Diversified Paths to Improve Operating Efficiency of Patent Operation Platforms:

A Fuzzy-Set Qualitative Comparative Analysis Based on TOE Framework in

China

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Abstract

Purpose: There is a trend to identify patent intermediary in the context of platform ecosystem in China, especially after the release of 'develop a market-oriented way to promote intellectual property operation services' from China National Intellectual Property Administration (CNIPA) in 2014. Called as 'patent operation platforms'(POPs), they have made a great contribution to Chinese patent market, with providing several patent related services. Yet, few studies have focused on their operating efficiency in the current patent market. This study evaluates them by using a fsQCA method under TOE framework in purpose of exploring paths to improve POP's operating efficiency.

Key Literature Reviews: The emergence of patent intermediary in the patent market can be embarked on the construction of patent system and the implementation of patent monetization strategy (Petrusson,2010; Krishna, 2020). Based on the innovation ecosystem, POP plays the role of creating and sharing values of related innovation resources as the carrier in the innovation ecosystem, aiming to stimulate the patent market, revitalize the value chain of patents, and promote the co-prosperity of all market players in the innovation ecosystem(Yun,2021). However, studies focus on evaluating their operating efficiency are limited (Kim,2020). Moreover, the factors influencing POP's operating efficiency are still under explored (Og et.al,2020). Thus, in order to fill the research gap above, this study will evaluate the operating efficiency of POP in China, by using the methodology of fsQCA under the instruction of Technology-Organization-Environment framework (TOE).

Methodology: Qualitative comparative analysis (QCA) that first proposed by Ragin in 1987 is a case study oriented qualitative and quantitative research method (Ragin,1987). The approach is believed to have an advantage over a more traditional method of statistical analysis, such as regression analysis for hypothesis testing (Wang,2020). Therefore, in order to explore diversified paths to improve operating efficiency of POP , the configuration effect of factors influencing POP's operation should be identified. This paper will explore these factors under a TOE framework, and find out which connections of factors can make huge impact on POP's operating efficiency.

Findings: Based on TOE framework, this paper uses fsQCA to analyze the configuration of antecedent conditions for high operating efficiency of 34 POPs in China. It is found that the configuration of high operating efficiency of patent operating platforms is two categories: two-sided platform-driven and product platform-driven. The construction of digital infrastructure and knowledge assets are the core conditions, and the environmental dimension is a marginal condition that cannot be ignored in every configuration.

Research limitations: This paper still has some limitations, such as POP in more countries can be involved, regression analysis or ANOVA is available since the single influencing factor can be further discussed.

Keywords: operating efficiency; patent operation platform (POP); fsQCA; TOE framework.

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