

A STUDY ON THE BASIC DIRECTIONS OF SELECTING AND EVALUATING PRIVATE OPERATORS FOR THE DEVELOPMENT OF IDLE SITES ON HIGHWAYS IN KOREA

Jaehwan Kim¹ and Yongkyung Cho^{2*}

¹Associate Professor, Major in Real Estate Studies, Faculty of Regional Development, Kongju Nat'l University, Yesan, Chungnam, Republic of Korea

²Principal Researcher, Department of Research, Archi QPlus co., Ltd., 233,54, Changeop-ro, Sujeong-gu, Seongnam-si, Gyeonggi-do, Republic of Korea
¹jaehwan@kongju.ac.kr, ykcho8@naver.com²

Abstract— This study was developed with the development constraints in consideration of the specificity of adjacent sites on the highway, including development restrictions in the highway and restrictions on the development of related laws. In particular, it included development initiatives with excellent publicity as well as securing adequate profitability in accordance with the development objectives in accordance with the public institution that is the development subject. Through this, the basic direction for selecting private businesses was established in a range where resources are efficiently utilized and minimum profitability is guaranteed to meet the objectives of the adjacent site development project on the highway.

Keywords — Highway, Evaluation System, Business Selection, Idle Site, Public-Private Joint Development Project

1. INTRODUCTION

The development restrictions on highways are expected to limit development of laws related to highways, competition between rest facilities on highways and existing facilities, and strict environmental assessment, and development initiatives that take into account the specificity of adjacent sites on highways are required. Existing facilities on the expressway, such as rest areas and premium outlets, are based on various types of facilities in Korea. In particular, it is necessary to develop a good publicity as well as secure adequate profitability that meets the purpose of development in accordance with the public institution that is the development target. Do. In order to develop a plan for developing a target site on the expressway, a basic status survey on the target site is required, which includes conditions such as land and existing facilities, as well as contract conditions, laws and regulations with the existing facilities. In addition, based on the current status survey, it is necessary to set the development direction of the project target site in consideration of constraints such as regulations and competition with existing facilities. In particular, it is necessary to establish an appropriate evaluation system for selecting private businesses that meet these development directions as it is required to set the development direction by reflecting the results of competition with existing facilities and aggressive environmental evaluations and presenting appropriate alternatives. In

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* Corresponding Author



order to establish an evaluation system such as evaluation criteria and evaluation methods for selecting private companies, it should be established in consideration of the individual characteristics and specificity of the target site to be evaluated. The evaluation system for selecting private companies is established by considering the appropriate development direction, the characteristics of the ordering company, and the ordering purpose. Most of the evaluation systems for selecting private companies in the existing public offering projects are also set up according to the purpose of the ordering company, and thus the evaluation system differs for each evaluation system. In order to select a business, the main evaluation items are predicted by the client and potential participants, and these characteristics are compared, and the basis for quantifying the degree of conformity with the composition of evaluation items of the existing public offering project is presented. Because of its size, it is necessary to establish a customized evaluation system for items in each evaluation field according to the development direction.

Therefore, in this study, a plan was developed to build an evaluation system that complemented the selection of private companies in the existing public offering projects. In addition, it presented directions for establishing an evaluation system that complements the shortcomings of existing private companies. In line with this, due to the lack of artificial distinction and discrimination, such as the difference in the distribution of specific evaluation items, the tendency to partially interpret self-assessment evaluation will be complemented, and in particular, it is necessary to meet the purpose of the adjacent site development project on the highway. We aim to establish an evaluation system to ensure profitability while at the same time developing excellent publicity. Therefore, through the development of idle sites, resources are developed to be used efficiently, so minimum profitability is guaranteed, but economic benefits (development profits that spread to society) and publicity are greater than profitability. We intend to establish a direction and evaluation system.

2. REVIEW OF LEGISLATION AND POLICIES FOR THE DEVELOPMENT OF IDLE SITES ON EXPRESSWAYS

2.1. REVIEW OF THE KOREA HIGHWAY CORPORATION ACT

According to the legal definition of resting facilities on the highway, it is classified as a subsidiary of roads in Article 2 of the Road Act, and for construction purposes, it is classified as a 'rest station' among 'Tourist Rest Facilities' in accordance with Article 3-5, Annex 1 of the Enforcement Decree of the Building Act. In addition, according to Article 40, Paragraph 1 of the rules for road construction and facility standards on the basis of installation, it must be installed on the road to ensure smooth traffic, safety of traffic, or convenience for the public. If you look at the rest area type and installation facilities, according to the Road Design Guide (2012), the general rest area (buildings and works such as transmission lanes, parking lots, charging stations, *etc.*), the freight rest area (facilities of the general rest area and facilities for truck drivers (cargo arrangers), Cargo information center, laundry, bath, sleeping facilities), simple rest area (basic facilities: variable speed lanes, parking lot, green space, toilet) Optional facilities: small shops, gas stations, shelter rest areas (minimum rest space for restrooms, drivers and cars) In addition, according to the road design guidelines (2009), general rest areas (facilities for people, facilities for cars, facilities for the physically challenged) and simple rest areas (simple car inspection and maintenance) will be conducted in a short time. As the minimum necessary facilities that can be installed, parking lot, green space, and entrance / exit transmission lanes such as toilets, convenience stores, gas stations, and convenience stores and toilets are installed on a regular scale. Installation is classified as a cow) is the subject of the installation and the Korea Highway Corporation, pursuant to Part 5 of

Article 12, paragraph 1, the Korea Highway Corporation Act is responsible for gas stations and rest stops installation and management of the toll road.

2.2. RESTRICTIONS ON ACTS BY USE AREA OF ADJACENT SITES ON HIGHWAY

The usage area of the entrance site on the highway in Korea corresponds to the planning management area among the management areas, and it can be designated as a district unit planning area with 100% of the planning management area. In addition, if it is outside the urban area, but 50% or more is a planning management area, it is possible to designate a district unit planning area (Article 51, paragraph 3 of the National Land Planning and Utilization Act). Also, under the National Land Planning and Utilization Act, buildings that cannot be built in the planning management area include: There are facilities, factories, etc., and cannot be built according to the city and county planning ordinances considering local conditions on adjacent sites.

2.3 REVIEW OF LAND USE STATUS AT HIGHWAY REST AREAS THROUGH PRIOR RESEARCH

According to the Ministry of Land, Infrastructure and Transport (2014), "A Study on the Preparation of Guidelines for the Development of Expressway Logistics, Transit and Business Centers, " there were 16 resting places and 32 resting places in agricultural and forest areas and conservation management areas, respectively, about 20% of the total. As a result of analyzing the 189 use areas surveyed among 221 rest areas, it was found that 164 rest areas located in a single use area (87%), and 25 resting places located in two or more use areas (13%). In particular, the total analysis rest area is located in 8 types of use areas, 16 rest areas are located in agricultural and forest areas, and 32 rest areas are located in natural green areas. The eight types of use areas fall into the planning management area, natural green area, conservation management area, agricultural and forestry area production management area, conservation green area, natural environment conservation area, and second general residential area.

3. DEVELOPMENT OF EVALUATION SYSTEM FOR BUSINESS SELECTION

3.1 BASIC DIRECTION OF EVALUATION SYSTEM DEVELOPMENT

The selection of business operators of the public offering type project has a problem in that evaluation areas and evaluation criteria in the competition guidelines differ for each ordering company, and the characteristics of the project cannot be properly reflected. In order to establish an evaluation method for selecting a company, it is necessary to identify and identify each evaluation field in advance, and this study proceeds through the following procedures.

Table I. Evaluation System Basic Direction Procedure

Research goals	Research content	Detailed research content	Research method
Derivation system selection for private companies	Examining the evaluation system for selection of private companies of other organizations	Investigation of evaluation criteria for selection of private companies for public offering Comparative study	Literature review
		Selected as a private company for public offering, surveyed and compared the evaluation method	Literature review

		Deriving implications for applying the existing public offering method to this study	Synthesis of research results
	Derivation of evaluation method suitable for this study	Presenting the basic direction of the evaluation method	Empirical data using causal and effect
		Presentation of evaluation manual	Synthesis of research results
		Derivation of evaluation method	Synthesis of research results

The main purpose of the study is first, to establish an evaluation system for the selection of private operators in accordance with the development direction of adjacent sites on the highway, to evaluate the importance of each evaluation field, evaluation item, and evaluation element, and to develop the final evaluation guidelines have. Second, in order to derive the evaluation field, common evaluation fields are selected based on the cases of related organizations, the contents of the competition guidelines, and the analysis results presented in theories and prior studies, and detailed evaluation items and evaluation elements are identified. Third, through the in-depth interviews between the manager in charge of the ordering party and experts in the field, the final evaluation system with the development direction is completed.

3.2 HOW TO DERIVE THE EVALUATION FIELD OF THE PUBLIC EVALUATION MODEL

There are a number of methods for deriving evaluation items and factors for each evaluation field for selecting a business operator. In general, there are methods based on empirical data based on cause and effect, and methods of quantifying based on expert judgment. In the former case, the latter is more logical and systematic, but in most cases, the empirical data is less maintained or insufficient, and is complemented and constructed by the latter method. In this study, in order to derive evaluation items and factors for each evaluation field, theoretical discussions, prior studies, and cases of related organizations were synthesized, and common attribute-specific indicators consistent with the development direction of this task were selected. We would like to organize the evaluation field for Korea and confirm its validity through consultation with the ordering staff and experts.

3.3. QUANTIFICATION OF BUSINESS PLAN EVALUATION CONTENTS AND EVALUATION METHODS, ETC.

In order to prepare an evaluation system for selecting a company, the evaluation field analysis of the existing open-ended project should be preceded. The analysis data of the public offering type is divided into public enterprises, local governments, etc. to classify the business entities, and classifies each business type to cover the evaluation field. In terms of detailed evaluation, derive items and elements by sector, such as existing development plans, construction plans, business (financial) plans, additional value points, public interest, business planning capabilities of private companies, land bidders, and standards by business type. The evaluation field, items, and elements are selected through the analysis of the contents of the main competition guidelines of the project, and the elements of each evaluation item are selected and composed focusing on the business planning, additional value points, and public benefit effects. In order to derive factors for each evaluation field and item suitable for the target site of this study, weighting is quantified through statistical method procedures.

Calculating the importance of items and elements for each evaluation field for business selection is an important task in the evaluation field analysis, and it is almost impossible to clearly calculate the importance with a formula, especially in a subjective evaluation. In this case, the expert's experience or knowledge plays a large role. In this study, the relative importance is calculated using the Analytic Hierarchy Process (AHP) technique, which has excellent verification ability in subjective evaluation. In addition, the subjective decision-making process is calculated through fuzzy integration, which uses the concept of fuzzy scale according to the measurement of the absolute importance of items in the evaluation field. The fuzzy measure is the contribution of individual evaluation items to the higher evaluation items, and the problem is that the reliability of the values is not high. On the other hand, the relative importance obtained through one-to-one comparisons between evaluation items can be considered to be relatively high. In consideration of these conditions, using the fuzzy scale, the absolute importance, which is the extent to which the evaluation items and elements contribute to the higher evaluation fields, is obtained and reflected in the relative importance of items and elements for each evaluation field obtained from AHP to calculate the correction value to objectively evaluate the evaluation score.

4. CONCLUSION

This study was to establish a basic process and direction for selecting a private business operator by deriving a development plan that takes into consideration the specificity of adjacent sites on the expressway, such as restrictions on development of related laws as well as development constraint requirements in Korea's expressways. In particular, the research was conducted with a focus on the basic direction for the selection of a private business operator to finally implement the project. This is a development plan that ensures appropriate profitability and publicity in accordance with the development purpose in line with the public institution that is the development subject. Direction included. Through this, it was possible to efficiently use resources according to the purpose of the adjacent site development project on the expressway and to establish basic guidelines and direction for selecting private businesses to the extent that minimum profitability is guaranteed. In order to establish an evaluation system such as items, criteria, and evaluation methods for evaluation sectors for selection of private businesses by reflecting environmental evaluation results and suggesting appropriate alternatives, it is necessary to include both the individuality and specificity of the target site to be evaluated. Through this, ultimately, the evaluation system for the selection of private businesses should be established in the basic direction along with the proper development direction, the characteristics of the ordering party, and the purpose of ordering. In significance together.

Through this study, it is expected that the evaluation system for the selection of private businesses for the development of idle sites in the highway will be specifically drawn and used in practical evaluation in the future. However, it is the limitation of this study that the method of selection through the demonstration or the proposed direction using specific data has not been proposed. We expect that these areas can be improved through follow-up studies.

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