

A Hybrid Multi-Criteria Decision Model for Technological Innovation Capability Assessment: Research on Thai Automotive Parts Firms

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Abstract

The efficient appraisal of technological innovation capabilities (TICs) of enterprises is an important factor to enhance competitiveness. This study aims to evaluate and rank TICs evaluation criteria in order to provide a practical insight of systematic analysis by gathering the qualified experts' opinions combined with three methods of multi-criteria decision making approach. Firstly, Fuzzy Delphi method is used to screen TICs evaluation criteria from the recent published researches. Secondly, the Analytic Hierarchy Process is utilized to compute the relative important weights. Lastly, the VIKOR method is used to rank the enterprises based on TICs evaluation criteria. An empirical study is applied for Thai automotive parts firms to illustrate the proposed methods. This study found that the interaction between criteria is essential and influences TICs; furthermore, this ranking development of TICs assessment is also one of key management tools to simply facilitate and offer a new mindset for managements of other related industries.

Keywords: technological innovation capability, fuzzy delphi method, Analytic Hierarchy Process (AHP), Vlsekriterijumska Optimizacija I Kompromisno Resenje (VIKOR) method

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