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Can intellectual property reveal the true innovators of sustainable change?

Evaluating green patents and trademarks as effective indicators of eco-innovation

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The urgency of transitioning to a green economy has put a spotlight on eco-innovation across industries. Small and mid-sized enterprises (SMEs) are essential players in this transition. Traditionally, green innovation has been identified through surveys, but there are limitations, including low response rates and potential biases. This study explores the viability of using intellectual property (IP)—specifically green patents and trademarks—as a more objective alternative to survey-based identification of green innovations.

WHAT WE STUDIED

This research used survey, patent, and trademark data from German and Italian SMEs. For Germany, data included over 10,000 medium-sized manufacturing firms, while Italy's data set covered around 64,000 SMEs across various sectors. Researchers applied several classification methods from organizations like the World Intellectual Property Organization (WIPO) and the European Patent Office (EPO) to label green patents and trademarks. These were then matched with survey responses to evaluate how well IP indicators reflected actual green innovations.

KEY INSIGHTS

Green Trademarks Outshine Patents in Indicating Product Innovation

Green trademarks are shown to be valuable indicators of product innovation, especially in established small firms. This is particularly significant as trademarks are used across both technological and non-technological innovations, making them suitable for identifying green products and services.

Green Patents: A Weak Link in Eco-Innovation Detection

The analysis reveals that patents are less effective in identifying green innovation, particularly when considering firms' entire patent portfolios. Green patents may fail to capture process and business model innovations, which are essential for a comprehensive view of eco-innovation.

Divergent Impact Based on Firm Size and Industry

Smaller firms, which typically hold fewer patents, are likely to be underrepresented by patent-based indicators. In contrast, green trademarks proved more reliable across different firm sizes and were especially predictive of innovation in non-technological sectors like services.

Cross-Country Differences Reflect IP Culture Variances

The study also highlights differences in green IP application between Germany and Italy, with cultural factors and industry focuses affecting the adoption of green trademarks versus patents.

TAKEAWAYS

For Policymakers

Trademarks could be a better policy focus when identifying green innovators, especially in smaller and non-technological firms, as they reflect broader types of innovation.

For Investors

Using green trademarks as a benchmark could improve investment decisions by providing a more accurate view of a firm's eco-innovative capabilities.

IMPACT

This study contributes to discussions on the role of IP in identifying sustainable innovation and suggests

caution in using patents as the primary measure. It urges a balanced approach incorporating both patents and trademarks, particularly in industries or firms where patents are less prevalent. Further research could explore additional IP metrics or combine IP data with surveys to provide more nuanced eco-innovation insights.

RECOMMENDATIONS

To advance green innovation identification, it is recommended that policymakers prioritize trademark data for eco-innovation tracking. Firms could also consider developing green trademarks as a visible commitment to sustainability, aligning their brand with eco-friendly practices.

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