Project Social Stability Risk Assessment and the Resolving Measures Research

Hao WANG*

School of Civil Engineering and Architecture, Jishou University, Zhangjiajie 427000, Hunan China

*Corresponding author

Keywords: Engineering project, Social stability risk, Risk assessment, Risk defuse.

Abstract. Project social stability risk analysis use a variety of management theory and technology, quantitative and qualitative, combined with technical, index evaluation and experience judge, among them: risk assessment is mainly adopt risk factor control check list, risk probability matrix, computation of risk index method analysis, estimate, determine project risk level; risk prevention and resolving measures are mainly to lighten, resolve, and avoid the social stability in different stages of the project risk factors, the effective measures to achieve the goal of low degree of risk control and influence.

Introduction

The risk analysis of social stability of engineering project uses a variety of management science and technology, adopting the combination of quantitative and qualitative, comprehensive and technical, indicator evaluation and empirical judgment. Risk assessment, mainly through the use of risk factors control checklist, subjective probability expert estimation, risk probability-impact matrix, risk index calculation, comprehensive assessment method and participatory evaluation methods to analyze, estimate, and judge the project risk level. Measures to prevent and resolve risks, mainly put forward the effective measures, to resolve and avoid the project social stability risk factors in different stages, sort out and divide the main body of responsibility and the assisting unit of measures in each time period, identify the responsibility and the assisting unit, determine the division of responsibilities, implementation time and requirements, etc. Efforts should be made to fully implement relevant measures to reduce the impact of social stability risks and achieve the goal of controllable risks and low impact.

Research and Application Status

The research on social stability risk assessment and countermeasures is mainly reflected in the multi-angle and interdisciplinary analysis and exploration on the aspects of assessment method, assessment process, mitigation measures and measures guarantee mechanism. Gao Shan[1] analyze the analytical and participatory evaluation models of social stability risk. In addition, a new model combining the two models is proposed to remedy the defects of the two models, it gives better play to the evaluation of the two models. Chengshubo[2] propose16 influencing factors on the construction of a subway project in zhengzhou, the analytic hierarchy process (ahp) was used to calculate the weights. According to the degree of influence, puts forward the corresponding preventive and dissolving measures for the first five items with larger influence factors. Suna[3] improved the simplification of existing risk assessment subjects, put forward the model of multi-subject evaluation, and citizens and social organizations are invited to participate in the risk assessment, it is conducive to obtaining scientific, fair and objective evaluation results. Finally, she puts forward corresponding countermeasures and Suggestions on resource sharing and feedback mechanism. Jian xinyue[4] made a detailed elaboration on the ahp to evaluate the risk of social stability, and applied it in the second project of zhangjiajie hehua airport. Practice has proved that the application of ahp can assess the risk degree objectively and the result is reliable. Wang bo, Huang dechun[5] based on the characteristics of social system vulnerability of water conservancy
projects, introduced four indicators of social risk exposure, public risk cognitive, sensitivity and coping ability to evaluate the social stability risk of water conservancy projects, and conducted empirical research on a water conservancy project. Xu changming et al. used qualitative risk logic tree method to evaluate the risk of social stability, introduced the analysis principle of this method in detail, and summarized its features and application scope. Cao zuyao et al. described and analyzed the causes of nimby risk concept, and studied, and proposed measures to prevent and resolve nimby risk. Zhou sien et al. adopted the two-stage method to conduct risk investigation and risk factor analysis, introduced the analytic hierarchy process to identify risk factors, and determined the level of risk level according to the risk matrix, and selected a road project for instance analysis.

**Social Stability Risk Assessment Methods**

**Social Stability Risk Assessment and Risk Rating Judgment**

Risk estimation is the process of assessing the identified risk (refer with: Fig.1), and making a comprehensive analysis and estimation of the possibility and impact of risk events. The content includes the estimation of risk probability and risk occurrence time. Since the risk database of the project is not complete before implementation, the comprehensive evaluation method based on expert experience is adopted to evaluate the overall risk of the project. Semi-quantitative matrix evaluation method was used to evaluate the main risk factors of the identified project. Specifically, definition, description and quantitative criteria of risk level, degree of risk impact and probability of occurrence of risk is given based on three variables. The risk matrix is given based on three variables for risk assessment.

![Figure 1. Basic steps and methods of risk assessment.](image)

Risk judgment is to estimate the overall initial risk of the project comprehensively on the basis of single-factor risk analysis, compare it with the given risk level evaluation criteria, and determine the initial risk level and the priority of risk prevention, and decide whether to take corresponding preventive measures. The impact of the social stability risk on the project can be divided into three levels: high risk, medium risk and low risk, according to the public's opinions, opposition,
understanding and support to the project implementation, and whether it can effectively prevent or resolve conflicts.

**Measures to Prevent and Defuse Social Stability Risks**

In order to prevent and defuse the risks that may arise from the implementation of the proposed project at the source, the purpose and strategy of risk prevention and resolution must be formulated according to the actual situation and characteristics of the proposed project and the main and key risk factors. Risk prevention and mitigation measures mainly include comprehensive and special measures, as well as measures such as prevention at the source, process dissolution and timely handling of risks germination. Identify the responsible parties of the safeguards, Clarify the responsibility of prevention, time nodes and specific work content. Ensure the risk can be managed and controlled within the effective time limit to minimize the unstable factors.

The risk level needs to be assessed after measures are developed and implemented. A summary and comparison table of risk changes of various factors before and after implementation of the measures can be prepared (refer with: Table 1), and the risk factors can be analyzed one by one. The evaluation result is the risk level of social stability of a project (refer with: Fig.2).

**Table 1. Comparison table of various risk changes before and after implementation of the measures.**

| Order number | Risk factor | Risk probability | Incidence | Degree of risk |
|--------------|-------------|------------------|-----------|---------------|
|              |             | Measures before  | Measures after the measures | Measures before  | Measures after the measures | Measures before  | Measures after the measures |
| 1            | Example risk 1 | larger            | medium    | common        | lesser        | grave        | larger           |
| 2            | Example risk 2 | medium            | lower     | common        | lesser        | common        | lesser            |
| ...          | ...         | ...              | ...       | ...           | ...          | ...          | ...               |

According to the overall goal of the project construction, improve the risk control ability, reduce the potential risk harm, analyze and select reasonable risk prevention measures. There are four kinds of commonly used risk prevention measures. In the specific implementation process, one or more risk prevention measures and their combination can be adopted.

One is to reduce the possibility of risk occurrence or the adverse consequences of risk mitigation by means of mitigation or estimation, so as to achieve the effect of risk reduction, namely risk mitigation. When implementing risk mitigation strategies, it is best to reduce the risk of each stage of the project to an acceptable level, so that the risk of the entire project is reduced. Risk mitigation is an active risk prevention strategy. It is often more effective to implement risk management in the early stages of the project life cycle.

Second, when the risk occurs and other appropriate risk response strategies cannot be found, take active actions to bear the consequences of the project. At this point, the expense incurred can be considered as the cost of the project. The measure applies in three cases. One is to know the risk, but gains more than losses. Second, we know the risks and take corresponding preventive measures. The expenses are relatively large, which far exceed the expenses and losses borne by ourselves. Third, there is a risk of high frequency and loss-less.

Third, when the probability of project risk occurrence is large, the consequence may be more serious and bad, and there is no effective method to eliminate the risk. According to the actual situation, development trend and control ability, the project strategy implementation plan should be actively changed, or even abandoned, so as to avoid the risk. Risk aversion is mainly to interrupt the source of risk, so that it does not occur or curb its development. Risk aversion is the most thorough risk management.

Finally, the feasibility and effectiveness of the supplementary and complete risk prevention and settlement measures are analyzed, and the possible changing trends and results of the risk degree of each risk factor are predicted. The risk level after the implementation of the prevention and settlement measures is evaluated, and a clear analysis conclusion is given.
Conclusion

Through reading relevant literature, this paper briefly describes the basic status of research on social stability risk assessment and countermeasures by domestic researchers. The risk assessment of social stability is divided into four steps. They were respectively identify and rank social stability risk factors, identify stakeholders and rank them, identify major social stability risk factors and determine their degree and propose measures and recommendations. This paper studies the basic method of social stability risk analysis from three aspects of risk factor identification, risk estimation and risk level judgment, risk prevention and countermeasures.

Acknowledgement

This research was financially supported by the Scientific research project of Hunan Province Education Department (ID: 16C1340).

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