

策略察覺與企業從事綠色技術創新行為之探討

A Study on Strategic Awareness and Corporate Green Technological Innovation Behavior

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企業在「利益」至上的時代已經過去，更多得是將環境保護、永續發展等價值納入策略察覺，並透過綠色技術創新做出策略行動。若能良好回應這些外部壓力，除了對環境社會做出積極貢獻，還能在市場中獲得更多投資意願，同時避免環境法規的裁罰與商譽受損。因此，策略察覺如何影響企業永續行為投入是相當重要的議題。本研究以我國 207 家公開發行的製造業廠商為例，資料來源主要自我國公開發行製造業廠商公示資訊、廠商年報資訊、在我國智慧財產局申請技術專利案，並以年為單位資料，收集 2005 年至 2020 年樣本廠商所有資料，並將策略察覺形式與綠色技術創新依其操作型定義進行變數編譯，建構一追蹤資料庫，利用迴歸分析進行實證研究。研究結果指出積極型策略察覺對於綠色產品和流程創新具正向顯著影響。積極型策略察覺包含重視循環經濟、加強碳揭露與建立環境管理系統等措施，能夠降低有毒材料使用、提升產品可回收與再利用性，以及使用環境友善材料等綠色產品創新。同時，對於升級現有流程生產設備以降低生產過程資源與能源消耗等綠色流程創新有正向顯著影響。然而，消極型策略察覺的影響則較不顯著。例如，有害物質禁令和違規與否無法促進綠色技術創新，且消極型策略察覺對於綠色產品創新涉入程度不大；在違規行為的懲罰則對於升級現有生產設備或流程以及採用回收科技等部分流程創新有較明顯的正向影響。整體而言，本研究發現積極型策略察覺有助企業投入綠色技術創新，消極型策略察覺則是效果較不明顯。最後，本研究的發現對於相關理論與管理實踐提供了重要意涵。

The era of solely focusing on economic value has passed. Firms must integrate social and environmental values into their strategic awareness and actions to respond to external pressures. Successfully addressing these pressures benefits society; firms can attract more investment and consumer interest and avoid legal penalties and reputational damage. Consequently, understanding the influence of strategic awareness on a firm's sustainability efforts is a critical issue. This study employs 207 Taiwanese listed manufacturing firms as the

sample firms and collects data from public information, annual reports, and TW patent applications from 2005 to 2020. This study employs regression analysis on a panel dataset to investigate the impact of strategic awareness on firms' green technological innovation. The results indicate that proactive strategic awareness positively affects green product and process innovation. This includes emphasizing a circular economy, enhancing carbon disclosure, establishing environmental management systems that reduce toxic material use, improving product recyclability, and adopting eco-friendly materials. This mechanism also positively affects the upgrading of production equipment to reduce the resource and energy consumption. Conversely, reactive strategic awareness has a less significant effect. Implementing harmful substance bans and compliance do not significantly promote green technological innovation. However, penalties for non-compliance positively impact green process innovation. Overall, this study concludes that proactive strategic awareness encourages actions in green technological innovation, whereas reactive strategic awareness is less effective, providing valuable insights into related theories and managerial implications.