	18	14	77.8
	Gyeongsangbuk-do	19	13	68.4
	Gyeongsangnam-do	22	11	50.0
	Jeju	1	0	0.0

3.3. Selection and measurement of variables

3.3.1. Selection of variables

(1) Dependent variable

The purpose of this study is to find out what factors affect the selection of areas subject to vulnerable area support projects. Therefore, the dependent variable was defined as whether or not the area subject to the vulnerable area support project was selected. Accordingly, as a result of the public offering review, the case selected for the target area of the support project was marked as 1, and the case not selected as the target area was marked as 0.

On the other hand, the number of places selected for support projects by basic local governments and the budget amount were considered as dependent variables at the beginning. However, in most cases, the number of selected areas for each local government was 1 to 2, and several projects were rarely selected within one basic local government. In addition, the budget amount tends to be designed close to the upper limit of support in most target areas, making it difficult to derive significant differences between regions. Therefore, the two variables were not selected as dependent variables.

(2) Independent variables

In order to select independent variables that could affect the final target area among local governments participating in the public offering, experts were interviewed in writing to judges and policymakers who participated in the selection review committee of the "Living conditions renovation project in vulnerable urban area".

< Written expert interviewees >

- OO Jin, OO Space Research Institute, Director
- OO Seo, Architecture and Space Research Institute, Senior Researcher
- OO Lim, Land and Housing Research Institute, Senior researcher
- OO Kim, National Balanced Development Committee, Director of Space Policy Division

Based on existing research data and expert interview results, independent variables that can affect are largely divided into four areas and summarized as follows.

First, among the major environmental standards presented in the guidelines, indicators that play the most important role in selecting target areas were reflected as variables. The support project requires that the planned area of the project be vulnerable below a certain level to apply for the public offering, which means that the demand for the support project should be high. The demand for support projects may depend on the human composition, physical conditions, and economic level of the region. The selection of key environmental indicators as variables among the quantitative indicators stipulated in the guidelines is based on the opinion of experts that the environmental characteristics of the target area are the most absolute criteria and act as a key project selection criterion, despite the qualitative review process and various external factors.

Among them, the ratio of old houses, the ratio of defective roads, the ratio of empty houses, and the ratio of water and sewage installation were mentioned as the most important indicators related to the physical environment. However, it was difficult to use statistical data in the case of the defective road rate. This is because there were no official statistics, and in the case of data directly submitted by local governments, the application criteria were ambiguous, so it was calculated differently for each local government. Therefore, finally, the ratio of old houses, the ratio of empty houses, the ratio of water supply installation, and the ratio of

sewage installation were derived as variables as physical environmental factors.

As socioeconomic environmental factors, the ratio of vulnerable groups (elderly, basic livelihood recipients) and the income level of the region were mentioned, among which the ratio of the elderly population and GRDP per capita of basic local governments were derived as variables. In the case of statistics on basic livelihood recipients, it was excluded because it was difficult to use statistics from basic local governments. This is because the Ministry of Health and Welfare, which produces statistics, only statistics for metropolitan governments are published externally.

< Key points associated with the indicators during written expert interviews >

▷ *Physical vulnerability can be said to be an almost absolute indicator in the selection of underdeveloped areas. In particular, in the case of a project to living conditions renovation in vulnerable areas, the problem of physical vulnerable areas such as Daldongne and Sandongne is the starting point of the project's planning. Accordingly, the physical vulnerability among the evaluation scores at the beginning of the introduction of the project was reflected at a level of 60%.…… (Middle omitted) ……In order to check the quantitative indicators even during field evaluation, the focus is on due diligence on whether it is actually a physically vulnerable area. As such, the project selection process focuses on determining physical vulnerability. …… (Middle omitted) …… Additionally, the important indicator is the social and economic indicator, that is, the ratio of the vulnerable. Therefore, even when selecting, it is important to see how many elderly people, the disabled, basic livelihood recipients, and the next-highest class live. (Jin)*

▷ *Physical vulnerability is a necessary condition in the selection of living conditions renovation projects in vulnerable areas. In particular, the failure to secure fire roads, access conditions, common toilets, and conventional toilets are used as the most basic data for determining the residential level of residents. Analysis of the previously selected target areas showed that most of the selected areas were highly correlated with physical vulnerability, but despite the relatively good physical vulnerability, the selected areas were selected due to regional balance or policy influence. (Seo)*

▷ *Physical vulnerability is the most easily identifiable in the written evaluation and on-site due diligence, so it has the greatest impact. Among the physical vulnerabilities, the defective road rate is thought to have the greatest influence on infrastructure. This is because road-related indicators are actually linked to the installation of water and sewage and urban gas, and are also linked to housing improvement. Regarding housing, the ratio of old houses is the most representative indicator, which is necessary to understand the overall situation of the region, but I think the ratio of slate roof houses or unauthorized houses is more related to vulnerable areas. ……(Middle omitted)…… Among the socioeconomic indicators, the proportion of vulnerable people in the region (aging rate, the household ratio of basic living beneficiaries, etc.) is important. (Lim)*

Second, experts agreed that the competence of the basic local government, which is the subject of applying for the public offering, has a great impact on the public offering. This is because the level of effort to participate in the public offering and the quality of the public offering plan depend on the administrative or financial capacity of the local government, not on the environmental characteristics of the project area itself. Among the various indicators representing the administrative capabilities of basic local governments, the number of manpower, the size of the expenditure budget, and fiscal independence, which are widely used in existing studies, were derived as variables.

Due to the nature of basic local governments operated with a small number of public officers, the burden and experience of the person in charge according to the size of the manpower are factors that can exert a significant influence not only on the stage of project public offering but also on the entire project. In addition, considering the operating characteristics of financial support projects matched by state and local expenses, it was judged that the financial size and financial independence of local governments could play an important role in the selection process of public offering projects.

< Key points associated with the indicators during written expert interviews >

▷ *One of the important parts of the selection process is the will of local governments, and the actual project target itself is a place where it is difficult to expect residents' will or capabilities, so administrative momentum is needed. Since the public role is important, the will or capability of local governments is considered. Specifically, rather than the budget size matched by local governments, it is to judge the understanding of the project, understanding of the site, identifying related information, communication level with residents, and administrative personnel. (Jin)*

▷ *In the selection process, the residents' understanding of the project purpose and community that can be confirmed in the field evaluation have an impact, and the will of local governments (exclusive manpower, matching budget size, and understanding of the project of the person in charge) has a great influence. Since it is difficult to carry out the project without local governments after the selection evaluation, the organization and administrative power of local governments, past experience in project promotion, and understanding of projects have a great impact on future project promotion. (Seo)*

▷ *I think the most important thing in the review of the project plan and the on-site evaluation is the will of local governments and residents to promote it. These contents are contained in the preparation process for the project's public offering. When preparing an application for a project public offering and presenting the site, it is possible to understand the sincerity of preparing the public offering, the efforts of residents to listen to their opinions, the willingness of residents to participate in the project, and the understanding of the relevant area. (Lim)*

▷ *In the process of selecting a project, the difference in competency and interest shown by local governments is very large. In fact, among local governments known to have very high physical vulnerability, even if they want to apply for the project, they often cannot participate in the public offering due to the lack of the capabilities and time of the public officials in charge. Even if there is a will, there are many cases where there are difficulties because there are no experts or experienced people who can help in the region. In this case, simple consulting is provided to improve the effectiveness of the project, related experts or local government officials with excellent business performance are introduced, and as an institution in charge of the public offering, we are trying to solve these difficulties by sharing past experiences and best practices. (Kim)*

Third, various factors across various fields were mentioned as other factors that could affect. The most discussed content was the interest of the head of the basic local government. This is a matter that can have a significant impact on the actual project application and selection process preparation process, but it is difficult to measure and transform it into a variable, so it was excluded from the final variable.

The factor that had the greatest influence on the qualitative review process was mentioned as the degree of cooperation of residents in the project area. To measure this, it was intended to use statistics on participation in social organizations released through the National Statistical Office's social survey, but this was also difficult to use because only metropolitan statistics were published.

However, the number of universities in the region and the number of non-profit private organizations registered in the region were derived as variables. This was based on the fact that several workers at higher education institutions or non-profit private organizations in the region are active in the process of establishing project plans in the actual project area and organizing communication between residents. In fact, the conditions of the project area are mainly established through various efforts to induce the gathering of residents living in the area and discover and create common interests. In this process, experts in related fields in the region will play a leading role. In particular, in the case of the living conditions renovation project in vulnerable areas, a general coordinator system is established to formulate this role, and professors in related fields or NGO activists working in the region will play a role. Therefore, the number of universities in the region and the number of non-profit private organization registrations were derived as the final variables that can reflect this aspect.

< Key points associated with the indicators during written expert interviews >

▷ *Looking at the successful project areas, it was a place where administrative capabilities, competent general coordinators and activists, and residents' participation matched. The general coordinator and activist are intermediate support personnel who serve as a bridge between the administration and residents, and the general coordinator serves as general planning and advisor for the entire project, and the activist plays a role in collecting opinions from residents and supporting residents' activities. In the process of performing this role, it plays a role of coordination and communication between administration and residents, so the better they play, the higher the participation of residents. (Jin)*

▷ *Establishing a project promotion support system in the early stages of the project is the most important. An important key to promoting the project is field activists. It is thought that the area where the project is carried out by utilizing the field utilization is intuitively compared to the area where there are no field activists, and the project is being carried out smoothly. (Lim)*

▷ *The residents' willingness to participate in the project is important because the project is closely related to the lives of residents, and the role of activists in the field is very decisive in creating this village atmosphere and uniting the opinions and will of residents. Therefore, it can be said that whether there are sufficient resources for activists to lead the project in the region is very important not only for the process of selecting the project but also for the successful implementation of the project. In fact, looking at the results of past project selection, there are cases where projects are continuously selected in areas with competent activists, and there are cases where activists with excellent performance in one region are involved in projects in other regions and successfully lead projects. (Kim)*

Finally, regarding the political influence that can be intervened in the selection screening process, the number of times a member of the parliament in the project area was elected was derived as a variable. This is not an official or visible factor, but it was discussed that external pressure is considered in the process of selecting a project. Since local residents who benefit from the project selection can exercise political influence through voting rights, local lawmakers and others are interested in the project selection and sometimes attempt to influence the selection process.

Therefore, this study attempted to reflect these political conditions.

Table [9] Results of deriving independent variables

		Name of independent variables
Needs Factor	Physical Environmental Factor	Percentage of old houses over 30 years (%) The proportion of vacant houses in total (%) Water supply installation ratio (%) Sewerage installation ratio (%)
	Socioeconomic environmental Factor	Percentage of the elderly population aged 65 or older (%) GRDP per person in the region (million won)
Capacity Factor		Total number of personnel of basic local government Total expenditure budget of basic local government (million won) Financial independence of local government (%)
Condition Factor		Number of times local lawmaker was elected Number of universities in the region Number of non-profit private organizations registered

3.3.2. Measurement of variables and data collection

First, internal data from the National Balanced Development Committee were obtained and utilized on the status of local governments participating in the public offering regarding whether to select the target area for the living conditions renovation project in vulnerable urban areas. In the case of the final target area selection results, the contents of the press release related to the announcement of the selection results distributed by the National Balanced Development Committee every year after the final public offering review were used.

Statistics to measure independent variables were used centering on national official statistics published in the Korean Statistical Information Service (KOSIS) and the National Balanced Development Information System (NABIS). Most of the statistics on the status of local governments published by basic local governments used data from the National Statistical Office's e-local

index, and information on each field, such as water supply, sewage, and the number of local government officials, was collected and published annually by the Ministry of Environment, Public Administration and Security. Meanwhile, information related to lawmakers was collected and organized through the Open National Assembly Information Disclosure Portal. Table [10] summarizes the detailed explanation of each variable, the source of the data, and the time of application.

Table [10] Variable descriptions and sources of data

	Variable	Explanation	Source
Dependent Variable	Whether the project target area is selected for the support project	Whether it was selected or eliminated as a target area for the support project as a result of the public offering	Internal data and press releases of the National Balanced Development Committee (2016~2022)
Independent Variables	Percentage of old houses over 30 years	The proportion of houses that have passed 30 years since completion of construction of the entire house	KOSIS e-Local Index (2015~2021)
	Proportion of vacant houses in total	The proportion of vacant houses in total	KOSIS e-Local Index (2015~2021)
	Water supply installation ratio	Percentage of installation of waterworks in the area	Water supply statistics (Ministry of the Environment) (2015~2020)
	Sewerage installation ratio	Ratio of installation of sewerage facilities in the area	Sewage Statistics (Ministry of Environment) Urban Statistics of Korea (Ministry of Public Administration and Security) (2015~2020)
	Percentage of the elderly population aged 65 or older	The proportion of the population aged 65 or older to the total population	KOSIS e-Local Index (2015~2021)
	GRDP per	GRDP per capita:	GRDP by Region: NABIS

	Variable	Explanation	Source
	person in the region	Regional GRDP (based on 2015 price) / Number of residents registered population	Population: National Statistical Office Population Survey (2015~2019)
	Total number of personnel of basic local government	Total number of public officials in the basic local government	Personnel statistics of local government officials (Ministry of Public Administration and Security) (2015~2020)
	Total expenditure budget of basic local government	The total expenditure budget of basic local governments (Integrated Financial Standards, After Final Settlement)	Local Finance 365 (Ministry of Public Administration and Security) (2015~2021)
	Financial independence of local government	The proportion of self-funded resources among the total resources of basic local governments	Local Finance 365 (Ministry of Public Administration and Security) (2015~2021)
	Number of times local lawmaker was elected	The number of times a member of a district that includes the district as a constituency has been elected	Open National Assembly Information Disclosure Portal
	Number of universities in the region	the total number of universities in the region (Including general universities, junior colleges, education colleges, and industrial universities)	KOSIS e-Local Index (2015~2021)
	Number of non-profit private organizations registered	The number of non-profit private organizations that have applied for registration with a metropolitan government and are located in the relevant area	e-Country index (Ministry of Public Administration and Security) (2015~2021)

3.4. Research hypothesis and analysis method

3.4.1. Research hypothesis

The research hypotheses according to this research model were derived into four major ones as shown in Table [11], and 12 sub-hypotheses were set for each independent variable according to each hypothesis.

Table [11] Research hypothesis

Hypothesis	Sub-hypothesis
<1> The physical environment of local governments affects the selection of support projects for vulnerable areas.	[1-1] The higher the ratio of old housing, the more likely it will be selected as a target area for support projects in underdeveloped areas.
	[1-2] The higher the ratio of vacant houses, the more often they will be selected in areas subject to support projects in underdeveloped areas.
	[1-3] The lower the water supply installation ratio, the more often it will be selected as a target area for support projects in underdeveloped areas.
	[1-4] The lower the sewage installation ratio, the more often it will be selected as a target area for support projects in underdeveloped areas.
<2> The socioeconomic environment of local governments affects the selection of support projects for underdeveloped areas.	[2-1] The higher the proportion of the elderly population, the more often it will be selected as a target area for support projects in underdeveloped areas.
	[2-2] The lower the GRDP per capita, the more often it will be selected as a target area for support projects in underdeveloped areas.
<3> The capabilities of local governments affect the selection of support projects for underdeveloped areas.	[3-1] The larger the number of public officials in local governments, the more often they will be selected as areas subject to projects to support underdeveloped areas.
	[3-2] The larger the expenditure budget of local governments, the more often they will be selected as areas subject to projects to support underdeveloped areas.

Hypothesis	Sub-hypothesis
	[3-3] The higher the degree of financial independence of local governments, the more often they will be selected as areas subject to projects to support underdeveloped areas.
<4 > The political and social conditions of local governments affect the selection of support projects for underdeveloped areas.	[4-1] The larger the number of universities in the region, the more often they will be selected for areas subject to support projects for underdeveloped areas.
	[4-2] The larger the number of non-profit private organizations registered, the more often they will be selected as areas subject to support projects in underdeveloped areas.
	[4-3] The larger the number of lawmakers elected, the more often they will be selected as areas subject to projects to support underdeveloped areas.

3.4.2. Analysis method

This study attempted to conduct hypothesis verification through empirical analysis using the SPSS statistics 21 statistical program. First, after analyzing the descriptive statistics of variables, the multicollinearity was reviewed through correlation analysis between variables and variance index factor analysis.

In addition, a binary logistic regression model was conducted to analyze the factors that influence the selection of the target area for the underdeveloped area support project. This analysis is one of the techniques used when trying to grasp the relationship between one dependent variable and several independent variables, which are binomial. In other words, it is a method of predicting whether there is a causal relationship between the independent variable and the dependent variable, to what extent it affects, and which independent variable has the greatest influence. In this study, whether or not to select a target area, which is a dependent variable, is coded as 0 and 1, and the possibility of being selected as a target area is increased according to 12 independent variables that affect the selection.

4. Analysis Results

4.1. Descriptive statistics Analysis

4.1.1. Descriptive Statistics Analysis of Dependent Variable

Looking at the descriptive statistics of the dependent variable, out of a total of 209 regions that participated in the public offering for the living conditions renovation project in vulnerable areas, 116 regions were selected as target areas, and 93 regions were not selected as target areas. This means that 55.5% of the total public offering application areas were selected as the target areas.

4.1.2. Descriptive Statistics Analysis of Independent Variables

Statistical data from 209 local governments participating in the public offering were used to measure the results of independent variables. As a result of performing basic statistical analysis through statistical data, the descriptive statistics of each independent variable are shown in Table [12].

Looking at the physical environment factors, first of all, the average ratio of old houses was 26.59% and the standard deviation was 12.29%, indicating that the gap between regions was quite large. In the case of vacant houses, the average was 10.76% and the standard deviation was 4.34%, and the water supply installation ratio was 94.59% on average and 8.30% on standard deviation. In the case of the sewage installation ratio, the average was 86.75%, and the standard deviation was 14.70%.

Looking at the socioeconomic environmental factors, the elderly population ratio was 19.94% on average and 7.69% on standard deviation, and in the case of GRDP per person, the average was 3,143.84 million won and the standard deviation was 1,972.91 million won.

Table [12] Descriptive statistics of independent variables

	Subtotal	Minimum value	Maximum value	Average	Standard deviation
Percentage of old houses (%)	209	5.00	57.50	26.59	12.29
The proportion of vacant houses (%)	209	0.70	21.80	10.76	4.34
Water supply installation ratio (%)	209	48.80	100.00	94.59	8.30
Sewerage installation ratio (%)	209	36.60	100.00	86.75	14.70
Percentage of the elderly population (%)	209	6.39	39.30	19.94	7.69
GRDP per person (million won)	209	919.94	19,539.35	3,143.84	1,972.91
Total number of personnel of local government	209	473	4766	1,074.03	658.44
Total expenditure budget of local government (million won)	209	181,122	4,714,485	902,547.75	739,999.45
Financial independence of local government (%)	209	7.50	56.80	23.39	9.72
Number of universities in the region	209	0	8	1.93	1.97
Number of non-profit private organizations registered	209	0	410	69.89	83.77
Number of times local lawmaker was elected	209	1	6	2.69	1.30
Total	209				

Looking at the capacity factors, the average size of the basic local government workforce was 1,074.03 and the standard deviation was 658.44, the average size of the expenditure budget was 902,547.75 million won and the standard deviation was 739,999.45 million won. In the case of fiscal independence, the average was 23.99% and the standard deviation was 9.72%, which was generally low.

Looking at the conditional factors, first, the minimum value was 0 and the maximum value was 8. Accordingly, the average was 1.93 and the standard deviation was 1.97. In the case of the number of non-profit private organization registrations, the minimum value was 0 and the maximum value was 410, with an average of 69.89 and a standard deviation of 83.77. The number of times a member of the National Assembly was elected was one minimum and six maximums, and accordingly, it was analyzed as an average of 2.69 times and a standard deviation of 1.30.

4.2. Correlation Analysis

This study attempted to grasp the relationship between variables through correlation analysis. Through correlation analysis, the relationship between variables can be primarily known, and the multicollinearity between variables can also be confirmed. When the correlation between independent variables is high, multicollinearity is suspected, and the effect of each independent variable on the dependent variable cannot be accurately analyzed, so it is necessary to confirm multicollinearity.

First, we tried to identify the most representative Pearson's correlation coefficient among the quantitative indices showing the correlation between variables. This correlation coefficient shows a positive (+) value if the two variables are in the same direction, a negative (−) value if they are in the opposite direction, and the degree of correlation between the two variables can be checked through the size of the value. Therefore, the relationship between actual variables was confirmed through Pearson's Correlation

Analysis. Table [13] shows the results of the correlation analysis between dependent and independent variables.

Table [13] Correlation analysis results

	Target area selection status	Old houses	Vacant houses	Water supply	Sewerage	Elderly population	GRDP per person	Number of personnel	Expenditure budget	Financial independence	Number of universities	Number of NGOs	Number of times elected
Target area selection status	1.00												
Percentage of old houses	.193**	1.00											
The proportion of vacant houses	.157*	.578**	1.00										
Water supply installation ratio	-.083	-.360**	-.410**	1.00									
Sewerage installation ratio	-.035	-.538**	-.650**	.718**	1.00								
Percentage of the elderly population	.115	.855**	.626**	-.566**	-.714**	1.00							
GRDP per person	-.052	.000	-.005	.007	-.034	-.011	1.00						
Number of personnel of local government I	.016	-.382**	-.194**	.191**	.235**	-.377**	-.014	1.00					
Expenditure budget of local government	-.033	-.323**	-.117	.087	.168*	-.278**	-.049	.899**	1.00				
Financial independence of local government	-.148*	-.643**	-.348**	.286**	.351**	-.652**	.230**	.497**	.453**	1.00			
Number of universities	-.035	-.368**	-.279**	.259**	.402**	-.467**	-.024	.571**	.521**	.284**	1.00		
Number of NGOs	.002	-.332**	-.294**	.294**	.390**	-.401**	.030	.684**	.615**	.288**	.718**	1.00	
Number of times local lawmakers was elected	.048	-.113	-.039	-.049	.051	-.025	.141*	-.027	.000	.115	.005	.002	1.00

**: Correlation is significant at level 0.01 (both sides)

*: Correlation is significant at level 0.05 (both sides)

On the other hand, to check the multicollinearity problem, which is a correlation between independent variables, as a result of checking the tolerance and variance inflation factor (VIF), it was determined that multicollinearity did not exist because the tolerance was less than 0.1 or the VIF value (minimum 1.093 to maximum 7.548) exceeded 10. Therefore, in this study, there does not appear to be a problem in which explanatory power is lowered due to the relationship between independent variables. The tolerance and VIF results of each variable are shown in Table [14]. Therefore, a binary logistic regression analysis was performed, including all 12 independent variables derived.

Table [14] Tolerance and VIF of independent variables

	Tolerance	VIF
Percentage of old houses	.216	4.623
The proportion of vacant houses	.483	2.069
Water supply installation ratio	.429	2.332
Sewerage installation ratio	.266	3.766
Percentage of the elderly population	.132	7.548
GRDP per person	.843	1.186
Total number of personnel of local government	.148	6.770
Total expenditure budget of local government	.171	5.852
Financial independence of local government	.373	2.681
Number of universities in the region	.417	2.400
Number of non-profit private organizations registered	.342	2.921
Number of times local lawmaker was elected	.915	1.093

4.3. Binary Logistic Regression

4.3.1. Suitability of the model

Finally, a binary logistic regression analysis was conducted to confirm the effect of 12 independent variables on the selection of support projects, which are dependent variables. First, various statistical results were used to examine the suitability of the binary logistic regression analysis model.

As a result of confirming the significance test of the entire model as shown in Table [15], the significance level was .007. Since it is less than .05, the model can be considered suitable.

Table [15] Overall test results of model coefficients

		Chi-square	Degree of freedom	Significance probability
Step 1	Stage	27.432	12	.007
	Block	27.432	12	.007
	Model	27.432	12	.007

Next, the value of −2LL (−2Log Likelihood) was confirmed. In general, the lower this value, the higher the model fit, and in this research model, the −2LL value was derived as 259.767, as shown in Table [18] below.

In addition, the Hosmer & Lemeshow verification method refers to the correspondence between the actual value and the predicted value of the dependent variable, and if the significance probability is greater than .05, it is interpreted as a suitable model. As shown in Table [16], the significance probability of this research model was .309, and this research model was judged as a suitable model.

Table [16] Hosmer & Lemeshow results

Classification	Chi-square	Degree of freedom	Significance probability
Value	9.403	8	.309

On the other hand, it is usually interpreted that the closer the R^2 of Cox & Snell and Nagelkerke R^2 values are to 1.0, the higher the suitability of the research model. In the case of this research model, as shown in Table [18], the R^2 value of Cox & Snell was .123, and the Nagelkerke R^2 value was .165. This means that it has explanatory power of 12.3% and 16.5%, respectively.

Finally, through the classification table, it was possible to confirm the degree to which the results analyzed by this research model matched the actual data. In other words, it means how much the results of predicting whether or not the target area was selected based on the independent variable match the actual data. As a result of the analysis, 54.8% of the unselected areas were accurately classified as unselected areas, and 79.3% of the selected areas were accurately classified as selected areas. The overall classification accuracy was 68.4%, and the overall prediction results according to this model were judged to be good.

Table [17] Classification table

	Observation	Prediction		
		Unselected	Selected	Classification accuracy (%)
Step 1	Unselected	51	42	54.8
	Selected	24	92	79.3
	Total ratio			68.4

4.3.2. Analysis Results

The results of binary logistic regression analysis to find out the effect of 12 independent variables derived from this research model on the selection of areas subject to underdeveloped area support projects are shown in Table [18] below.

Table [18] Binary Logistic Regression Results

	B	S.E.	Wald	df	Significance probability	Exp(B)
Percentage of old houses	.067	.027	6.024	1	.014**	1.069
The proportion of vacant houses	.101	.050	3.999	1	.046**	1.106
Water supply installation ratio	-.061	.029	4.371	1	.037**	.940
Sewerage installation ratio	.038	.020	3.698	1	.054*	1.039
Percentage of the elderly population	-.090	.055	2.716	1	.099*	.914
GRDP per person	.000	.000	.323	1	.570	1.000
Total number of personnel of local government	.002	.001	4.679	1	.031**	1.002
Total expenditure budget of local government	.000	.000	2.679	1	.102	1.000
Financial independence of local government	-.032	.025	1.581	1	.209	.969
Number of universities in the region	-.138	.117	1.383	1	.240	.871
Number of non-profit private organizations registered	.000	.003	.024	1	.876	1.000
Number of times local lawmaker was elected	.168	.124	1.855	1	.173	1.183
Constant	1.365	2.979	.210	1	.647	3.915
Model fit	-2LL : 259.767, chi-square : 9.403, p : .007					
R^2 of Cox & Snell	.123	**R^2 of Nagelkerke**				.165

*** : means a significance level of p < 0.01

** : means a significance level of p < 0.05

* : means a significance level of p < 0.1

As a result of the analysis, among the independent variables, the variables that statistically significantly affect the selection of support projects for underdeveloped areas are as follows. Within 5% of the significance level, the percentage of old houses (.014), the ratio of vacant houses (.046), the water supply installation ratio (.037), and the size of local government manpower (.031), one of the local government's capability factors, were found to be influential variables. In addition, at the 10% significance level, the sewage installation ratio (.054), one of the physical environmental factors, and the elderly population ratio (.099), one of the socioeconomic environmental factors were found. The remaining six variables, such as GRDP per capita, local government expenditure budget, local government financial independence, number of universities, non-profit private organization registration, and number of lawmakers elected, did not reach a significant level of 10%, which did not have a statistically significant effect on the selection of the target area.

Looking at the B value for six statistically significant variables, it is possible to determine whether the direction that affects the dependent variable and the independent variable is positive (+) or negative (-). Among the significant variables, the old housing ratio, the empty house ratio, the sewage installation ratio, and the size of the local government's workforce were found to have a B value greater than 0, which means that as the variable increases, it is often selected as a target area for support projects. In other words, the higher the ratio of old houses, vacant houses, sewage installation ratio, and the larger the size of local government personnel, the higher the possibility that the area will be selected as the target area of the support project. On the other hand, among the significant variables, variables with a B value of less than 0 were the water installation ratio and the elderly population ratio, which means that the smaller the variable, the more often it is selected as a target area. In other words, the lower the water supply installation rate in the area and the lower the proportion of the elderly population, the higher the possibility of selecting the target area.

It was not statistically significant, but looking at the B values of the remaining six variables, it was found that GRDP per capita, the size of the local government's expenditure budget, and the number of non-profit private organization registrations had no effect on the possibility of selection. In the case of the number of lawmakers elected, the higher the number of times, the higher the possibility of selecting areas for support projects, which was analyzed to have a positive (+) relationship. On the other hand, the lower the degree of financial independence of local governments and the smaller the number of universities, the higher the possibility of selecting areas for support projects, which was judged to have a negative (-) relationship.

Meanwhile, the Exp(B) value was examined to confirm the influence of the independent variable on the dependent variable. The Exp(B) value is an indicator that explains how much more likely it is to be selected as a support project target area if each independent variable increases by one unit. As a result of examining six statistically significant variables, among them, the variable that has the greatest influence on the dependent variable was the vacant house ratio (1.106). This means that if the proportion of vacant houses in basic local governments applying for public offerings increases by 1%, the possibility that the area will be selected as a support project area increases by 10.6%. In addition, looking at the variables that affect the positive (+) in order, it was found that if the ratio of old houses increases by 1%, the possibility that the area will be selected as a support project area increases by 6.9%. In addition, if the sewage installation ratio increases by 1%, the possibility of selecting the target area increases by 3.9%, and if the number of local government personnel increases by 1, the possibility of selecting the target area increases by 0.2%. On the other hand, in the case of variables that have a negative (-) effect, the possibility of selecting a target area increases by 6.0% when the water supply installation ratio decreases by 1%, and when the elderly population decreases by 1%, the possibility of selecting a target area increases by 8.6%.

4.4. Hypothesis Test and Results

This study aims to analyze the impact of 12 independent variables related to the environmental factors of basic local governments, local government capabilities, and surrounding conditions that participated in the public offering on the selection of target areas. As a result of conducting hypothesis verification based on empirical analysis, 4 out of a total of 12 hypotheses were adopted. The hypothesis and the verification results thereof are shown in Table [19].

Table [19] Hypothesis Test Results

Hypothesis	Sub-hypothesis	Result
<1> The physical environment of local governments affects the selection of support projects for vulnerable areas.	[1-1] The higher the ratio of old housing, the more likely it will be selected as a target area for support projects in underdeveloped areas.	Adopted
	[1-2] The higher the ratio of vacant houses, the more often they will be selected in areas subject to support projects in underdeveloped areas.	Adopted
	[1-3] The lower the water supply installation ratio, the more often it will be selected as a target area for support projects in underdeveloped areas.	Adopted
	[1-4] The lower the sewage installation ratio, the more often it will be selected as a target area for support projects in underdeveloped areas.	Rejected
<2> The socioeconomic environment of local governments affects the selection of support projects for underdeveloped areas.	[2-1] The higher the proportion of the elderly population, the more often it will be selected as a target area for support projects in underdeveloped areas.	Rejected
	[2-2] The lower the GRDP per capita, the more often it will be selected as a target area for support projects in underdeveloped areas.	Rejected

Hypothesis	Sub-hypothesis	Result
<3> The capabilities of local governments affect the selection of support projects for underdeveloped areas.	[3-1] The larger the number of public officials in local governments, the more often they will be selected as areas subject to projects to support underdeveloped areas.	Adopted
	[3-2] The larger the expenditure budget of local governments, the more often they will be selected as areas subject to projects to support underdeveloped areas.	Rejected
	[3-3] The higher the degree of financial independence of local governments, the more often they will be selected as areas subject to projects to support underdeveloped areas.	Rejected
<4 > The political and social conditions of local governments affect the selection of support projects for underdeveloped areas.	[4-1] The larger the number of universities in the region, the more often they will be selected for areas subject to support projects for underdeveloped areas.	Rejected
	[4-2] The larger the number of non-profit private organizations registered, the more often they will be selected as areas subject to support projects in underdeveloped areas.	Rejected
	[4-3] The larger the number of lawmakers elected, the more often they will be selected as areas subject to projects to support underdeveloped areas.	Rejected

The results of hypothesis verification are as follows.

First, regarding the physical environmental factors, sub-hypotheses [1-1], [1-2], and [1-3] were adopted as the results of regression analysis were significant. In other words, the higher the ratio of old houses, the higher the ratio of vacant houses, and the lower the water supply rate, the more often they are selected as areas subject to support projects in underdeveloped areas. The ratio of old houses and vacant houses is included in the selection criteria for areas subject to support projects, and the adoption of

sub-hypotheses as a result of empirical analysis means that the indicators play an appropriate role as selection criteria. This is consistent with the opinion of experts who emphasized that the ratio of old houses and vacant houses is an important indicator that plays a key role among physical indicators in the selection process of variables. Although the water supply installation ratio is not included as an indicator in the target area selection criteria, it is a key infrastructure that determines the quality of life of residents, so only a few areas have a low installation ratio.

However, in the case of the sewage installation ratio, it was initially predicted that the lower the installation ratio, the more often it was selected as the target area, but the empirical analysis showed that the higher the sewage installation ratio, the more often it is selected as the target area. This is the opposite result of the prediction, and accordingly, hypothesis [1-4] was rejected. As a result of descriptive statistical analysis, the average sewage installation ratio was 86.75%, which was lower than the average water supply installation rate of 94.59%, while the standard deviation of the sewage installation ratio was 14.70, which was significantly larger than the standard deviation of the water supply installation rate of 8.30. This means that there are still relatively many areas with insufficient sewage facilities, and that there are many areas with extreme vulnerability as areas where the sewage installation ratio is significantly below the average.

Therefore, the analysis results are judged to reflect the specificity of the process of selecting living conditions renovation projects in vulnerable areas. The project is basically a project that induces residents to live and settle down continuously through the improvement of living conditions and facility investment. Therefore, despite the government's financial support, there is no room for improvement in living conditions, and in areas where the underdeveloped level has already reached a serious level or decline is rapidly taking place, it tends to be excluded from the candidate sites for the target area. In fact, some abandoned mining areas and mountain slopes areas were excluded from the target area because

they judged that there was little room for improvement through small-scale financial support, even though the physical vulnerability of the area was very serious. This is because it was judged that it was more appropriate to create a new residential area for massive urban regeneration projects or group migration. Areas with significantly low sewage installation rates (Kanghwa-gun, Hoengseong-gun, Buyeo-gun, Seocheon-gun, Cheongyang-gun, etc.) are likely to fall under this exceptional area among many underdeveloped areas, which can be interpreted as having different results than originally predicted.

Second, concerning socioeconomic environmental factors, both hypotheses [2-1] and [2-2] were rejected. In the case of the elderly population ratio, it was analyzed that the elderly population ratio and the selection result of the target area were statistically significant. However, the initial prediction was that the higher the proportion of the elderly population, the more often it is selected as a target area for support projects, but contrary to the prediction, the opposite analysis result was derived and the sub-hypothesis was rejected. In other words, the lower the proportion of the elderly population, the more often it is selected as a target area for support projects.

In general, areas with high vulnerability were predicted to have a high proportion of the elderly population due to stagnant growth and low population movement, but it is judged to have different results from the original prediction by reflecting the characteristics of the residential area preferred by the elderly. In general, it becomes difficult for the elderly to use driving or public transportation due to the progress of aging, narrowing their living boundaries, and it is very important to have convenient facilities such as medical care and household support in places where they can walk. (*Report on the results of the 2020 Survey on the Elder*, 2020) The elderly do not prefer housing movement but tend to prefer living in urban areas with good infrastructure (*Survey on Housing Status in 2020*, 2021). Due to the specificity of the preferred residential area of the elderly, it can be interpreted that

the lower the proportion of the elderly population, the higher the possibility of selecting the target area.

The effect of the remaining socioeconomic environmental variables, GRDP per capita, on the selection of areas subject to the support project was not statistically significant, and the [2-2] sub-hypothesis was rejected.

Third, regarding the capability factors of local governments, Sub-hypothesis [3-1] was adopted, which examined the effect of the manpower size of local governments. As originally predicted, if there are many local government personnel, there may be more dedicated personnel to support projects, and there are abundant resources in the organization to share related experiences and knowledge. However, sub-hypotheses [3-2] and [3-3] examining the effect of local governments' expenditure budget size and fiscal independence on dependent variables were rejected because they did not show statistically significant results. Comprehensively looking at these results, it means that the size of manpower rather than the financial ability of local governments is a key factor in determining whether to select areas subject to support projects. However, the fact that the size of local government personnel affects the selection of target areas is not only undesirable because it does not help achieve the policy goal of supporting underdeveloped areas, but it also runs counter to the policy goal by selecting large and well-conditioned local governments.

Fourth, regarding the conditional factors, all hypotheses examining the effects of three variables, the number of universities, the number of non-profit private organization registrations, and the number of lawmakers elected, were rejected because they did not show statistically significant results. These variables were derived through expert interviews, but it is difficult to see them as factors that can directly affect the selection. Although there are actually individual cases that can affect whether each conditional variable is selected, it can be interpreted that it is difficult to generalize and explain this.

5. Conclusion

5.1. Summary and Implications of Research Results

This study analyzed the impact of the environment, capabilities, and surrounding conditions of basic local governments on the selection of areas subject to underdeveloped area support projects. Through this, it was intended to verify that the existing project area selection criteria are working effectively and to derive implications for increasing the validity of the method of selecting the target area for the support project by identifying factors other than the selection criteria.

To analyze this, the dependent variable was set as whether it was selected as a target area for support projects for underdeveloped areas in the public offering procedure for local governments, and 12 factors that could affect the dependent variable were derived as independent variables as follows. Among the demand factors, the ratio of old houses, the ratio of vacant houses, the water supply installation ratio, and the sewage installation ratio were set as physical environmental factors, and the ratio of the elderly population and GRDP per capita were set as socioeconomic environmental factors. As the capability factors of local governments, the size of local government manpower, the size of local government expenditure budget, and the degree of financial independence were derived. In addition, the number of universities, the number of non-profit private organizations, and the number of lawmakers elected were selected as conditional factors. For the 12 independent variables, national approval statistics published by the Korean Statistical Information Service (KOSIS) and the National Balanced Development Information System (NABIS) and official statistics compiled annually by each administrative agency were used.

Based on the statistical data organized in this way, descriptive statistical analysis, correlation analysis between

variables, and multicollinearity verification were performed for the accuracy of the analysis. In addition, factors influencing the selection of regions subject to the support project were derived through binary logistic regression analysis. As a result of the verification, the factors influencing the selection of the target area for the underdeveloped area support project were analyzed as follows.

First, the ratio of old houses and vacant houses, which are stipulated as physical indicators in the selection criteria for support projects for underdeveloped areas, is a factor that affects the selection of target areas. The higher the ratio of old houses and vacant houses in the region, the higher the vulnerability of the residential environment, causing inconvenience in the lives of residents due to hygiene or safety. This is because old or vacant houses hinder the scenery of the village and cause crime. In this case, residents' desire to improve living conditions through support projects increases, and such demands from residents become a driving force for local governments to actively participate in the public offering of support projects. Therefore, the higher the ratio of old houses and vacant houses, the more participated in the public offering of support projects for underdeveloped areas, and the more often they are selected as target areas. On the other hand, since the ratio of old houses and the ratio of vacant houses are one of the indicators used as the current criteria for selecting target areas, it can be confirmed that the current criteria for selection are working effectively.

Second, the water supply installation ratio is also a factor affecting the selection of areas subject to the support project. The water supply is the most basic and key facility for residents' hygienic lives. Most metropolitan areas have 100% supply of water supply facilities, but in mountainous or steep areas where physical access to equipment for installation is poor, even water supply facilities may be insufficient. In this case, it is overcome by procuring drinking water through groundwater or installing separate water supply facilities, but the demand for improvement of living

conditions through support projects increases due to the high inconvenience of residents' lives. As a result, the lower the water supply installation ratio, the more often it is selected as a target area for support projects in underdeveloped areas. Therefore, it is desirable to consider reflecting the water supply installation ratio in the future selection criteria for the target area.

Third, among socioeconomic factors, the proportion of the elderly population is a factor that affects whether or not the area subject to the support project is selected, but the lower the proportion of the elderly population, the higher the possibility of selection. Therefore, it seems necessary to further verify whether it is appropriate to continuously include the indicators in the selection criteria for the elderly population ratio currently included in the selection criteria.

Finally, the size of the manpower of basic local governments is a factor that affects the selection of areas subject to support projects. In the case of basic local governments operated with a limited number of people, there are quite a variety of tasks that one person in charge has to deal with. Therefore, even in the case of basic local governments that want to promote projects to support underdeveloped areas, they will be given additional tasks to those in charge of related tasks rather than securing dedicated personnel. In this case, it will be difficult for the person in charge to be in charge of preparing for the public offering and responding to the procedure, which will inevitably have a negative impact on the entire process of selecting the target area. In addition, considerable advance preparations are needed for the public offering of support projects, including a thorough preliminary survey of candidate sites in the target area, identifying residents' requirements, forming a consensus to draw cooperation from residents, and establishing a customized project plan. Therefore, the manpower problem of the local government can be a factor that significantly affects the screening process from the stage of the public offering. In addition, if local governments have past implementation cases and experiences, the person in charge can receive a lot of help from

them, and if the number of members of the organization is limited, there are considerable restrictions on receiving such assistance within the organization. As a result, it seems easy for basic local governments with large manpower to be selected as areas subject to support projects. However, the fact that the size of the workforce affects the selection of the target area is not a result that meets the policy goals to be achieved by the support project for underdeveloped areas, so it is necessary to improve the selection system in the future.

5.2. Policy Implications

This study attempted an empirical analysis of the factors affecting the selection of support projects for underdeveloped areas. In fact, there are countless factors affecting the selection results of target areas in the public offering review process, and there are many factors that are difficult to reflect in empirical analysis through variable derivation, such as consideration of equity between regions, status of target areas in the past, and achievements of past project areas. Nevertheless, the following implications and policy implications could be derived from the research results.

First, it is necessary to further solidify the current selection criteria that use the physical environment as a key indicator of selection to determine the vulnerability of the region, and to this end, it is necessary to reorganize the selection system of the region subject to the support project.

In this study, it was confirmed that physical environmental standards such as the ratio of old houses, the ratio of vacant houses, and the water supply installation ratio act as key criteria in selecting areas subject to underdeveloped area support projects. It is evaluated as a desirable result considering the policy goal in that the target area is selected based on the objective regional status. Therefore, it is necessary to clarify the current policy direction that values the physical environment conditions by reorganizing it to

increase the validity of the current selection criteria.

To this end, it is necessary to change the current business area selection method from the existing public offering method (Bottom-up approach) to a new system. For the balanced development of the country, it is very important to grasp the current status of underdeveloped areas nationwide. The new system means setting indicators for the physical environment from a national perspective to comprehensively assess the level of housing vulnerability, allow the region to pursue support projects, and transform it into a system that helps establish regional project plans. If the government selects an area that can promote support projects based on physical environmental conditions as a top-down approach, various exogenous factors that may affect the local government's public offering review process can be blocked. Therefore, it is possible to select a target area that meets the goal of the more support project, and it can also help the country's policy goal of ensuring that all citizens enjoy a minimum standard of living. To change the system, national standards such as the minimum residential environment standard should be prepared and applied in a format similar to the minimum residential standard, and the validity should be increased through continuous verification. On the other hand, as a way to gradually reorganize the public offering method, local governments with a high level of housing vulnerability can consider increasing the number of selected areas for the support project, allocating additional budgets, or granting additional points in the public offering process.

Second, it is necessary to simplify the public offering procedures and forms so that the administrative or financial burden of local governments participating in the public offering of support projects can be reduced. Through this study, it was confirmed that the size of the manpower of local governments participating in the public offering affects whether or not the target area is selected. This means that participating in the public offering process itself causes a considerable administrative burden, and this burden also acts as a factor in giving up participation in the public offering

process for local governments operated with a very small number of workers. Most of the support projects in underdeveloped areas require a considerable amount of project plans to participate in the public offering, and the relevant status survey results and evidence are required to be separately submitted to prove whether the standards are met. This causes a considerable administrative burden on local government officials, and it is true that there are many local governments that spend additional expenses by selecting service institutions by investing a separate budget to prepare them. The problem is that when the project is selected in the target area and the project is carried out, it is extremely rare that the previously submitted project plan is properly utilized. This is because the status of the first survey changes over time, and the conditions of the project site change frequently. As a result, a lot of manpower and budget are wasted in simply participating in the public offering process and responding to the review.

Therefore, it is desirable to gradually simplify the public offering procedure and format to allow support projects to be selected in areas with a high need for support and to minimize wasted resources in the selection process. It is necessary to utilize the selection criteria centering on the physical environment indicators, but exclude indicators that can be directly used through national statistics from the scope of submission. In other words, it is desirable to minimize the scope of local government's preparation and submission, and reduce statistics that require a status survey that causes excessive work burden on local government officials from the selection criteria. In addition, it is possible to consider changing the execution system of the project. For example, it is also possible to significantly reduce the work burden of local governments related to the written application submitted at the time of the application for the public offering, but to supplement it through on-site evaluation. In addition, there is also a method of canceling the project or adjusting the size of the project by conducting verification after being selected as a target area through screening. On the other hand, the simplification problem is also an

area that can be partially resolved when converted to the top-down project promotion system discussed above.

Third, to increase the validity of the selection of areas subject to support projects for underdeveloped areas, it is necessary to strengthen the representation and independence of the review committee, which has the authority to make final decisions. The expertise of the review committee, composed of experts in related fields, is still quite high, but efforts are needed to understand the purpose and content of the support project in depth and to form a consensus on the direction of the review before the full-fledged review. In the screening process, judges are often exposed to external pressure, and measures to block this are also a part of the design of the screening process.

Finally, a control tower is needed to provide comprehensive management of support projects for underdeveloped areas distributed to various administrative agencies. This means a comprehensive institution that can establish directions for support projects for underdeveloped areas for each residential vulnerable area with high underdeveloped levels and strengthen coordination and linkage between projects. As there are many support projects with similar purposes and contents, it is necessary to maintain the balance between regions from the perspective of the entire country, adjust overlapping or conflicting parts, and benchmark the advantages of each project. If such a comprehensive institution exists, it will not only reduce the burden on local governments that promote support projects, but it will also be of great help to continuously maintain support projects and create results.

5.3. Limitations of research and Future research tasks

This study has limitations in various dimensions such as analysis model, selection of variables, analysis unit, analysis target, analysis data and interpretation of the results, and follow-up research is needed for this.

First, regarding the analysis model, this study attempted to find the factors influencing the selection of areas subject to support projects through binary logistic regression analysis, but this study model was found to have a low explanatory power of 12.3-16.5%. There were not many previous studies in related fields, so we tried to derive independent variables through expert interviews, but this process alone had limitations in deriving effective independent variables that affect the selection of target areas. To supplement this quantitative analysis method, qualitative research such as in-depth interviews or case analysis with managers or experts who are deeply involved in the selection process of support projects for underdeveloped areas is needed.

Second, it was found that there were several cases in which the correlation between independent variables was high regarding variable selection. Multicollinearity was verified through tolerance and VIF. However, since the physical environment level and the socio-economic level of the region based on it are bound to be interlinked, the correlation between independent variables is bound to be high. As a result, this can act as a factor that hinders the explanatory power of the model. This can be overcome through additional research for the discovery of appropriate control variables and the selection of highly representative independent variables.

Third, regarding the analysis unit, support projects in underdeveloped areas are often carried out in small village units, not in administrative districts of basic local governments, but statistics that can be obtained are published in each administrative

district of basic local governments, which is far from the actual support project. Even in areas located in the same administrative district, the residential environment can vary greatly by village and alley, but the current statistics of small units were virtually difficult to produce and obtain, so there was a limit to deriving valid analysis results.

Fourth, regarding the analysis target, this study attempted to conduct an overall analysis of support projects for underdeveloped areas, but there was a limit to collecting data on support projects for underdeveloped areas, except for the living conditions renovation project in vulnerable urban areas. Public offerings for basic local governments are the process of making decisions within administrative agencies from the initial application to the announcement of the final results. Therefore, administrative agencies in charge of public offerings were often reluctant to provide data outside, and as a result, only a limited range of analysis was inevitable. In the case of other support projects, it is judged that additional research can be conducted in the future through information disclosure.

Fifth, regarding the analysis data, in the case of national approval statistics, statistics at the basic local government level were often not published. For example, through an expert interview, variables such as the number of households below the minimum housing standard and the ratio of basic living beneficiaries were originally derived and included in the analysis as significant factors affecting the selection of the target area. However, both indicators were difficult to use for analysis as only statistics at the metropolitan local government level were published.

Finally, regarding the interpretation of the results, this study reviewed the selection of variables based on the indicators included in the current support project selection criteria, and attempted statistical verification focusing on factors that are expected to affect the selection results while examining the actual selection process. Therefore, it can be said that it is a study that can help determine whether the current project selection process is properly

designed and operated. Therefore, more in-depth research will be needed to identify more substantial factors influencing the selection of target areas for support projects promoted by the government.

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국문초록

낙후지역 지원사업의 대상지역 선정 요인에 대한 연구
- 지방자치단체의 여건을 중심으로 -

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모든 국민은 양호한 환경에서 살아갈 권리를 갖고 있으며, 국가는 국민들이 최소한의 삶의 질을 유지하고 인간다운 생활을 영위할 수 있는 환경을 만들 의무를 가지고 있다. 국가는 이런 의무를 이행하기 위해 재정을 투입하여 열악한 생활환경 개선과 지역사회 활성화를 도모하는 다양한 낙후지역 지원사업을 추진하고 있다. 다양한 행정기관에 분산되어 추진되고 있는 낙후지역 지원사업들은 공통적으로 물리적 환경이 취약하여 주민들의 안전과 위생이 위협받고, 경제적 여건이 열악한 지역을 대상으로 하고 있다. 대형 프로젝트는 아니지만 이들 사업은 주민들의 수요를 기반으로 하는 사업설계와 단기간 동안의 가시적 성과 등을 이유로 긍정적인 평가를 받고 있다.

긍정적인 평가에도 불구하고, 사업 대상지역을 선정하는 과정에 대해서는 문제점이 지적되고 있다. 대상지역 선정방식이 일정 기준에 미달하는 낙후지역을 대상으로 일괄 지원하는 방식(Top-down)이 아니라 지원이 필요하다고 주장하는 지방자치단체가 지원사업을 신청하면 심사를 통해 선정하는 방식(Bottom-up)으로 진행되기 때문이다. 이러한 지자체 공모 방식은 모든 지역에 기회를 균등하게 제공하는 공평한 시스템으로 보이지만, 선정 과정과 절차상 한계로 인해 공평한 경쟁이 이루어진다고 보기 어려운 측면이 있다. 결과적으로 일부 사례의 경우 낙후지역 자체로 분류하기 어렵거나 낙후되었더라도 사업의 선정기준에 적합하지 않은 지역이 선정되기도 한다.

따라서, 본 논문은 지역의 물리적 또는 사회경제적 환경, 공모를 신청하는 기초 지방자치단체의 역량, 정치사회적 주변 여건 등이

낙후지역 지원사업의 대상지역 선정여부를 결정하는데 미치는 영향을 분석하였다. 이를 통해 기존의 대상지역 선정기준이 유효하게 작동하고 있는지 검증하고, 선정기준 이외에 영향을 미치는 요인을 찾아냄으로써 지원사업 대상지역 선정방법의 타당성을 높일 수 있는 시사점을 도출하고자 하였다.

이를 분석하고자 종속변수를 공모 절차에서 낙후지역 지원사업 대상지역으로 선정되었는지 여부로 설정하고, 독립변수를 수요 요인, 지자체 역량 요인, 주변 여건 요인으로 나누어 분석을 실시하였다. 첫번째, 수요 요인은 물리적 환경 요인으로 노후주택 비율, 빈집 비율, 상수도 보급률, 하수도 보급률을, 사회경제적 환경 요인으로 노인인구 비율, 1인당 GRDP를 적용하였다. 두번째, 역량요인으로 지자체 인력 규모, 지자체 세출예산 규모, 재정자립도를 설정하였다. 세번째, 주변 여건 요인으로 대학 수, 비영리 민간단체 등록건수, 국회의원 당선횟수를 적용하였다. 분석을 위해 국가통계포털(KOSIS)과 국가균형발전 종합정보시스템(NABIS)을 통해 공표된 국가승인통계와 각 행정기관에서 발표하는 공식통계를 활용하여, 이항 로지스틱 회귀분석을 통해 독립변수와 종속변수 간의 관계를 검증하였다.

분석결과는 다음과 같다. 첫째, 낙후지역 지원사업 선정기준에서 물리적 지표 중 하나로 규정하고 있는 노후주택 비율, 빈집 비율, 하수도 보급률은 대상지역 선정여부를 결정하는 데 영향을 미치는 요인이다. 그러나, 하수도 보급률은 예측과 달리 하수도 보급률이 높을수록 대상지역 선정가능성이 높아진다. 둘째, 상수도 보급률은 현재 대상기준 선정기준에 포함되어 있지 않으나 대상지역 선정여부를 결정하는 데 영향을 미치는 요인이다. 셋째, 노인인구 비율은 대상지역 선정에 영향을 미치는 요인이나, 예측과는 달리 노인인구 비율이 낮을수록 선정 가능성이 높아진다. 넷째, 기초 지방자치단체의 인력 규모 즉, 공무원의 수는 대상지역 선정 여부에 영향을 미치는 요인이다.

연구 결과를 통해 다음과 같은 시사점과 정책적 함의를 도출할 수 있었다.

첫째, 지역의 낙후도를 판별할 수 있는 물리적 환경 지표를 대상지역 선정의 핵심기준으로 활용하고 있는 현재의 선정기준을 보다 공고히 할 필요가 있다. 이는 현재의 선정기준에 포함된 다수의 지표가 대상지역 선정과정에서 유효한 지표로 기능하고 있음을 확인할 수 있었기 때문이다. 다만, 타당성을 높이는 방향으로 선정기준을 보완할 필요가 있다. 현재의 선정기준에 상수도 보급률을 추가하고, 하수도

보급률 및 노인인구 비율은 제거 또는 비중을 낮추는 방안 등을 고려해볼 수 있다. 한편, 장기적으로는 현재의 사업지역 발굴 방식을 기존의 공모방식에서 벗어나 국가가 지역의 주거취약 수준을 종합적으로 평가 후 낙후지역에 사업 추진 기회를 부여함과 함께 사업계획 수립을 지원하는 시스템으로 전환할 필요가 있다. 이러한 방식으로 전환하는 경우 객관적인 선정기준 이외에 공모심사 과정에서 영향을 미칠 수 있는 다양한 외생적 요인을 차단할 수 있기 때문이다.

둘째, 지원사업 공모에 참여하는 지방자치단체의 행정적 또는 재정적 부담을 경감시켜줄 수 있도록 공모절차와 형식을 간소화할 필요가 있다. 공모 절차에 참여하는 것 자체가 지방자치단체에 상당한 행정적 업무부담을 유발하고, 준비과정에서 재정부담을 야기하기 때문이다. 절차와 형식의 간소화는 지방자치단체의 역량 자체가 대상지역 선정에 미치는 영향을 최소화함으로써 지원 필요성이 높은 지역이 대상지역으로 선정될 수 있도록 할 뿐 아니라 선정 과정에서 낭비되는 자원을 최소화하기 위해서도 필요하다.

셋째, 낙후지역 지원사업 대상지역 선정의 타당성을 높이기 위해 최종 결정 권한을 가지고 있는 심사위원회의 대표성과 독립성을 강화할 필요가 있다.

넷째, 여러 행정기관에 분산되어 실시되고 있는 낙후지역 지원사업을 총괄적으로 관리할 수 있는 종합 컨트롤 타워가 필요하다. 분산 추진되고 있는 낙후지역 지원사업을 통합 및 조정하고, 상호 시너지를 거둘 수 있도록 관리하는 기관이 있다면 지방자치단체의 부담도 경감될 뿐 아니라 지원사업의 지속적인 유지관리와 성과 창출에도 큰 도움이 될 수 있을 것이다.

Keyword : 낙후지역, 낙후지역 지원사업, 사업 대상지역, 선정요인, 공모
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