

Article

Financial Support for Neighborhood Regeneration: A Case Study of Korea

Doil Kim  and Kabsung Kim *

Department of Urban Planning and Engineering, Yonsei University, Seoul 03722, Korea; doyleluv@gmail.com

* Correspondence: kabsung@yonsei.ac.kr

Abstract: This study examined the relationship between financial support and neighborhood regeneration in Korea. A questionnaire about neighborhood regeneration projects was administered to 175 Korean respondents in the regeneration field. Results found that the housing revitalization project needed more public funds than private funds for successful outcomes. The private sector participation project required public-private cooperation. The local economy vitalization project needed public funds to build infrastructure. The local living improvement project needed public funds for infrastructure. The local living network project could be led by public funds including the facility fund. The local economy operation project required public and private funds for local programs and facility support. The results offer the optimization of financial support efficiency by providing customized support funds for neighborhood regeneration projects.

Keywords: urban regeneration; neighborhood regeneration; financial support; Korea



Citation: Kim, D.; Kim, K. Financial Support for Neighborhood Regeneration: A Case Study of Korea. *Sustainability* **2022**, *14*, 8582. <https://doi.org/10.3390/su14148582>

Academic Editors: Annarita Ferrante and Boris A. Portnov

Received: 16 March 2022

Accepted: 9 July 2022

Published: 13 July 2022

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1. Introduction

Today's urban regeneration aims to meet cities' economic, environmental, and social needs [1]. Developed countries have focused on urban regeneration to follow this global trend. One of these countries is Korea, which has recently undergone rapid transformations through proactive urban regeneration. The definition of urban regeneration reflects the country's geographic, social, and economic contexts [2]. Korea enacted the Special Act on Urban Regeneration and Support (SAURS) in 2013 and promoted urban regeneration projects [3]. The SAURS classified urban regeneration into either the urban economy or the neighborhood. Urban economy indicates large-scale projects and requires infrastructure development. Neighborhood regeneration carries out small-scale projects with a small budget to improve living conditions at the local level. Such improvements can generate a positive externality (e.g., better resident life quality) that brings sustainable neighborhood development [4]. Neighborhood regeneration attempts to improve living conditions, expand local living infrastructure, revitalize the neighborhood, and revive the local economy [5]. Neighborhood regeneration is also related to the community's demographic characteristics and geographical attributes of infrastructure [6].

Research on neighborhood regeneration has increased in recent years [7]. For example, Jang addressed that urban regeneration can be elaborated when neighborhoods are considered [8]. Lee and Ahn suggested intermediary support organizations' essential role in neighborhood regeneration [9]. Past research also found social economy entities for financial support [10] and the private sector's [11] participation in financial support. However, limited research has been done on sustainable neighborhood regeneration financial support [12–14]. The present financial support is made for entire project funds rather than for specific funds. To increase efficiency, customized financial support for each project needs to be established [15,16]. Mehaffy, Salingeros, and Kryazheva state that the contemporary urban development system is deficient in producing economies of differentiation [4]. To balance scales and places, a specification on diversification and adaptation to changing

conditions is needed. Tailored financial support for neighborhood regeneration is one of the specifications and differentiation.

Using data from Korea, this study aimed to derive customized financial support for each neighborhood regeneration project. To accomplish the research goal, this study examined (1) neighborhood regeneration projects that need financial support and (2) financial support funds for neighborhood regeneration projects and items. This study adapted a pattern language of neighborhood regeneration to questions and answers. A pattern language refers to a coherent set of patterns in which a problem and a solution are provided in the urban development field [4]. The problem in this study is a lack of tailored financial support for different neighborhood regeneration projects. Finding funds for neighborhood regeneration can offer solutions for financial support efficiency.

2. Literature Review

2.1. The Definition and Status of Urban Regeneration

Urban regeneration has received attention as it emerges to resolve population decline, population aging, industrial decline, and housing and infrastructure aging in cities worldwide. Urban regeneration is considered a multidisciplinary model that includes urban planning, the economy, and housing policies [17,18]. Urban regeneration today opposes physical growth. Instead, the urban regeneration approach attempts to resolve social problems of the current society, such as population decline and urban aging [19]. The meaning of urban regeneration today includes resident- and community-centered participation. A broader conceptualization of urban regeneration has also been related to local asset utilization. In the environmental aspect, urban regeneration indicates eco-friendliness and sustainability [9]. As such, urban regeneration can be an integrated change of physical, economic, social, and ecological structures by inducing actions in urban projects [20].

2.2. The Status and Recent Trend of Neighborhood Regeneration

Drawn from the urban regeneration perspective, neighborhood regeneration means an integrated enhancement of economic, social, and environmental structures at the neighborhood level. A neighborhood indicates both the 'close' physical distance and the 'neighboring' social distance. Neighborhood regeneration aims to resolve problems in local society caused by local communities. Neighborhood regeneration is also a driving force of urban development for collective local productivity. Therefore, neighborhood regeneration can develop into urban regeneration [8]. Neighborhood regeneration improves well-being and social environments [21]. There are multiple elements for successful neighborhood regeneration.

First, one element is resident participation, because residents know local problems best and can provide innovative ideas to resolve them [22,23]. Resident participation can prevent crimes through social separation [24]. Resident participation is needed for sustainable local development [14]. Kim [25] noted that long-term and sustainable spatial regeneration systems of the government, public-private sectors, and local communities are needed to execute projects suitable for local conditions. Jeon [11] addressed that the sustainability of neighborhood regeneration stems from residents' voluntary participation. As such, neighborhood regeneration accommodates sustainable regeneration through resident participation [26]. In Barcelona—to cite an international example—the government emphasized resident participation in smart city establishment. Resident participation was a crucial element in the project implementation process [27]. There is a growing perception that the private sector must engage in job creation projects [26] and that strategies must be developed to draw resident participation in neighborhood regeneration projects [28].

Second, intermediary support organizations are another element [8]. Intermediary organizations positively influence neighborhood regeneration through networks [29]. In Korea, neighborhood regeneration support organizations play an intermediary role [3]. In Brazil, the Favela-Bairro program used intermediary support organizations to induce resident participation in neighborhood regeneration [30]. "Elemental"—a building project

group as an intermediary support organization—used a government subsidiary to build houses in the central urban area [31]. Another example is the UK's Coin Street Builder. The Coin Street Builder performs as a neighborhood regeneration support center for the local community [32].

Third, another component is local assets. Mayer [33] defined local assets as a component of community activities, support, and technology for problem-solving based on local strengths. Local assets include materialistic resources (e.g., cultural heritage) and non-materialistic resources (e.g., local identity) [34]. Some examples of neighborhood regeneration utilizing local assets include the Geonyang Salon project in Changsin-dong, Seoul, Korea utilizing Hanok, traditional Korean houses [35], and the Lilac Garden project in Daegu city utilizing the house of the late poet Lee Sangwha and an alley by the house [36]. Cosmo 40 in Seo-gu Incheon city, Korea is the case that established an anchor facility for a regeneration space hub using an abandoned factory. This abandoned factory regeneration project was to remodel the Cosmo chemical refinery plant in Seo-gu, Incheon into a cultural space [36]. Through these local assets, people gathered in the area and neighborhood regeneration was expanded. Such neighborhood resources and activities are important local assets [4].

Fourth, social economy entities such as community, private, or social enterprises can ignite sustainable neighborhood regeneration. The local economy needs to be rooted in underdeveloped areas and be self-sufficient [37]. Kwak, Bae, and Kim [38] examined problem-solving for underdeveloped local society through local community vitalization. The core entities of local economy vitalization include social economy entities. Social economy entities can foster coworking, cultural, and co-living spaces that profit organizations may not handle [39]. Kim and Nah [40] discussed that social economy entities aim at providing social services and jobs to underserved populations. Jeon and Byun [41] found a positive influence of social economy entities on sustainable development. Jang and Moon [42] emphasized social economy entities for neighborhood regeneration.

2.3. Financial Support for Neighborhood Regeneration

Financial support for neighborhood regeneration is needed for sustainable community development [28]. Related past research has been conducted on the necessity of the private sector's participation in sustainable neighborhood regeneration. Another group of studies has been done on comprehensive financial support to increase efficient strategies.

First, the private sector's participation can lead to sustainable neighborhood regeneration [43]. Private participation is possible only when profitability is guaranteed. The role of the NHUF (National Housing and Urban Fund) is needed in profitability-based projects [44]. The NHUF is run by the Korea Housing & Urban Guarantee Corporation and the Ministry of Land and Transportation of Korea to support investments, loans, and public guarantees in urban and neighborhood regeneration. Therefore, the role of the Korea Housing & Urban Guarantee Corporation and the NHUF is essential to draw private sector participation along with public support [45]. Public-private cooperation is present in private-sector financial participation. In Japan, MINTO is an agency that implements urban development projects based on the Private City Development Special Act. The agency provides consulting, advising, supporting subsidiaries, and loans in project implementation [28]. This project uses a matching fund to support the projects. This case tells that the private sector accommodates project security and sustainability. A representative example includes Machitzkuri (a village building movement). In transforming the declining downtown of Kokura city into a renovated Machitzkuri movement, this project triggered a five-year-long change in the village through a private-led government-private partnership. The Renovation School, which studies remodeling utilizing unused real estate, acted as a critical driver, contributing to building regeneration and enhancing local value [32].

Second, social financial institutions as intermediary support organizations can be utilized for neighborhood regeneration. For example, the CDFI (Community Development Financial Institution) of the US contributes to local revitalization as an intermediary support

organization. The CDFI promoted local economic development with the funds of the Ministry of Finance. Main programs include financial assistance (FA) with CDFIs. Another program is certified CDFIs and technical assistance (TA) that support equipment purchase, contract costs, incentive payment, and training costs. Certifications are provided to financial institutions that are dedicated to local social development.

Third, comprehensive financial support for location-based neighborhood regeneration can be conducted. The Community Development Block Grant (CDBG) of the US and the Single Regeneration Budget of the UK are examples. The location-based support going beyond project units has positive effects on neighborhood regeneration projects because the support can be targeted [46]. The subjects of support are not limited to local governments. The support goes to local social organizations and governance as well. The funds support hardware, including pre-project planning, competence, facility development, and software, such as technological, personnel, and resident competence [47].

3. Research Questions

As reviewed, previous research on financial support factors for neighborhood regeneration encompasses local assets, social economy entities, resident participation, private sector finance participation, intermediary support organizations, and comprehensive financial support. These studies have been used to create projects for neighborhood regeneration financial support. However, research on efficient and tailored financial support for neighborhood regeneration is relatively limited. The present financial support is conducted in the form of the entire cost rate (e.g., 70 percent of all projects). Specific and detailed financial support strategies for each project are needed for efficiency. In implementing neighborhood regeneration, multiple steps from planning to securing spaces and execution are needed. Further, differential strategies for financial support at each step are required.

Through a systematic analysis of past regeneration proposals, an administration of a survey, and an in-depth interview of experts in the field, this study offers solutions to fitting financial support funds for neighborhood regeneration projects in the pattern language methodology [4]. Therefore, this study conducted an analysis of financial support strategies for neighborhood regeneration projects. In turn, the analysis classified neighborhood regeneration into projects and items and provided financial support strategies for them from a survey. The research questions guiding this study seek financial support plans for neighborhood regeneration.

RQ1: How is financial support related to neighborhood regeneration projects?

RQ2: What financial support fits neighborhood regeneration projects?

4. Method

4.1. Project and Item Design for Neighborhood Regeneration

This study aimed to propose financial support that fits neighborhood regeneration. To this end, first, the classification of neighborhood regeneration projects and item formation were implemented. Second, prior research on neighborhood regeneration and financial support was systematically reviewed. Of the studies registered in the Basic Academic Data Center of Korea Research Memory (KRM), the studies from keyword searches—urban regeneration and projects, neighborhood regeneration and projects, and financial and funding support since 2018—were selected. As a result of the systematic analysis, six projects and 48 items were drawn.

Third, a systematic analysis of project proposals and cases derived four funds for financial support for neighborhood regeneration projects: (1) the real estate fund, (2) the facility fund, (3) the lease fund, and (4) the operating fund. The real estate fund refers to the land and facility purchase fund at the beginning of a project. The facility fund is for facility remodeling and new buildings in the leased or purchased real estate. The lease fund is for leasing land and facilities. The operating fund is the fund for the facility after building it.

Fourth, two neighborhood regeneration experts with extensive research experience reviewed the projects and items for the final questionnaire (Appendix A). The two experts are

well-known scholars in the neighborhood regeneration discipline. They consulted survey questions, successful neighborhood regeneration cases, and characteristics of neighborhood regeneration.

The six neighborhood regeneration projects are defined in Table 1.

Table 1. Neighborhood regeneration projects.

| Types of Neighborhood Regeneration Projects | | Definitions |
|---|--------------------------------------|---|
| 1. | Housing vitalization project | Supports housing, constructs social infrastructure, and secures stable living for underserved populations |
| 2. | Private sector participation project | Creates facilities to support private entities for sustainable neighborhood regeneration |
| 3. | Local economy vitalization project | Improves commercial and tourist facilities and local assets to promote the local economy |
| 4. | Local living improvement project | Creates a convenient and safe living environment |
| 5. | Local living network project | Supports residents for networking and resident-led neighborhood projects |
| 6. | Local economy operation project | Develops and operates local economy programs for growing private entities |

4.2. Data Collection from a Survey and In-Depth Interviews

This study used a purposive sampling method to collect responses from professionals in the neighborhood regeneration field. The first author of this study used professional networks to reach out to workers who have experience with neighborhood regeneration. The researcher intentionally contacted neighborhood regeneration workers to solicit survey participation. Therefore, nonprobability sampling was used to collect data in this study. As the researcher's university does not require IRB (Institutional Review Board) approval for research with human subjects, this study did not receive IRB approval. Potential respondents were 300 experts in the neighborhood regeneration-related fields, such as those in academia, research institutes, and intermediary support organizations. For 14 days from 17 February to 2 March 2020, a total of 181 responses were collected from direct door-to-door visits, phone calls, and e-mail requests. After eliminating incomplete questionnaires, 175 were used for analysis (response rate: 58.3%).

Additionally, an in-depth interview was conducted on how financial support for each stage of real estate purchase, facility development, and operation should proceed. This study selected ten interviewees who had experience with neighborhood regeneration over ten years. With purposive sampling, the researcher reached out to public organizations, local governments, and intermediary organizations. The researcher asked their opinions on financial support for the six projects. The researcher requested an interview by contacting them via email. If they consented, the researcher met them in person to conduct an interview. The respondents of in-depth interviews were experts in the neighborhood regeneration field. The ten respondents consisted of two urban housing fund experts, two employees from neighborhood regeneration public organizations, two from neighborhood regeneration support centers, two experts from the private sector, and two local government employees (Table 2). They participated in the interviews from 21 May to 8 June 2020.

Table 2. Demographic information about interviewees.

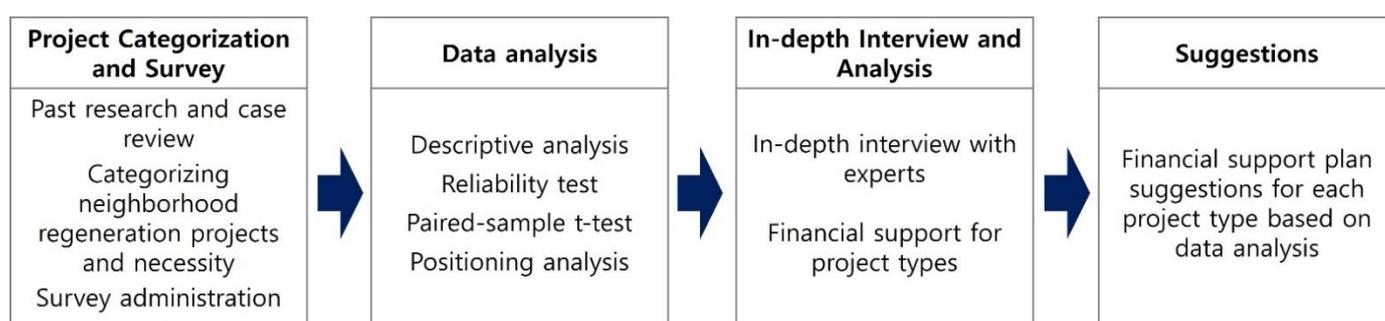
| Last Name | | Affiliation | Position | Level of Education | Total Employment History (Related to Neighborhood Regeneration) |
|-----------|------|--|------------------------|--------------------|---|
| 1 | Lee | Public institution (fund) | Team leader | Master | 19 (12) |
| 2 | Cho | Public institution (fund) | Team leader | Master | 14 (10) |
| 3 | Baek | Public institution (Project entity) | Team leader | Doctorate | 17 (7) |
| 4 | Seok | Public institution (Project entity) | Deputy department head | Master | 18 (4) |
| 5 | Son | Private expert | Director | Doctorate | 14 (9) |
| 6 | Lee | Private expert | CEO | Doctorate | 10 (10) |
| 7 | Jang | Local government | Section chief | Doctorate | 30 (10) |
| 8 | Jeon | Local government | Action officer | Doctorate | 14 (11) |
| 9 | Lee | Neighborhood regeneration support center | Head of the center | Doctorate | 20 (12) |
| 10 | Lee | Neighborhood regeneration support center | Team leader | Doctorate | 22 (12) |

4.3. Measurements of Survey Items and In-Depth Interview Questions

The questionnaire questions were created using the six projects, funds, and two experts' consults. Based on the neighborhood regeneration projects (Table 1), the survey assessed the financial support for project items with the four types of financial support: (1) the real estate fund, (2) the facility fund, (3) the lease fund, and (4) the operating fund in a five-point scale from 1 = Does not need at all to 5 = Needs very much (Appendix A). The in-depth interview asked the respondents about each project's funding sources. Questions included financial support plans, funding sources in each stage of the project, and ideas of support for neighborhood regeneration (Appendix B).

4.4. Data Analysis Plan

Figure 1 displays the research design and data analysis processes. Quantitative analysis of the data was conducted using the SPSS (Statistical Package for the Social Sciences). Reliability tests, descriptive statistics, paired-sample t-tests, and positioning analysis were carried out. Paired-sample t-tests compared different perceptions about financial support by projects. Positioning analysis was conducted to analyze financial support for neighborhood regeneration (Figure 2). Through the positioning analysis, this study derived differential financial support types for the neighborhood regeneration projects. For the interview responses, an interpretative analysis was used.

**Figure 1.** Data analysis procedures.

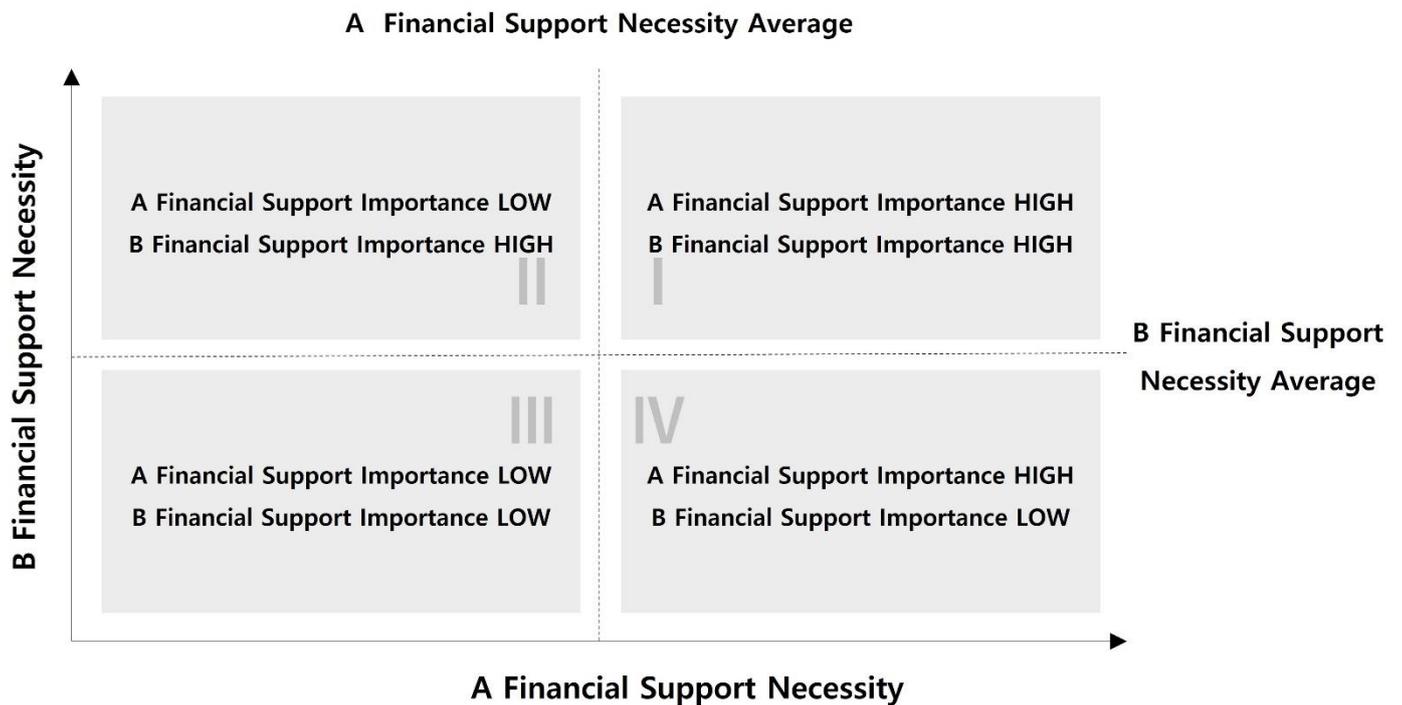


Figure 2. Positioning analysis framework. I: Quadrant I indicates the importance of both financial support necessities is high. II: Quadrant II indicates the importance of one financial support necessity is low and the other is high. III: Quadrant I indicates the importance of both financial support necessities is low. IV: Quadrant IV indicates the importance of one financial support necessity is high and the other is low.

The goal of applying a pattern language to this study is to generate and reproduce the essence of a functioning structure in financial support for neighborhood regeneration [4]. The results of this study are expected to generate a solution to fitting financial support for projects at the neighborhood level.

5. Findings

5.1. Sample Characteristics

A total of 175 respondents were surveyed, with 117 males (66.9%) and 58 females (33.1%). Over 65% of the sample's ages were between 41–50 ($n = 61$, 34.9%) and 51–60 ($n = 54$, 30.9%). Respondents' organizations were intermediary support organizations (e.g., neighborhood regeneration support centers, etc.) ($n = 45$, 25.7%), followed by local government ($n = 43$, 24.6%), and private experts (e.g., local activists) ($n = 36$, 20.6%).

5.2. Answers for Research Questions

RQ1 asked to identify projects that show financial support for neighborhood regeneration (Table 3). The average of financial support for neighborhood regeneration projects was 3.30. The highest financial support for neighborhood regeneration projects was the private sector participation project ($M = 3.63$), followed by the housing vitalization project ($M = 3.46$), the local living network project ($M = 3.22$), the local economy vitalization project ($M = 3.20$), the local economy operation project ($M = 3.18$), and the local living improvement project ($M = 3.08$). Additionally, the highest financial support by funds was the facility fund ($M = 3.56$), followed by the operating fund ($M = 3.33$), the real estate fund ($M = 3.20$), and the lease fund ($M = 3.10$).

Table 3. Financial support by project type.

| Projects | Real Estate Fund | Facility Fund | Lease Fund | Operating Fund | Total Avg. |
|--|------------------|---------------|------------|----------------|------------|
| A Housing vitalization project | 3.47 | 3.90 | 3.19 | 3.28 | 3.46 |
| B Private sector participation project | 3.59 | 3.75 | 3.61 | 3.59 | 3.63 |
| C Local economy vitalization project | 3.07 | 3.53 | 3.05 | 3.17 | 3.20 |
| D Local living improvement project | 3.06 | 3.63 | 2.59 | 3.06 | 3.08 |
| E Local living network project | 3.16 | 3.38 | 3.01 | 3.33 | 3.22 |
| F Local economy operation project | 2.86 | 3.17 | 3.17 | 3.54 | 3.18 |
| Total avg. | 3.20 | 3.56 | 3.10 | 3.33 | 3.30 |

The financial support funding for the six projects demonstrated different ranks (Table 4). The financial support for the facility fund was high in the housing vitalization project, the private sector participation project, the local economy vitalization project, and the local living network project.

Table 4. Financial support fund rankings for each project type.

| Section | 1st | 2nd | 3rd | 4th |
|--|------------------|----------------------------------|------------------------------------|------------|
| A Housing vitalization project | Facility fund * | Real estate fund * | Operating fund | Lease fund |
| B Private sector participation project | Facility fund * | Lease fund * | Real estate fund, operating fund * | - |
| C Local economy vitalization project | Facility fund * | Operating fund | Real estate fund | Lease fund |
| D Local living improvement project | Facility fund * | Real estate fund, operating fund | Lease fund | - |
| E Local living network project | Facility fund * | Operating fund * | Real estate fund | Lease fund |
| F Local economy operation project | Operating fund * | Facility fund, lease fund | Real estate fund | - |

* Above the overall average of financial support.

RQ2 asked about financial support funds for neighborhood regeneration projects. Paired-sample *t*-tests and positioning analyses were carried out (Table 5). As a result of testing differences between financial support, significance was found between the real estate fund and the facility fund ($t = -5.579, p < 0.05$), the real estate fund and the lease fund ($t = 2.951, p < 0.05$), and the lease fund and the operating fund ($t = -2.905, p < 0.05$).

Table 5. Differences of responses between funds.

| Funds | Difference in Response | | | | | | <i>t</i> | <i>d.f.</i> | <i>p</i> |
|---------------------------------|------------------------|-------|---------|---|-------------|--------|----------|-------------|----------|
| | Avg. | SD | Avg. SD | 95% Confidence Interval of the Difference in Response | | | | | |
| | | | | Lower Limit | Upper Limit | | | | |
| Real estate fund—Facility fund | −0.360 * | 0.158 | 0.065 | −0.526 | −0.194 | −5.579 | 5 | 0.003 | |
| Real estate fund—Lease fund | 0.098 | 0.270 | 0.110 | −0.185 | 0.382 | 0.893 | 5 | 0.413 | |
| Real estate fund—Operating fund | −0.126 | 0.301 | 0.123 | −0.441 | 0.190 | −1.026 | 5 | 0.352 | |
| Facility fund—Lease fund | 0.459 * | 0.381 | 0.155 | 0.059 | 0.858 | 2.951 | 5 | 0.032 | |
| Facility fund—Operating fund | 0.234 | 0.371 | 0.151 | −0.155 | 0.623 | 1.548 | 5 | 0.182 | |
| Lease fund—Operating fund | −0.224 * | 0.189 | 0.077 | −0.423 | −0.026 | −2.905 | 5 | 0.034 | |

* $p < 0.5$.

An additional analysis to answer RQ2 was positioning analysis. The results of the positioning analysis on the real estate fund and facility fund for neighborhood regeneration

projects are displayed in Figure 3. A notable finding is that the financial support for real estate and facilities was located in the housing vitalization project and the private sector participation project. The results of positioning analysis based on the facility fund and the lease fund for neighborhood regeneration projects are demonstrated in Figure 4. The housing vitalization project and the private sector participation project needed both the facility fund and the lease fund. Figure 5 shows the results of the positioning analysis on the lease fund and the operating fund. The private sector participation project and the local economy operation project needed both the facility fund and the lease fund.

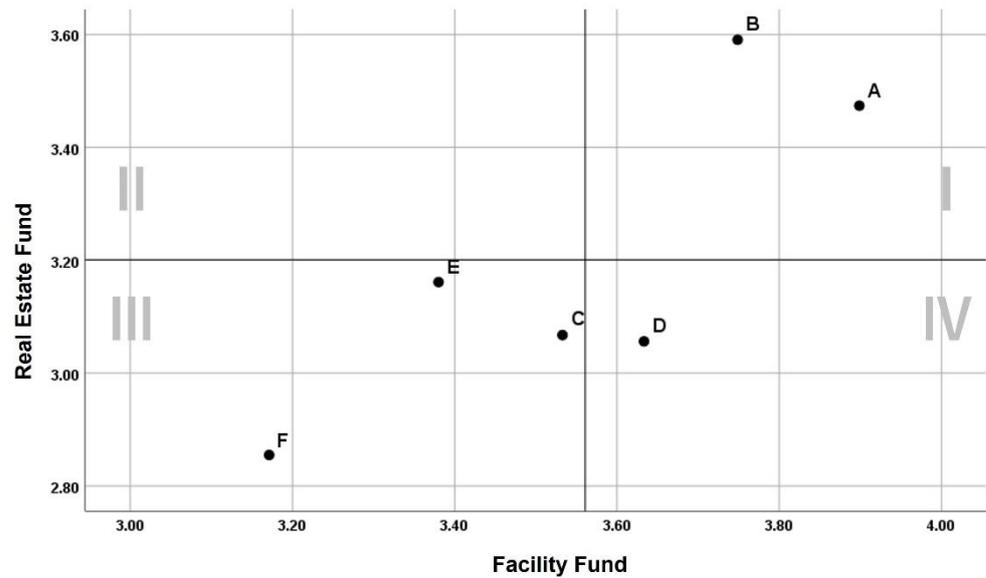


Figure 3. Positioning analysis on real estate fund and facility fund. A. Housing vitalization project. B. Private sector participation project. C. Local economy vitalization project. D. Local living improvement project. E. Local living network project. F. Local economy operation project.

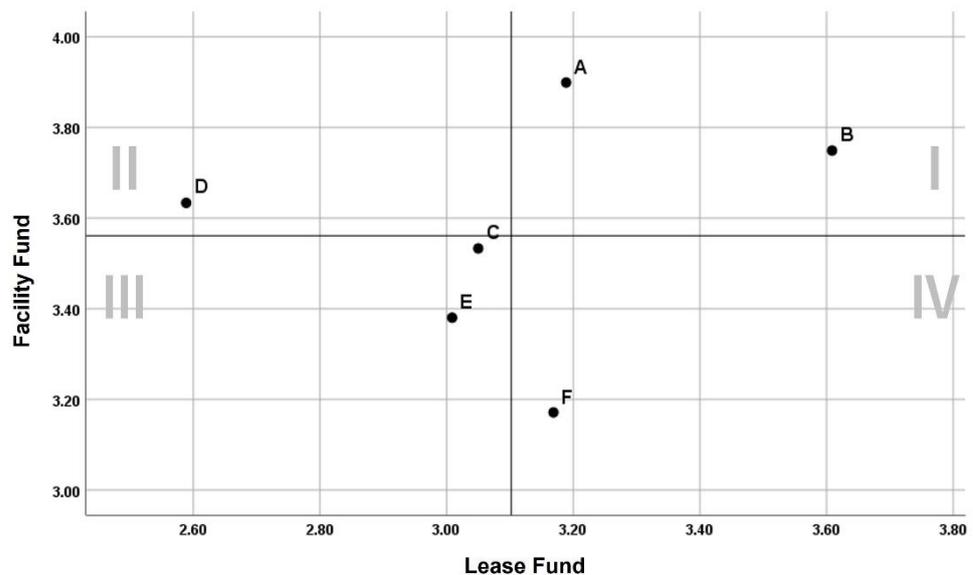


Figure 4. Positioning analysis on facility fund and lease fund.

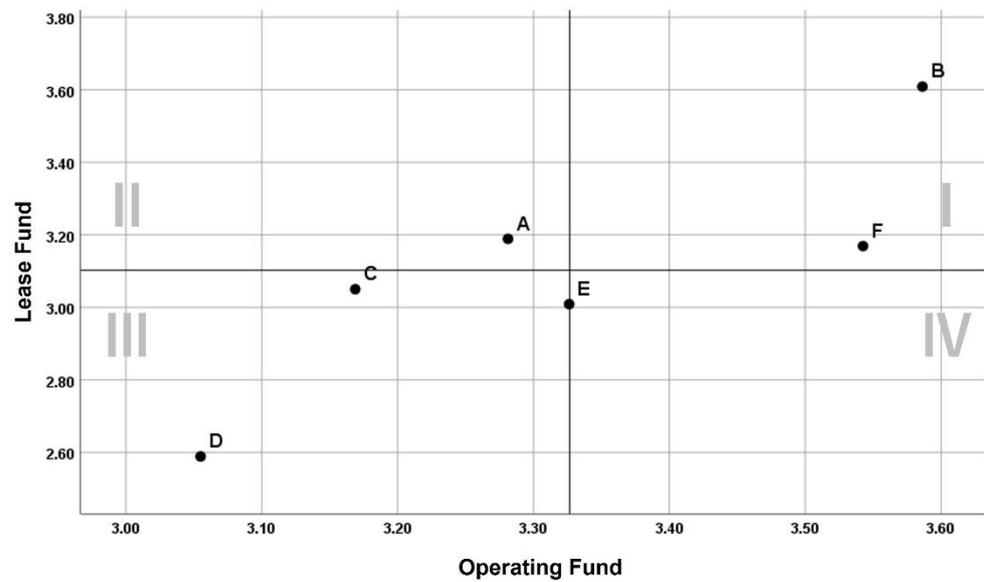


Figure 5. Positioning analysis on lease fund and operating fund.

Another positioning analysis of the financial support for neighborhood regeneration project items was carried out. The results of the positioning analysis for the real estate fund-facility fund, the facility fund-lease fund, and the lease fund-operating fund for the neighborhood regeneration projects are shown in Figures 6–8. As the results show, the facility fund and the real estate fund can be used for the housing vitalization project and the local living improvement project. The positioning analysis drew differential financial support funds by associating financial support with project items (Table 6).

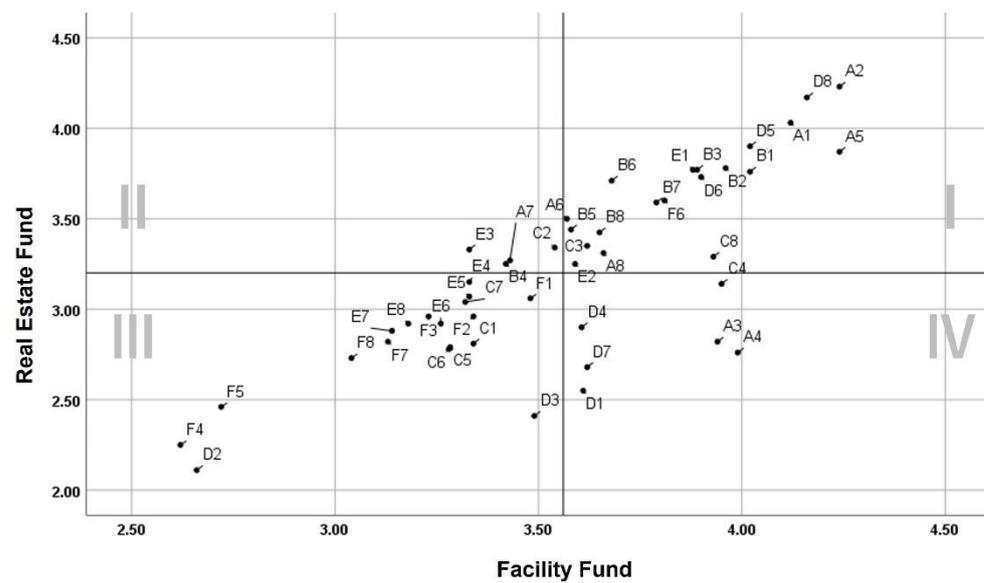


Figure 6. Positioning analysis on real estate fund-facility fund by project items.

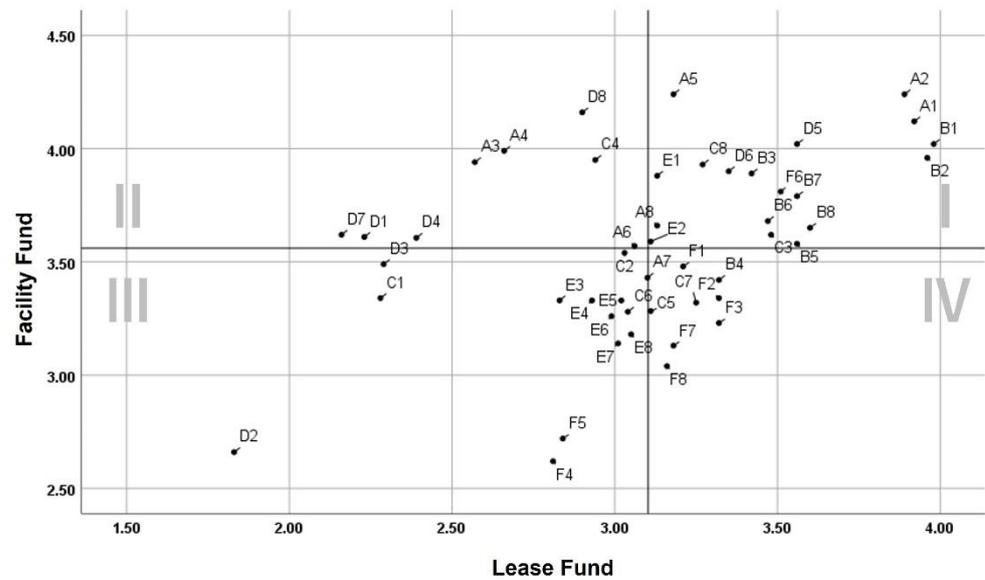


Figure 7. Positioning analysis on facility fund-lease fund by project items.

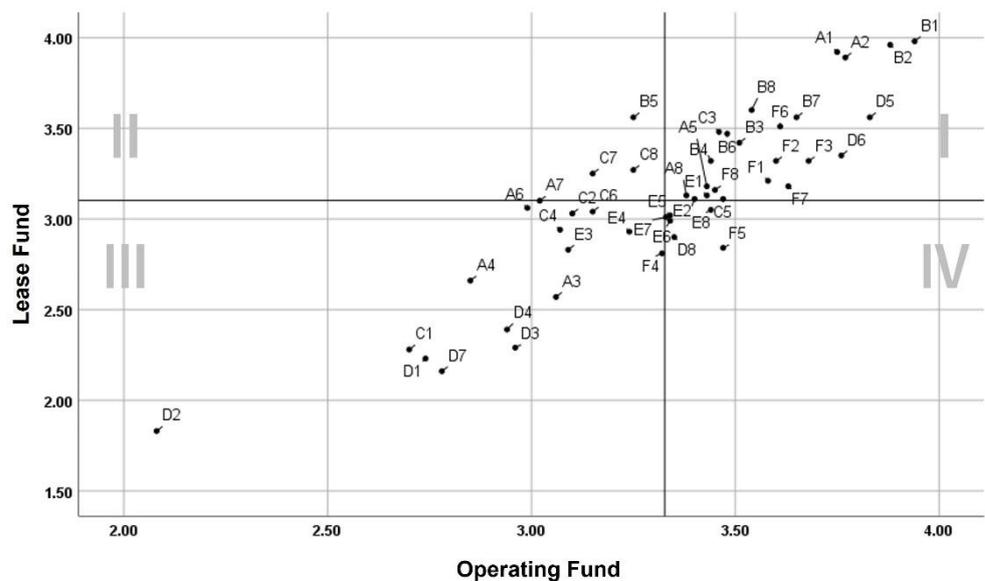


Figure 8. Positioning analysis on lease fund-operating fund by project items.

Experts’ opinions were analyzed for financial support funds and projects. Respondents mentioned that the housing vitalization project needed the public rather than the private sector. The financial support for the private sector participation project needed public sector participation. In experts’ opinions on the local economy vitalization project, the cooperation and growth between the public and private sectors were most needed for this project. The local living improvement project was needed by the public sector.

The local living network project needed the public sector mainly. The public sector needs finance as the funding source, as the project needs the reinforcement of social, economic, and cultural networks that connect the residents with diverse backgrounds. The local economy operation project needed the public sector in cooperation with the private sector. The project needs to prioritize financial support for infrastructure programs and facility support projects to reinforce the local economy and resident competence.

Table 6. Results of positioning analysis on financial support by neighborhood urban generation project items.

| Section | A Housing Vitalization Project | B Private Sector Participation Project | C Local Economy Vitalization Project | D Local Living Improvement Project | E Local Living Network Project | F Local Economy Operation Project |
|----------------------------------|--------------------------------|--|--------------------------------------|------------------------------------|--------------------------------|-----------------------------------|
| Real estate fund + facility fund | 1, 2, 5, 8 | 1, 2, 3, 5, 6, 7, 8 | 3, 8 | 5, 6, 8 | 1, 2 | 6 |
| Facility fund + lease fund | 1, 2, 5, 8 | 1, 2, 3, 5, 6, 7, 8 | 3, 8 | 5, 6 | 1, 2 | - |
| Lease fund + operating fund | 1, 2, 5, 8 | 1, 2, 3, 4, 6, 7, 8 | 3 | 5, 6 | 1, 2 | 1, 2, 3, 6, 7, 8 |
| Real estate fund | 6, 7 | 4 | 2 | - | 3 | - |
| Facility fund | 3, 4, 6 | - | 4 | 1, 4, 7, 8 | - | - |
| Lease fund | - | 4, 5 | 5, 7, 8 | - | - | 1, 2, 3, 7, 8 |
| Operating fund | - | - | 5 | 8 | 5, 6, 7, 8 | 5 |
| Excluded items | - | - | 1, 6 | 2, 3 | 4 | 4 |

Note. The above numbers represent project items (see Appendix A for items).

6. Discussion

6.1. Implications of Findings

This study analyzed neighborhood generation projects and proposed differential financial support for the projects. As past research points out [48], funding support at the neighborhood level needs to be elaborated and customized. Following the pattern language methodology [4], the results suggest that the financial support patterns fit different neighborhood regeneration projects. The analyses present the patterns of process in financial support. The patterns of financial support funds demonstrate the process the funds fit for the projects and items.

The housing vitalization project needed financial support to build residential facilities (RQ1). For example, the private sector participation project aims to develop hub spaces for start-ups that participate in neighborhood regeneration projects [49]. The local economy vitalization project accommodates local competence and training programs for social economy entities. Therefore, the project mainly needs the operating fund, the tailored facility fund, or the lease fund.

The analyses showed significant differences among the funds, projects, and items (RQ2). The difference between the real estate fund and the facility fund implies that even though the neighborhood regeneration projects aim to develop facilities, they need efficient support for tangible financial support outcomes. From the results, the housing vitalization project and the private sector participation project need financial support for real estate and remodeling. The local living improvement project needs financial support from the facility fund. Analyzing financial support by projects suggested that project entities should be distinct. Public projects such as the housing vitalization project, the local living improvement project, and the local living network project need to be led by the public sector. The financial support for living quality improvement may develop into a mechanism for positive externality valuation such as better living quality in the neighborhood [4]. The private sector participation project, the local economy vitalization project, and the local economy operation project can either be led by the public sector or in partnership with the private sector.

This study suggested that local governments, the NHUF, and private or community enterprises consider customized financial support for neighborhood regeneration. Based on the financial support, policy and local governance can be improved. For instance, the housing vitalization project needed the lease fund. The private sector participation project required the facility fund. The local living improvement project required financial support from the facility fund. The local economy operation project needed financial support from the lease fund.

6.2. Practical Implications

This study has multiple practical implications drawn from the projects' differential financial support. Practical implications for each neighborhood regeneration project can be summarized as follows.

The housing vitalization project needs financial support from the facility fund and the real estate fund. The housing vitalization project needs the public sector's involvement. Therefore, the project entity in neighborhood regeneration needs to be a public entity rather than a private entity [50]. The project needs public funding sources from the NHUF and private capital. Real estate that needs finance and the private sector's capital can be supported by the NHUF [35].

The private sector participation project requires all types of financial support, particularly the private sector's proactive participation in neighborhood regeneration. The shortage of private sector participation requires the public sector's participation in the beginning stage [51].

The facility fund can primarily support the local economy vitalization project. The facility fund and the lease fund can support the items of the local economy vitalization project. This project requires cooperation between the public and private sectors to grow together. Public and private entities can partner to provide affordable neighborhood spaces [4].

The local living improvement project needs to be supported by the facility fund. This project can be led by a public entity. The public sector needs to invest in the physical infrastructure of neighborhood regeneration projects.

The facility and operating funds mainly support the local living network project. This project can also be led by a public entity. The public sector as a financial source is necessary because the project needs social, economic, and cultural networks for neighborhood regeneration projects [52]. Local governments with low financial independence should secure funding sources through multiple financial support channels.

The operating fund can mainly support the local economy operation project. Support is needed from the lease and operating funds, depending on the project items. This project can mainly be led by the public sector but proceeded with partial participation of the private sector.

This study has some limitations. First, this study excluded housing readjustment projects that focus on small-scale housing readjustment [53]. As the housing vitalization project was the most crucial goal and direction of neighborhood regeneration, further research needs to develop financial support plans for small-scaled housing readjustment projects. Second, although this study suggested financial support plans are for the six projects primarily, financial support directions for specific project items can vary. Hence, an analysis of tailored financial support plans for project items may be needed. Future research can discover effective financial support plans, policies, and implications. Such attempts may contribute to vitalizing neighborhood regeneration projects in the future.

6.3. Conclusions

This study suggested customized financial support for neighborhood regeneration. The current analysis shed new light on specifying neighborhood regeneration projects and financial support funds. The effectiveness of neighborhood regeneration can be optimal when financial support is suitable. The customized financial support plans may apply to other neighborhood regeneration projects. This study contributes to developing customized financial support for neighborhood regeneration. This neighborhood regeneration with tailored financial support funds may generate quality adaptive urbanism [4]. This study offers a new financial support pattern for neighborhood regeneration. The solutions provided in this study may help build a healthier and more sustainable form of neighborhood development.

Author Contributions: Conceptualization, D.K.; methodology, D.K.; software, D.K.; validation, D.K.; formal analysis, D.K.; investigation, D.K.; resources, K.K.; data curation, D.K.; writing—original draft preparation, D.K.; writing—review and editing, K.K.; visualization, D.K.; supervision, K.K.; project administration, D.K. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Ethical review and approval were waived for this study due to no requirements of Institutional Review Board review by the researchers' university.

Informed Consent Statement: Informed consent was obtained from all of the subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Items of Neighborhood regeneration Projects (Survey items).

| Type | Detailed Items |
|---|---|
| A. Housing Vitalization Project | <ol style="list-style-type: none"> 1. Creating complex residential facilities with diverse classes, including socially vulnerable and low-income groups 2. Creating social rental housing and cooperative housing facilities for marginal populations, including the youth and the elderly 3. Creating facilities that adopt eco-friendly remodeling technology for energy efficiency in old residential areas 4. Supporting internal and external renovation to improve the landscape and functions of old dense residential areas 5. Supporting the improvement and utilization of unoccupied residential facilities in areas 6. Creating job-housing proximity to residential facilities where work and housing can be done in the same place 7. Creating residential facilities where people from similar industries can form a local network 8. Creating residential facilities including unoccupied space, common kitchen, laundry site, and others |
| B. Private Sector Participation Project | <ol style="list-style-type: none"> 1. Creating a space for young people and startups that produce jobs and induce business participation 2. Creating a start-up space that can vitalize the local industry 3. Creating anchor facilities such as neighborhood regeneration hubs that anyone can easily use 4. Creating neighborhood regeneration support centers and a workplace for local regeneration companies 5. Creating a collective shopping district to implement a coexistence agreement on rent for gentrification prevention 6. Creating local asset utilization facilities owned by residents for gentrification prevention 7. Creating jobs, joint workshops, and joint sales venues to foster self-sustaining organizations 8. Creating a culture and arts village that combines exhibitions, sales, and residential functions for artists |
| C. Local Economy Vitalization Project | <ol style="list-style-type: none"> 1. Creating resident networks connected to local assets to promote local tourism 2. Creating tourism support-related facilities, such as guest houses, to promote tourism in the region 3. Creating a space for start-ups in traditional markets to revitalize local commercial districts 4. Renovating traditional markets and old shopping districts to revitalize local commercial districts 5. Establishing and operating a regional economic community revitalization program for the revitalization of local commercial districts 6. Establishing flea markets and space to promote start-ups and local residents' profits 7. Creating a plaza that specializes in selling local specialty products to strengthen regional competitiveness 8. Renovating commercial facilities on the streets using vacant stores to revitalize the local economy |

Table A1. Cont.

| Type | Detailed Items |
|-------------------------------------|---|
| D. Local Living Improvement Project | <ol style="list-style-type: none"> 1. Creating a safe traffic environment for vulnerable pedestrians such as children, the elderly, the disabled, etc. 2. Installing landmark sculptures reflecting on local culture and arts to create an inviting environment 3. Fostering a crime-free environment for the prevention of local crimes and the reduction of crime uncertainty (CPTED) 4. Establishing systems and infrastructure for disaster prevention management and response, such as disaster safety management 5. Creating and operating local upbringing and childcare facilities for the health and childcare support of local infants and toddlers 6. Developing youth culture and education facilities for the regeneration of the community in the culturally disadvantaged areas 7. Maintaining local infrastructure, such as road facilities, sewer systems, and telecommunications, for the improvement of living conditions 8. Creating community facilities (garden, park, parking lot) that recycle abandoned public properties and houses |
| E. Local Living Network Project | <ol style="list-style-type: none"> 1. Creating community facilities for the improvement of residents' living welfare 2. Creating a cultural network center reflecting on diverse cultures in the community 3. Creating a communal urban garden and a work facility where residents can participate 4. Operating and supporting cross-regional cultural exchange programs and facilities that use local assets 5. Operating and supporting community revitalization programs and resident-led projects 6. Operating and supporting network formation programs and facilities for local residents and migrants 7. Operating and supporting neighborhood regeneration education/exchange programs for the development of resident-led villages 8. Operating and supporting cultural arts education programs and facilities that expand opportunities for enjoyment of culture |
| F. Local Economy Operation Project | <ol style="list-style-type: none"> 1. Operating and supporting renovation education programs and facilities that remodel unused buildings 2. Operating and supporting programs to foster social economic players and facilities that contribute to the local economy. 3. Operating and supporting employment platforms centered on local companies and facilities for job creation in the region 4. Operating and supporting festival programs and facilities that revitalize the local economy 5. Operating and supporting intermediary platforms and facilities that provide unoccupied building information to users 6. Creating and supporting shared spaces that enable co-working and co-living for the vitalization of the sharing economy 7. Operating and supporting vocational education programs for residents and facilities for sustainable local development 8. Operating and supporting the shared economy academy program and facilities for the revitalization of the local economy |

Note. These items were used to rank necessity on a 5-point Likert style scale (from 1 = does not need at all to 5 = need very much).

Appendix B

Interview Questions

1. What is your opinion on the financial support plans for the housing vitalization project?
2. What is your opinion on the financial support plans for the private sector participation project?
3. What is your opinion on the financial support plans for the local economy vitalization project?
4. What is your opinion on the financial support plans for the local living improvement project?
5. What is your opinion on the financial support plans for the local living network project?
6. What is your opinion on the financial support plans for the local economy operation project?
7. What is your opinion on the financial support plans to vitalize neighborhood regeneration projects?

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