

Project Investment Decision Considering Background Risks

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Abstract

In the process of project investment decision, the decision maker faces background risks as well as project risks. There often exists a correlation between the background risk and project risk. Therefore, this paper constructs a project investment decision model considering background risks and analyzes the effect of the correlation between the background risk and project risk on investment decision compared with the existing studies. Firstly, the effect of correlation between the additive (multiplicative) background risk and project risk on the investment decision is discussed when the additive (multiplicative) background risk exists alone. Secondly, the investment decision model considering two kinds of the background risks is constructed. Then, the method of monte carlo simulation is used to obtain the results under different degrees of correlation. Based on these, this paper analyzes the impacts of the correlation and correlated degrees between the additive (multiplicative) background risk and project risk on investment decision. Finally, the research conclusions and limitations are summarized.

Keywords

background risks; additive background risk; multiplicative background risk; project investment decision

Biography

Yao Zhang is a professor in the Department of Operations and Logistics Management at the Northeastern University, Shenyang, China. She received the B.E. degree in industrial foreign trade from Northeastern University (NEU), the M.S. degree in Management from NEU, and the Ph.D degree in Management Science and Engineering from NEU, respectively. She has published papers in the following international journals: *Information Sciences*, *International Journal of Project Management*, *Computers and Operations Research*, *Computers and Industrial Engineering*, *Applied Mathematics and Computation*, *Soft Computing*, etc. Her research interests include project risk management, service operations management, and logistics management.