

A Study on the Feasibility Study for Local Government Investment Projects- Focusing on development of local sport complex

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Abstract

This study focused on the feasibility analysis conducted in advance to secure the soundness of local investment projects and to measure their business feasibility. The assessment method was proposed through a net present value, internal return rate and cost benefit analysis in order to comply with the feasibility assessment for the establishment or development of various commercial facilities, including the development of sports facilities in the region by local governments. This enabled us to present the evaluation system and evaluation results that should be considered in the future, along with an important measure of the success or failure of the operation of the facility (estimated project cost relative to facility fees).

Keywords: *Local Government Investment Project, Feasibility Study, Net Present Value, Internal Rate of Return, Benefit Cost Analysis, Sports Complex¹*

1. Introduction

As a result of the implementation of the local autonomy system, local governments' investment in public investment projects has continued to increase[4]. However, due to lack of reasonable and systematic management of investment projects by local governments, inefficient investment projects are occurring in local governments[6]. It is necessary to develop an evaluation method that can be easily applied by local governments by focusing on the methodological consideration and application of the existing investment feasibility analysis[7]. Therefore, this study proposes a method of evaluation in accordance with the feasibility assessment of the establishment or development of various commercial facilities, including the development of sports facilities in the region by local governments. Through this process, we intend to present the evaluation system and evaluation results that should be considered in the future along with important measures to measure the success or failure of the operation of the facilities.

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2. Theoretical background

2.1. Concepts of Local Investment Projects

Investment projects by local governments are distinguished from those by the central government[3]. This stems from differences in financial functions between central and local governments[2]. First, the targets and types of local investment projects can be summarized as follows, depending on the extent of their public nature and whether they are capital goods or consumer goods[5]. There is a basic local public good as a commodity that should be basically supplied regardless of the characteristics of the region, including general administration, security, police, education, fire fighting and health administration services[1].

Second, the construction work, which is directly related to the daily lives of local residents, includes water supply, roads, transportation, telecommunications, electricity, sewage treatment, and provincial hospitals[10]. Third, a series of local public capital materials, such as toxic acid measurement related to local industrial and economic development, forest development, reclaimed land development, local oil resource development, tourism industry development, dairy development, and small and medium-sized enterprises development, can be divided into one type[8]. Fourth, local public consumer goods, such as parks, environmental cleanup, pollution control facilities, public sports facilities, day care centers and kindergartens, and other local public welfare facilities related to the living environment and welfare level of residents[12]. Among the above local public works, local investment projects that are primarily subject to investment projects by local funds are generally the second and third local public capital goods.

2.2. Pre-Study Review

In this study, prior research was reviewed only for studies related to the review of financial investments. If we look at these studies by classifying them, we can summarize them by analyzing problems in the system of investor sentiment and suggesting improvement measures, and secondly, by dividing them into normative studies on investment fraud and guidance development that can enhance objectivity and rationality of the investor sentiment process and thirdly, research on business types corresponding to investor sentiment.

First, among the studies that suggested measures to improve the investor sentiment system itself presented problems and improvement measures for the investor sentiment system, while this paper argued for rational allocation of investment funds and strengthening of his own investment[9], and the method to improve the target type of investment survey and the investment survey to enhance the public. In addition, other paper analyzed the case of investor sentiment in the Seoul Metropolitan Government, emphasized the link with other systems such as mid-term financial plans and budgets, introduced foreign cases to Korea, and presented non-metric assessment factors other than metering analyses, emphasized the cost-benefit analysis of investment audit projects in most studies, and presented professional recommendations and screening techniques of investment audit departments.

Second, as a normative study of investment fraud techniques and guidelines development that can enhance objectivity and rationality in the investor sentiment process, this paper introduced cost-benefit analysis and economic efficiency analysis methods using investor sentiment techniques and suggested measures to improve efficiency through economic analysis.

Third, with a study on the types of projects subject to investor sentiment, this paper classifies projects subject to investment audit as routine, ancillary, developmental, and social basic projects according to social functions, while other paper distinguishes between production

entities and purchasing entities. Another paper divides supply costs and benefits by scope, and different paper types public investment according to the size of the ripple effect.

As a result of the above prior research, the research has been focused on drawing up and presenting the problems and improvement measures of the investment screening system as defined by the Local Finance Act[11], or on presenting improvement measures to enable investors to operate realistically and efficiently by analyzing factors affecting the development of investment audit techniques, the type of public investment projects, and investment decisions[13]. This study is intended to present the possibility of improvement and utilization of the judgment indicators for future decision making through the feasibility analysis process through specific examples of sports complex facilities at the community welfare level, one of Korea's local financial projects.

3. Conditions of analysis

A case of Gyeonggi-do was taken and analyzed for the construction of sproplex in the area. The project construction cost is estimated at 4.5 billion won in total, and the total benefit from the construction of the sports complex is estimated through the value of the residents' use, which can be obtained by multiplying the cost of using the sports complex with the demand for the residents' use. In accordance with the survey of residents in other local governments, 10,000 won, which was the highest response frequency according to the residents' survey, was set as the minimum benefit, and 12,000 won of the fees obtained from the current business destination was set as the maximum benefit. In addition, the usage demand is different from the number of people in the region because the number of people using the sports complex is calculated by referring to the case of similar facilities in other areas near Gyeonggi Province, and the annual number of people using the sports complex is calculated by the number of people using the sports complex (participation population × participation frequency).

In addition, the criteria were set as shown in Table 3 to estimate the benefits of residents' value in use, and the number of pool lanes in the sports complex was based on 20 lanes, assuming an operation rate of 50% on a 12-hour, 300-day-per-year basis. This resulted in an annual estimate of 36,000.

Table 3. Criteria for estimating benefits (citizens' value in use)

Category	Sortation	Value	Remarks
Pool Rains	A	20	Planned Rain Count
Daily operating hours	B	12	Operating hours for sports complex (water pool) in other regions
Number of operational days per year	C	300	Number of days of operation for sports complex (swimming

			field) in other regions
operation rate	D	0.50	Ratio of rain to maximum capacity
Annual number of users (E)	$A*B*C*D$	36,000	36,000 (people)
Value in use (minimum)	$E*10,000\text{KRW}$	360,000,000	(KRW)
Value in use (max)	$E*12,000\text{KRW}$	432,000,000	(KRW)

On this basis, assuming that the minimum benefit is CU10,000 per day for the service charge, the annual value in use is CU36 million and the maximum benefit is CU12,000 per day for the service charge is CU432 million.

Table 4. Cost Estimate Criteria

Category	Sortation	Calculated value
Per capita operating personnel	A	0.2
Total Rain count	B	20
Total number of operating personnel (C)	$A*B$	4
Total operating costs (yearly); Assume 2.5 million won per month (D)	$D*C$	120,000,000(KRW)

Table 5. Benefit summary

Sortation	Benefit (one million KRW)		Remarks
	Minimum	Maximum	
Benefit total	10,800	12,960	Assume 30 years of actual operation. There is no annual increase in usage fees of maximum and minimum estimates of benefits, but operating costs rise by 2% each year.
Net Present Value (NPV)	-1,115	58	
Internal Return Rate (IRR)	1.91%	4.24%	
cost-benefit ratio (B/C Ratio)	0.840	1.008	

In this study, an estimate of the annual minimum value of use based on the estimated demand for building a sports complex is CU10,800 million and the maximum value of use is CU12,960. Under the Local Public Enterprises Act, the net present value (NPV) for the minimum benefit assumption was -11.5 million won, the B/C ratio (B/C) was 0.84 million won, and the maximum value for the internal benefit was 58 million won, by discounting the building's durable life (completed at the end of 2020; operated for 30 years from 2021 to 2048).

4. Conclusion

This research was conducted through an overall feasibility analysis process, from development planning to project feasibility assessment based on the construction of a sports complex, one of the representative types of local financial investment projects. In the first phase, the estimated cost of project construction was identified, and in the second phase, the maximum and minimum write-offs and operating expenses incurred during the period of operation were extracted, in particular, from similar cases through existing research and literature. In the third phase, the maximum benefit and the minimum benefit were calculated based on the analysis summarised earlier in Step 2, from which the decision index was derived. The results of the analysis are as follows. For the two minimum and maximum benefits, it was proposed that the value of residents' use in the sports complex construction project falls short of the social discount rate in all three respects: B/C, NPV and IRR. In particular, if the minimum benefit is assumed, the economic analysis results in little relevance in terms of B/C and NPV, and deficit operation of the sports complex is expected every year. Therefore, it is believed that implementation will be possible if the annual budget for the operation and maintenance of the bowling alley is secured reliably through various additional revenue-generating measures. In addition, it can be expected to raise operating costs through the operation of a public sports complex when the residents' demand for sports facilities is secured, and if non-economic external factors are taken into account due to the nature of public sports facilities, the residents and their friends can meet their needs for sports activities, improve health, and provide opportunities to watch sports at a high level by hosting national bowling competitions. In addition, the ripple effect can be expected to be greater if revenue from the operation of a permanent store, etc. is taken into account in addition to the service fee.

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