

Review of: "Strategic Citations in Patents: Analysis Using Machine Learning"

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Potential competing interests: No potential competing interests to declare.

The author proposes an alternative approach to measuring knowledge relatedness in patents by employing an unsupervised machine learning algorithm called Doc2Vec to capture the proximity of ideas expressed in patent text.

The study acknowledges that patent citations are widely used as indicators of knowledge relationships between patents. However, the paper highlights that citations may be susceptible to strategic biases. Inventors and firms may strategically manipulate their citation behavior by over-citing to mitigate the risk of litigation or under-citing to expand the scope and value of their patents.

Based on analyzing the textual similarity among patents, the research findings indicate the following:

Strategic omission of citations to patents in different cities: The study presents evidence suggesting that applicants strategically omit citations to patents filed in different cities. This behavior is driven by the lower likelihood of discovering potential infringement when patents are filed in different jurisdictions. By refraining from citing similar patents from different cities, inventors and firms may reduce the risk of legal complications.

Decreased self-citations after changing firms: The analysis reveals that inventors cite their own previous inventions less frequently after they switch firms. This finding strongly suggests that there are strategic omissions in the citation behavior of firms. Inventors may strategically reduce self-citations to enhance the novelty and perceived value of their new patents, potentially gaining a competitive edge.

The paper employs machine learning methods, including natural language programming and data analysis, to categorize and analyze the similarity among over one million patents. By doing so, it aims to uncover behavioral biases present in inventors' citation patterns.

In the conclusion, the author summarizes the key findings of the study. The research confirms that strategic considerations can influence citation behavior. While higher overall citation counts may provide protection against potential litigation, inventors and firms aim to strike a balance by avoiding excessive citation that could limit the scope and value of their patents. Additionally, the analysis indicates strategic omissions in citation behavior, particularly in the context of non-local patents and inventors who change firms. These findings contribute to the understanding of strategic biases in patent citations.

