

Impact of the Proactive Environmental Strategy and Environmental Collaboration on Sustainability Performance in Chinese Manufacturing Industry: A Conceptual Framework

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Abstract

As global environmental issues intensify, enterprises face increasing pressure to pursue sustainable development. China's manufacturing industry plays a critical role by significantly contributing to GDP, job creation, and export volumes globally. However, its rapid expansion, fueled by intensive resource consumption, has caused environmental degradation and increasing emissions. Consequently, China risks lagging behind other industrialized nations unless strides are made toward sustainable development. This study, grounded in the context of China's manufacturing industry, develops a conceptual framework to examine the influence of Proactive Environmental Strategy (PES) and Environmental Collaboration (EC) on sustainability performance. PES refers to proactive environmental initiatives undertaken by enterprises to surpass basic regulatory requirements, aiming to enhance resource efficiency and minimize environmental impacts. EC focuses on collaborative efforts between enterprises and their upstream and downstream supply chain partners to jointly advance environmental management practices. The proposed framework highlights the mediating role of environmental collaboration in proactive environmental strategies to enhance corporate sustainable performance. It specifically addresses how to achieve three dimensions of sustainability performance, including environmental, economic and social aspects. This study will use quantitative methods with data collection through surveys distributed to manufacturing companies in Shaanxi province of China. Structural equation modeling will be employed to find out the relationship between variables. The contribution of this study lies in offering theoretical foundations and practical guidance for China's manufacturing sector in adopting sustainable strategies. By identifying critical driving factors and mediating variables, it provides enterprises with pathways to achieve green transformation in complex environments. Furthermore, this framework offers a solid basis for future research and provides policymakers with actionable insights to bridge micro-level practices with macro-level sustainability goals.

Keywords

Proactive environmental strategy, Environmental collaboration, Sustainability performance, Manufacturing industry

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Biographies

Wang Xiao is a PhD candidate at the Faculty of Management, Universiti Teknologi Malaysia, and a lecturer at the School of Trade and Circulation, Shaanxi Polytechnic Institute. Her research primarily focuses on logistics and supply chain management. She obtained a master's degree in supply chain management from Southwestern University of Finance and Economics. Currently, under the supervision of associate professor Dr. Thoo Ai Chin, she is engaged in research on sustainable supply chain. She has presented her research findings at two prominent international academic conferences, showcasing her work in this field. She aims to address practical challenges in sustainable supply chains and contribute meaningfully to advancing sustainable development.

Thoo Ai Chin, an esteemed associate professor and sustainability management research group leader at the Faculty of Management, Universiti Teknologi Malaysia, is recognized for her expertise in supply chain management, consumer behavior, logistics, and sustainability. Since 2004, she has cultivated a prominent academic and professional career. She completed her PhD in Supply Chain Management at Universiti Teknologi Malaysia, where she has been influential in both teaching and research. She has earned several awards for her service, teaching, and community efforts, including multiple Excellence Service Awards and International Medals for her contributions to academia. Her extensive research includes significant grants and publications in high-impact journals, underscoring her commitment to advancing knowledge and practice in her field.

Lee Van is a PhD student at the Faculty of Management, Universiti Teknologi Malaysia (UTM). She was born in Batu Pahat, Johor, Malaysia. In 2020, she earned a Bachelor's Degree in Technology Management (Production and Operations) with First Class Honours from Universiti Tun Hussein Onn Malaysia (UTHM). Subsequently, she pursued a Master's Degree in Science (Technology Management), also at UTHM. During her postgraduate studies, she worked as a research assistant on a project titled "Determinants of Junior Lecturers' Technology Commercialization Intention," supported by UTHM under the Post-Graduate Research Grant Scheme (GPPS), Vot H720. In addition, she attended several workshops on statistical software, including the Statistical Package for Social Sciences (SPSS) and SmartPLS, to enhance her data analysis skills for research purposes. In 2024, she was awarded the Best Paper Award at the International Conference on Entrepreneurship, Technology, and Social Sciences. Currently, she works as a Nexus Young Researcher (NYR) on a project titled "Formulation of a Structural Model for Electronic Waste Reverse Logistics Implementation," funded by the Research Management Center, UTM, under Vot Q.J130000.3829.23H26. Finally, she has first-authored three research papers in the fields of social science, technology management, and supply chain management. Her broad research interests lie in science and technology, with a particular focus on green technology in supply chains, which she aims to explore further over the next five years.

Huam Hon Tat is a professor in the Faculty of Business of City University of Macau. He obtained a PhD in Service Marketing, a Master of Business Administration (MBA), and a Bachelor of Applied Science from Universiti Sains Malaysia. He has over 18 years of hands-on experience as a business practitioner. Throughout his career across different industries, he has gained an extensive background in business planning and operations, strategic marketing, and sales management. Professor Dr. Huam teaches marketing research, service marketing, sales management, entrepreneurship, business research methods, and marketing management. His research interests include marketing, entrepreneurship, customer relationship management, sales management, and consumer behaviour. He has published several articles in national and international journals as well as presented papers at national and international conferences.