

Analysis of Urban Regeneration Project Development in Yeongdo-gu, Busan, based on the SWOT-AHP Model

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Abstract: Urban regeneration plays a vital role in promoting urban development and economic growth. Yeongdo-gu in Busan serves as a representative example of urban regeneration projects, offering significant development potential. However, it also faces various issues and challenges throughout the development process. Therefore, it is necessary to conduct an in-depth study on the current status and problems of the urban regeneration project in Yeongdo-gu, Busan, and establish a more reasonable and efficient development strategy to promote sustainable progress in the urban regeneration project. By employing methods such as questionnaire surveys, on-site investigation, and interviews, the factors influencing its development were analyzed. By employing a combination of SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis and the Analytic Hierarchy Process (AHP) method, the strengths, weaknesses, opportunities, and threats of urban regeneration in Yeongdo-gu were analyzed. Moreover, the weight and intensity of each factor was determined. Based on the development of a strategic framework, it was concluded that the urban regeneration industry in Yeongdo-gu should adopt a pioneering development strategy. After investigating the actual situation of Yeongdo-gu, it is recommended to adopt active development strategies such as the introduction of smart cities, fostering local industries, promoting the culture and arts sectors, utilizing creative spaces, and implementing sustainable urban regeneration strategies. The aspiration is that this research can offer valuable insights for the advancement of urban regeneration initiatives in one of the places in Busan, Korea as well as in other locales.

Keywords: Urban Regeneration Project, Development, Yeongdo-gu, SWOT-AHP Model

1. Introduction

Urban regeneration refers to the revitalization of cities that have experienced decline due to factors such as population decline, changes in industrial structure, unchecked urban expansion, and aging living environments. This process involves strengthening regional capabilities, introducing new functions, and utilizing local resources to achieve economic, social, physical, and environmental rejuvenation[1]. Yeongdo-gu in Busan is a representative maritime area in Korea with a rich history and cultural heritage[2]. However, in recent decades, Yeongdo-gu's overall competitiveness has weakened due to aging infrastructure, a deteriorating residential environment, and a declining population with an increasing number of elderly residents[3]. There are many villages with many

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vacant houses in Yeongdo-gu, Busan. As per the Bongsan Village Management Cooperative's report, out of the 400 village buildings designated for regeneration, 80 were found to be vacant prior to the project's initiation. Furthermore, a significant portion, approximately 59.1%, of buildings over 40 years old were identified as being in poor condition. It is worth noting that the majority of residents in these villages are elderly individuals[4]. Therefore, urban regeneration is significant for Yeongdo-gu. To address these issues, the regional economy should be revitalized, overall regional development must be promoted. Yeongdo-gu initiated an urban vitality promotion project in 2015 to revitalize the city. In 2016, it was designated as a central city type, and in 2017, it was selected as a model for neighborhood revitalization. Subsequently, a series of urban regeneration projects were implemented, leading up to the selection of the economic-based urban regeneration New Deal project in 2019. The district-level local governments are currently implementing multiple types of urban regeneration projects simultaneously[5].

This study aimed to conduct a comprehensive and objective evaluation of urban regeneration projects in Yeongdo-gu, Busan, through a systematic analysis method. The study involved an extensive review of literature, data analysis, and on-site due diligence to identify the strengths, weaknesses, opportunities, and threats associated with the urban regeneration projects in the area. The SWOT method was used to systematically analyze the development of urban regeneration projects in Yeongdo-gu in terms of their strengths (S), weaknesses (W), opportunities (O), and threats (T). The Analytic Hierarchy Process (AHP) method was used to determine the order of importance weight for each aspect and identify the critical factors that can affect the success of urban regeneration projects. The goal of this study is to determine how Yeongdo-gu can effectively leverage its advantages, capitalize on opportunities, mitigate threats, tackle challenges proactively, achieve rapid economic development, and enhance regional vitality during the process of urban regeneration. Consequently, based on the research findings, this study proposed specific development strategies to enhance the competitiveness of Yeongdo-gu and foster sustainable urban development. Overall, this study provides valuable insights into the urban regeneration projects in Yeongdo-gu and presents a framework for evaluating and developing similar projects in other urban areas.

2. Research Methodology

2.1 SWOT-AHP Analysis Model

SWOT analysis, which stands for strengths, weaknesses, opportunities, and threats, is a method used to assess corporate strengths and weaknesses, identify environmental opportunities, and anticipate potential crises. It is employed to develop effective management strategies for organizations[6]. By analyzing the organization's internal environment, strengths and weaknesses can be identified, and by analyzing the external environment, opportunities and threats can be identified that can be leveraged to capitalize on strengths and opportunities. By identifying opportunities and threats facing the organization and analyzing how to respond to them, the organization can develop strategies to minimize threats while maximizing its strengths and opportunities [7]. SWOT analysis is extensively utilized across various fields due to its methodological simplicity and broad applicability, making it a widely adopted analysis technique[8].

AHP(Analytic Hierarchy Process) is a multi-criteria decision-making method based on hierarchical weights that was proposed by Thomas L. Saaty, a professor at the University of Pittsburgh, in the early 1970s[9]. AHP is a technique that enables the exploration and selection of optimal alternatives by identifying decision-making attributes and analyzing their hierarchical structure through pairwise comparisons[10]. AHP is commonly applied to the analysis and evaluation of decision-making processes that involve qualitative or quantitative properties as it can quantify, express, and process

human subjective judgments[11]. AHP is a decision-making technique that is recognized as highly significant in various domains such as business, sociology, and economics. It effectively addresses the challenges associated with modeling unstructured problems and is widely utilized for decision-making involving multiple targets[12].

The SWOT-AHP analysis method has been widely applied in various fields of development strategy research. For instance, Kim[13] categorized SWOT factors and conducted AHP analysis with experts to quantitatively assess the relative importance of each factor, thereby gaining insights into the implications of 6th industrialization development. Jeong and Kim[14] utilized the SWOT-AHP analysis method to prioritize strategies for successful operation of traditional restaurants in Gangwon-do after the COVID-19 pandemic. Similarly, Wang and Cho[15] employed the AHP-SWOT analysis method to analyze the strengths, weaknesses, opportunities, and threats of the Busan marine tourism industry, and proposed countermeasures for sustainable development. By combining SWOT analysis and AHP analysis, the limitations of each method can be overcome, resulting in more comprehensive and accurate analysis results.

2.2 SWOT Analysis of Urban Regeneration in Yeongdo-gu

2.2.1 Strength Analysis

The following are the identified strengths of the urban regeneration in Yeongdo-gu, Busan:

First, possession of rich historical and cultural heritage. Yeongdo-gu is a special tourist attraction that draws domestic and foreign tourists due to its rich historical and cultural heritage.

Second, flourishing industries related to marine tourism. Yeongdo-gu boasts various tourist attractions, such as Taejongdae and the Eoqidae Coastal Walk, that make it an attractive destination for visitors.

Third, convenient transportation infrastructure. Yeongdo-gu's proximity to Busan Port and its role as an international port city make it easily accessible by various means of transportation, further enhancing its appeal as a tourist destination.

2.2.2 Weakness Analysis

The following are the identified weaknesses of the urban regeneration in Yeongdo-gu, Busan:

First, population decline and aging. Yeongdo-gu has experienced a loss of vitality due to population decline and an aging population.

Second, outdated facilities and infrastructure. Yeongdo-gu's long history is reflected in its aging urban infrastructure and buildings, which require significant improvements.

Third, environmental degradation. Yeongdo-gu faces environmental pollution and marine litter issues resulting from past industrial activities.

2.2.3 Opportunity Analysis

The following are the identified opportunities of the urban regeneration in Yeongdo-gu, Busan:

First, revitalization of regional culture and traditions. Revitalizing local culture based on history and cultural heritage in Yeongdo-gu can attract tourists and promote local economic development.

Second, government support for local development initiatives. The urban regeneration project in Yeongdo-gu, with the support of the government and local authorities, can help address local economic and social issues.

Third, cultivation of green industries to mitigate environmental challenges. Yeongdo-gu aims to address environmental problems, foster green industries, and promote sustainable urban development through urban regeneration efforts.

2.2.4 Threat Analysis

The following are the identified threats of the urban regeneration in Yeongdo-gu, Busan:

First, intense regional competition. Competition between Yeongdo-gu and neighboring regions and other cities may reduce the relative status of Yeongdo-gu and hinder its economic development.

Second, economic instability and uncertainty. Economic instability at both domestic and international levels may have an adverse impact on the local economy and tourism industry.

Third, adapting to and mitigating the impacts of climate change. Threats such as sea-level rise caused by climate change can adversely affect coastal cities, including Yeongdo-gu.

2.3 AHP Analysis of Urban Regeneration in Yeongdo-gu

2.3.1 Constructing a Hierarchical Table

A hierarchical analysis table of urban regeneration project development strategies in Yeongdo-gu was established with each element of SWOT qualitative analysis as the target layer, and strengths, weaknesses, opportunities, and threats as the base layer [Table 1]. The constructed hierarchical analysis table is presented in [Table 1].

[Table 1] The Hierarchical Analysis Table of Urban Regeneration Projects in Yeongdo-gu, Busan

Target layer (A)	Evaluation Reference Layer (B)	Evaluation Index Layer (C)
Development of an urban regeneration project in Yeongdo-gu, Busan	Strengths (S)	Possession of rich historical and cultural heritage (S1) S ₁
		Flourishing industries related to marine tourism (S2)
		Convenient transportation infrastructure (S3)
	Weaknesses (W)	Population decline and aging (W1)
		Outdated facilities and infrastructure (W2)
		Environmental degradation (W3)
	Opportunities (O)	Revitalization of regional culture and traditions (O1)
		Government support for local development initiatives (O2)
		Cultivation of green industries to mitigate environmental challenges (O3)
	Threats (T)	Intense regional competition (T1)
Economic instability and uncertainty (T2)		
Adapting to and mitigating the impacts of climate change (T3)		

2.3.2 Determining the SWOT Element Intensity

The intensity of SWOT elements, which refers to the extent to which strengths, weaknesses, opportunities, and threats impact the strategic objectives, is determined by the estimated intensity and relative importance of each factor [16]. To assess the intensity of SWOT elements in the selection of urban regeneration strategies in Yeongdo-gu, a questionnaire was designed using the Likert 5-point scale method. Advantages and opportunities were assigned positive values, while disadvantages and threats were assigned negative values, with greater absolute values indicating greater strength. The survey involved personnel from Yeongdo-gu Office, urban planning experts, and professors specializing in regional economics and fusion design. These individuals possess a certain level of understanding regarding the development of urban regeneration in Yeongdo-gu, ensuring the scientific validity of the survey. A total of 35 questionnaires were distributed, and 32 valid questionnaires were collected, resulting in a response rate of 91.4%. The estimated intensity of each element in SWOT is shown in [Table 2].

[Table 2] The Intensity of Each Element in SWOT

SWOT	Strategic Factors	Estimated Intensity
Strengths (S)	Possession of rich historical and cultural heritage (S1)	4
	Flourishing industries related to marine tourism (S2)	4
	Convenient transportation infrastructure (S3)	3
Weaknesses (W)	Population decline and aging (W1)	-4
	Outdated facilities and infrastructure (W2)	-3
	Environmental degradation (W3)	-3
Opportunities (O)	Revitalization of regional culture and traditions (O1)	4
	Government support for local development initiatives (O2)	4
	Cultivation of green industries to mitigate environmental challenges (O3)	3
Threats (T)	Intense regional competition (T1)	-3
	Economic instability and uncertainty (T2)	-3
	Adapting to and mitigating the impacts of climate change (T3)	-4

2.3.3 Construction of Judgment Matrix and Weight Calculation

To determine the importance of each index in the urban regeneration industry in Yeongdo-gu, a 1-9 scale method was used to compare the SWOT elements. This comparison was conducted simultaneously with the assessment of the intensity of the SWOT elements. The subjects of the survey were workers of the Central District Office, urban planning experts, professors majoring in regional economy and design, who have a certain understanding and expertise in urban regeneration and development in Yeongdo-gu. The scientificity and reliability of the findings were ensured. A total of 35 questionnaires were distributed, and 32 valid questionnaires were collected, resulting in a response rate of 91.4%. Based on the analysis results of the 32 valid questionnaires, a judgment matrix was constructed. The constructed matrices are presented in Tables 3 to 7. The numerical values in the pairwise comparison matrix represent the subjective judgment values of the decision-makers. However, given the presence of multiple judgment layers and factors, it is important to conduct a consistency test to ensure the reliability of the research evaluation results. To ensure the logical consistency of the inference, a consistency test was performed on each set of judgment matrices. Consistency testing refers to testing the consistency of indicator scores. The results must be consistent within the error range. First, the Consistency Index (CI) needs to be found. The ratio of the Consistency Index (CI) of the judgment matrix to the random index (RI) of the same layer is called the random Consistency Ratio (CR)[17]. If the Consistency Ratio (CR) is less than or equal to 0.1, the consistency of the judgment matrix is considered acceptable. If CR is greater than 0.1, the judgment matrix should be reasonably improved. The formulas for calculating the Consistency Index (CI) and Consistency Ratio (CR) are as follows:

$$CI = \frac{\lambda_{max} - n}{n - 1}$$

$$CR = \frac{CI}{RI}$$

[Table 3] Judgment Matrix A-B and Consistency Verification

A	S	W	O	T	Wi	λmax=4.046, CR= 0.017<0.1
S	1	2	1/2	2	0.255	
W	1/2	1	1/3	2	0.165	

O	2	3	1	4	0.472	
T	1/2	1/2	1/4	1	0.108	

[Table 4] Judgment Matrix S-(S1-S3) and Consistency Verification

S	S1	S2	S3	Wi	$\lambda_{max}=3.054,$ CR= 0.052<0.1
S1	1	1	1	0.328	
S2	1	1	2	0.411	
S3	1	1/2	1	0.261	

[Table 5] Judgment Matrix W-(W1-W3) and Consistency Verification

W	W1	W2	W3	Wi	$\lambda_{max}=3.018,$ CR= 0.018<0.1
W1	1	1	3	0.443	
W2	1	1	2	0.387	
W3	1/3	1/2	1	0.170	

[Table 6] Judgment Matrix O-(O1-O3) and Consistency Verification

O	O1	O2	O3	Wi	$\lambda_{max}=3.009,$ CR= 0.009<0.1
O1	1	2	3	0.539	
O2	1/2	1	2	0.297	
O3	1/3	1/2	1	0.164	

[Table 7] Judgment Matrix T-(T1-T3) and Consistency Verification

T	T1	T2	T3	Wi	$\lambda_{max}=3.018,$ CR= 0.018<0.1
T1	1	1/3	1	0.211	
T2	3	1	2	0.548	
T3	1	1/2	1	0.241	

Based on the above analysis, it can be observed that the Consistency Ratio (CR) for each matrix is less than 0.1, which indicates that the outcomes are reasonable and effective.

The weights for each element in each hierarchy were calculated as shown in [Table 8].

[Table 8] Table of Weighted results for each Factor

Target layer (A)	Evaluation Reference Layer (B)	Weights	Evaluation Index Layer (C)	Relative Weights	Absolute Weights
Development of an urban regeneration project in Yeongdo-gu, Busan	Strengths (S)	0.255	S1	0.328	0.083
			S2	0.411	0.105
			S3	0.261	0.067
	Weaknesses (W)	0.165	W1	0.443	0.073
			W2	0.387	0.064
			W3	0.17	0.028
	Opportunities (O)	0.472	O1	0.539	0.254
			O2	0.297	0.140
			O3	0.164	0.077

	Threats (T)	0.108	T1	0.211	0.023
			T2	0.548	0.059
			T3	0.241	0.026

The intensity is determined by multiplying the corresponding weight with the estimated intensity. Based on the weights provided in [Table 8] and the intensity values in [Table 2], the overall intensities of the total strengths, total weaknesses, total opportunities, and total threats can be calculated as follows:

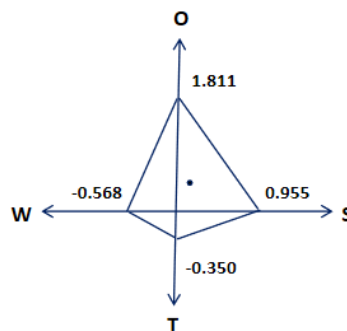
$$S = \sum_{i=1}^n S_i = 0.955, W = \sum_{i=1}^n W_i = -0.568, O = \sum_{i=1}^n O_i = 1.811, T = \sum_{i=1}^n T_i = -0.350$$

3. Results

3.1 Strategic Choices for the Development of Urban Regeneration Project

3.1.1 Constructing the Quadrant for SWOT Strategy

The results of the SWOT analysis for the development strategy of the urban regeneration project in Yeongdo-gu have been presented in a quadrant format. This is shown in [Fig. 1].



[Fig. 1] Quadrangle of Development Strategies

3.1.2 Determining the Type and Intensity of the Strategy

3.1.2.1 Calculation of Strategic Azimuth

The direction of W and S corresponds to the Y-axis of the coordinate axis, and the direction of O and T corresponds to the X-axis of the coordinate axis. The Center of Gravity of the Strategic Quadrant is set at P(X, Y):

$$P(X, Y) = (\sum_{i=1}^n X_i / 4, \sum_{i=1}^n Y_i / 4) = (0.097, 0.365)$$

Strategic Azimuth:

$$\theta = \arctan(Y/X) \approx 75^\circ (\pi/4 \leq \theta \leq \pi/2)$$

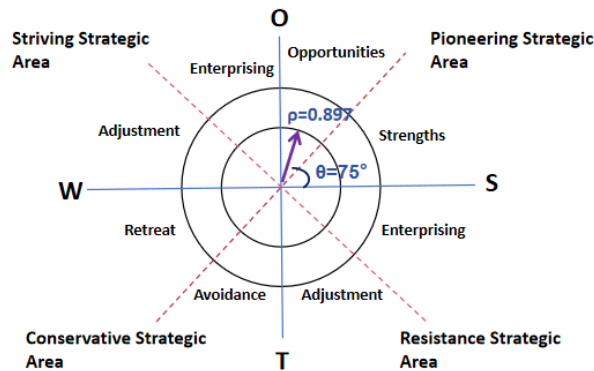
Referring to [Table 9], which shows the relationship between strategy type and strategic orientation, it is recommended to adopt an opportunity strategy for the urban regeneration project in Yeongdo-gu

as there are significant opportunities for development.

[Table 9] Table of Strategic Types and Strategic Azimuth Relationships

Quadrant	Strategic Azimuth	Strategic Type
First Quadrant (Pioneering Strategic Area)	$(0, \pi / 4)$	Strengths
	$(\pi / 4, \pi / 2)$	Opportunities
Second Quadrant (Striving Strategic Area)	$(\pi / 2, 3\pi / 4)$	Enterprising
	$(3\pi / 4, \pi)$	Adjustment
Third Quadrant (Conservative Strategic Area)	$(\pi, 5\pi / 4)$	Retreat
	$(5\pi / 4, 3\pi / 2)$	Avoidance
Fourth Quadrant (Resistance Strategic Area)	$(3\pi / 2, 7\pi / 4)$	Adjustment
	$(7\pi / 4, 2\pi)$	Enterprising

The strategic azimuth (θ) and strategic intensity coefficient (ρ) can provide further clarification on the development strategy and the level of implementation of strategic measures for the urban regeneration project in Yeongdo-gu. Detailed information is presented in [Fig. 2].



[Fig. 2] Strategic Type and Strategic Intensity

3.1.2.2 Calculation of Coefficient for Strategic Intensity

The coefficient for strategic intensity, ρ , is determined by the strategic positive intensity and the strategic negative intensity. The strategic positive intensity, denoted as U , is calculated as the product of strengths (S) and opportunities (O). The strategic negative intensity, denoted as V , is calculated as the product of weaknesses (W) and threats (T). The formula for the coefficient of strategic intensity, ρ , is as follows:

$$U = S \times O$$

$$V = W \times T$$

$$\rho = \frac{U}{U + V}$$

When $0 \leq \rho < 0.5$, a conservative strategy should be adopted, and when $0.5 \leq \rho < 1.0$, a pioneering strategy should be adopted. In the case of the urban regeneration project development in Yeongdo-gu, the strategic azimuth was $\rho \approx 0.897 \geq 0.5$, hence a pioneering strategy should be adopted.

3.1.3 Strategic Positioning and Choice

The SWOT-AHP analysis and calculation of the urban regeneration project development strategy in Yeongdo-gu indicated that the strategic azimuth falls within $(\pi/4 \leq \theta \leq \pi/2)$, and the strategic intensity coefficient is $\rho \approx 0.897 \geq 0.5$. Therefore, a pioneering development strategy should be adopted.

3.2 Measures for Strategy

3.2.1 Leveraging transportation advantages to overcome outdated infrastructure limitations and actively develop smart city integration strategies.

A smart city refers to a city that leverages cutting-edge information and communication technology (ICT) to address urban challenges such as traffic congestion, environmental issues, housing problems, and inefficient infrastructure. By introducing the concept of a smart city into the urban regeneration industry, Yeongdo-gu can promote the seamless development of regeneration initiatives[18]. These regeneration initiatives may include the following:

First, implement intelligent transportation systems to monitor and regulate traffic flow, thereby improving transportation efficiency and safety. Second, foster the development and utilization of renewable energy sources through technological advancements. Intelligent energy management systems can be implemented to provide cities with a more secure, sustainable, and efficient energy supply. Third, enhance residents' quality of life through the application of digital technology to promote smart living. Investments in sectors such as healthcare, culture, education, and entertainment services to enable residents to actively participate in social life and enjoy a fulfilling lifestyle can be increased.

3.2.2 Harnessing regional marine resources advantages and actively promoting regional industry cultivation strategies.

The strategy aims to cultivate emerging industries in the Yeongdo-gu region and create economic value by leveraging its rich marine resources. First, ocean energy development can be achieved by harnessing tidal energy, wave energy, and ocean current energy for power generation and heating purposes. Second, marine tourism should can be leveraged by developing and promoting marine tourism activities, such as marine sightseeing, marine sports, and marine leisure. Third, marine biotechnology can be advanced by utilizing the region's marine biological resources for research and development in areas such as drug discovery, bioenergy production, and environmental restoration.

3.2.3 Utilizing policy support to actively develop cultural and artistic industry cultivation strategies.

Yeongdo-gu is known for its rich history and cultural heritage; thus, providing a strong foundation for cultivating new cultural industries and contributing to regional economic development can be cultivated through the following strategies. First, policy support can be implemented by developing strategies and initiatives to support regional artists, cultural and artistic groups, and cultivate the growth of the cultural and art industries. Second, cultural innovation can be done by utilizing advanced communication technologies and digital platforms to promote the cultural and creative market with distinctive regional characteristics. Third, international exchanges and cooperation should be strengthened by fostering international collaborations and partnerships to enhance the internationalization of culture and art in Yeongdo-gu.

3.2.4 Leveraging policy support and cultural resource advantages to actively develop strategies for creative space utilization Strategies.

Yeongdo-gu possesses historical sites and cultural facilities that can be creatively utilized to revitalize regional culture and art. To do this, the following can be considered. First, establish cultural

and artistic apaces. Space design and utilization with cultural and artistic projects can be combined to create new and engaging spaces. Second, build creative blocks. Dedicated spaces such as art studios, galleries, cafes, and creative workshops can be provided to attract the public and encourage active participation and immersive experiences. Third, develop cultural display spaces. Designated venues can be created for public art projects, cultural activities, and performances.

3.2.5 Addressing environmental and climate threats and actively pursuing sustainable urban regeneration strategies.

Yeongdo-gu's urban regeneration project should actively promote sustainable development strategies. This can be done through the following. First, improve resource utilization efficiency by promoting the use of renewable energy sources such as solar and wind energy. The adoption of green building practices and energy-saving technologies should be encouraged to reduce energy consumption and carbon emissions in buildings. Second, protect the environment by implementing measures to reduce pollutant emissions, protect ecosystems, and increase urban greening rates. Third, promote social inclusion and equity by encouraging active community participation in urban planning and decision-making processes. Community cooperation and resource sharing should be fostered to create inclusive and equitable urban spaces.

4. Conclusion

This paper analyzed the strengths, weaknesses, opportunities, and threats of the urban regeneration development strategy in Yeongdo-gu by constructing a SWOT-AHP model. The challenges facing urban regeneration projects in Yeongdo-gu mainly include population decline and aging, outdated facilities, and environmental problems. Additionally, it is facing threats from fierce regional competition, economic instability, and climate change. By constructing the strategic quadrilateral structure to assess strategic intensity, it is concluded that the urban regeneration industry in Yeongdo-gu should adopt a pioneering development strategy. The urban regeneration project in Yeongdo-gu, Busan, is of significant importance in revitalizing the local economy, improving the living environment for the elderly, revitalizing the local society and culture, and fostering the tourism industry.

Therefore, in order to seize opportunities, proactive development measures should be taken. First, incorporate smart city strategies, such as intelligent transportation systems, smart energy management, and smart living solutions. Second, develop strategies for fostering regional industries, such as marine energy development, marine tourism promotion, and marine biotechnology advancements. Third, implement policy support measures to facilitate cultural innovation, strengthen international exchanges and cooperation, and promote the growth of cultural and artistic industries. Fourth, utilize creative spaces effectively, including cultural and art spaces, creative districts, and cultural exhibition venues. Finally, adopt sustainable urban regeneration strategies, which encompass improving resource utilization efficiency, protecting the environment, and promoting social inclusion and equity.

However, the limitations of this study stem from the time constraints and the difficulties encountered during the data collection process. Insufficient data poses a challenge, particularly the lack of detailed statistical information on urban regeneration in Yeongdo-gu. Furthermore, subjective evaluations or opinions within the materials of SWOT analysis introduced issues of reliability. To address these limitations, the researcher intends to continue collecting and investigating relevant data on the urban regeneration project in Yeongdo-gu ensuring more comprehensive and sustained research. This study will contribute positively to the promotion of healthy and sustainable development in urban regeneration projects in Yeongdo-gu, Busan. Furthermore, it will provide valuable insights for urban regeneration projects in other cities and regions.

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