

The Importance of Risk Factors in Urban Housing Development Project

Hongjin Kim*

*Mokwon University, Korea,

E-mail : winter12@naver.com

1. Introduction

Urban housing is a new housing type introduced for the residential stability of the working class and 1~2 person households. The government has been increasing urban housing supply with broad support, including the relaxing of construction criteria through revision of the Housing Act, and the low-interest public housing fund policy. Most of the contractors performing urban housing development are small and medium companies with low-fund operating abilities. Due to unsold urban housing development project units resulting from surplus supply in certain regions and excessive concentration in the supply of studio-type units, these companies suffer funding pressures and project feasibility is harmed. Therefore, in this study, a comparative review of existing studies relating to real estate development projects to identify common risk factors. Also, to establish a risk system appropriate for urban housing, an FGI was performed with professionals having at least 10 years of practical experience. Also, with a focus on the deducing of risk factors specific to urban housing, and the analysis of their importance, AHP analysis was used in the first phase to analyze the relative importance of risks by phase, attribute, and factor. To supplement AHP analysis, which is intrinsically subjective, fuzzy analysis was used for the second phase analysis. By calculating the absolute importance, the relative importance as defined through the internal relationships of fuzzy measures was corrected, finally using Choquet fuzzy analysis to calculate final risk importance and composite risk level. Choquet fuzzy integral allows for the alleviation of the extremity of strongly subjective risk factor risk level calculations, as well as objectivity

2. Empirical Result

2.1. The system of Analysis

[Table 1] Comprehensive level of risks for high stage

Stage	Level of Importance	Rank	Comprehensive level of risks	Rank
Pre-development stage	0.749	1	0.275	1
Development preparation stage	0.308	2	0.354	2
Development stage	0.240	4	0.572	4
Management and operational stage	0.286	3	0.482	3

[Table 2] Comprehensive level of risks for lower stages (Omitted)

Stage	Risk attributes	Level of importance	Comprehensive level of risk	Risk factors	Level of importance	Level of risk
Pre-development stage	Location and environmental risk	0.581	0.348	Commercial value of the location prerequisites	0.807	0.214
				Appropriateness of the purchase price of the land for the business	0.306	0.369
				Competition with same category of real estate in the region	0.504	0.271
				Convenience of traffic and environmental conditions	0.267	0.415
	Risk of the business conditions	0.551	0.392	Appropriateness of the format of the business pursuit	0.533	0.234
				Appropriateness of the scale of the construction	0.356	0.421
				Appropriateness of the duration of the business	0.190	0.583
				Appropriateness of the investment scale of fund for the business	0.193	0.524

2.2. Empirical Result

First, in the comparison of importance by stage and composite risk level comparison, the pre-development stage was found to be the most important result. Next was the development preparation stage, with high importance and composite risk level. Following in order of importance were the management and operation stage, and development

stage.

Second, as for the results for importance and composite risk level by risk attribute, the most important among the pre-development attributes was the location and environmental risk attribute, followed by the importance of commercial district and composite risk level. As for risk sub-factors, feasibility of the location had high importance. In the development preparation stage, funding (financial) risk was calculated as most important, with licenses and permits, and law and policy risk following. Resident complaint risk scored the lowest, indicating that the risk burden was lowest. As for the importance of risk sub-factors, expansion of parking space, expansion of access roads, and changes to prospect rights are scored highest. In the development phase, the risk of unsold units scored higher than the risk of construction suspension due to insolvency. It was shown that as for the importance risk sub-factors, limitations in procuring funds on the part of the developer and contractor was most important.

Last, in the management and operation stage, it was shown that settlement risk in the sharing of profits was more important than move-in risk. As for risk sub-factor importance, conflicts between developers during sharing of profits scored highest.

3. Conclusions

The project feasibility and profitability of urban housing, extensive government support through Public Housing Funds, and the relaxation of legal requirements for parking lots and supplementary/welfare facilities, were advantageous policies for small and medium developers and contractors. However, the drop in profitability being experienced recently due to unsold units was the result of excessive supply and high sale prices with disregard for regional characteristics, and the continuation of existing supply practices failing to consider the continued supply of alternative real estate such as officetels and hofficetels.

Contractors need to reflect these risks at the practical level to carefully research and analyze project sites in light of the demand in the area, connection with business facilities in the vicinity and the appropriate number and type of units, while establishing development plans that take full advantage of the relaxations in legal construction requirements.

As for the government, urban housing policy that guarantees the qualitative improvement of the residential environment amid the growing demand for smaller housing in response to the increase in 1 ~ 2 person households is needed. Also, for the continued supply of housing for smaller households, the government must provide development alternatives differentiated by area, and apply stringent review standards to the providing of aid through the Public Housing Fund, in consideration of the structural problems often had by small to medium developers and contractors.

4. References

- [1] Kwon, Soon Hak, "Fuzzy set, fuzzy measurement and fuzzy intergration", *The Journal of Control Automation System Association*, 1995
- [2] Kim, Deok Rye & Kim, Li Young, "Analysis of the characteristics and means of advancement in urban residential projects" Korea Housing Institute, 2010.
- [3] Kim, Hong Jin & Chung, Jae Ho, "Study on the importance of risk factors of urban residential development projects", *The journal of reas estate convergence association*, 2014.
- [4] Kim, Jin A & Cho, Gyeong Soo, "Study on the means of urban residential development through remodeling of aged apartments", *The journal of architectual institute of Korea*, 2009.