Li, Yanhua; Yang, Xingyu; Niu, Lei; Zhang, Yueting

Research on PPP financing model selection group decision based on the hesitant fuzzy complementary preference.  
(Chinese. English summary)  

Summary: In view of the problem of subjectivity and variability in the current PPP financing mode selection, based on the hesitant fuzzy set theory, a decision model of PPP mode selection group is constructed. Based on economy, applicability, risk and complexity, the model is used to construct a decision index system. The initial weight is determined by combination of expert legal weight and expertise weight. The preference information of expert decision is expressed by hesitant fuzzy number, which improves the validity and rationality of PPP financing mode scheme selection decision. By setting up threshold index of group consensus and by adjusting expert weight and individual preference at the same time, the level of expert consensus is improved. According to the scoring function, the scheme ranking of the final consensus level is obtained. Through an example analysis of an intercity railway project, it can be concluded that the proposed model can select the appropriate financing mode of PPP project accurately and effectively.

MSC:
90B50  Management decision making, including multiple objectives
03E72  Theory of fuzzy sets, etc.
91B06  Decision theory

Keywords:
PPP financing model; multi-attribute group decision making; hesitant fuzzy complementary preference; consensus level

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