Competitiveness Evaluation of International Contractors Based on Back Propagation Neural Network

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SUMMARY

The global high-speed rail network is rapidly expanding across continents worldwide. In 2009 the Obama administration proposed the integration of high-speed rail plans to expand the transportation network in America. A new round of international transport market competition is about to occur. Chinese contractors should seize opportunities in the high-speed rail market of the United States and do adequate technical and market preparation for entering the markets of developed countries in Europe and America as the top international contractors. The purpose of this paper is to discuss this issue from the perspective of international competitiveness of international construction contractors. Firstly, the paper establishes a model to evaluate competitiveness of international contractors through three first-level indexes and 11 second-level indexes. Then we build a quantitative evaluation model of competitiveness by Back Propagation Neural Network for international contractors, and choose 123 contractors from Engineering News-Record reports to test the effectiveness of the proposed model. The results are as follows: 1）Most of the Chinese contractors belong to the third level of market as market chasers; 2) Compared to Bechtel, one top international contractor from the U. S., China Railway Construction Corporation has almost equal abilities in market development and sustainability, but China Railway Construction Corporation is far weaker in international expansion; 3) The overall performance of China Railway Construction Corporation in 2013 is weaker than in 2011 and 2012.

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