Editorial: Exploring the role of internationalisation in technology management and green innovation

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1 Introduction

Over the past several decades, we have witnessed the rapid development of emerging economies such as the 'BRICS', including Brazil, Russia, India, China and South Africa. These countries actively promote the internationalisation process, and have become the most important contributors to world economic development. Simultaneously, the emerging economies have made astonishing achievements in innovation and technology in a wide variety of areas, including information technologies, international applications and high-speed railways. What accompanies these achievements are growing awareness of, and call for, the concerns about environmental pollution and sustainable development, because the wide-spreading environmental challenges, including but not limited to fossil energy consumption, waste gas and water emissions, are more significant in emerging economies, especially in China, India and even South Korea (Liu et al., 2021; Zheng et al., 2021). Although there are several successful innovative solutions to environmental problems (e.g., the mitigation of desertification in China), the overall environmental situation remains severe (Bryan et al., 2018).

Under these circumstances, it follows a recent trend by scholars in international business and environmental fields increasingly using emerging economies to explore the link between environmental management, international business and institutional environment (Bu and Wagner, 2016; Dean et al., 2005; Marquis et al., 2011). One classic evidence can be seen in the conflicting views on the environmental impact of foreign direct investments (FDIs) in emerging economies – the 'pollution halo' view and the 'pollution heaven' view (Eskeland and Harrison, 2003; Wheeler, 2001; Yang et al., 2019). According to the pollution halo hypothesis, multinationals engaging in FDI will tend to spread its greener innovation and technology in the host country, while the pollution heaven hypothesis suggests that FDI is a carrier for multinationals to transfer polluting manufacturing to emerging economies to circumvent costly environmental regulations in the home country. Furthermore, in contrast to the direction of FDI, several literature has documented that the outward foreign direct investment (OFDI) from emerging economies to developed countries brings positive impacts on green innovation of parent firms (Hao et al., 2020; Zhou et al., 2019). For instance in China, a variety of 'go global' policies have been proposed to encourage many Chinese firms to acquire strategic resources and gain greater access to foreign markets (e.g., the 'Belt and Road Initiative' policy) (Liu et al., 2020; Luo and Tung, 2018). A reverse technology spillover effect brought by OFDI can improve the green technology and innovation in domestic parts, and the knowledge-based view can be explained in the process of the knowledge transfer from the overseas subsidiaries to the parent firms in emerging economies (Ferraris et al., 2017).

However, there are still considerable theoretical gaps and methodological limitations which undermine our understanding of the relationship between green innovation and international business especially in the context of emerging economies. For example, what mechanisms and processes of emerging economies' firms used for acquiring, transmitting and utilising the environmental knowledge to promote green innovation? What mechanisms and processes are employed by the FDI from developed countries to influence the green innovation of firms in emerging economies? What and how domestic and foreign formal (e.g., government green subsidy or intervention) and informal (e.g., social media or religion) institutions enhance or constrain green innovation? What types of internationalisation of multinational firms (e.g., speed, breath or depth) influence green

innovation? The purpose of this special issue is to seek potential contributions that discover new insights on understanding and exploring the green innovation of firms in emerging economies from 'bring in' and 'go global' trends of international business research, as well as submissions that build upon multi-disciplinary perspectives, such as economics, finance, public policy and operational management.

2 The structure of the special issue

Twelve articles have been included in this special issue. To begin, in 'Exploring the influence of resource management between green innovation strategy and sustainable competitive advantage: the differences between emerging and traditional industries', Yang Gao et al. considered how corporate green innovation strategy affects sustainable competitive advantage. From the perspective of resource management, they argued that the effect of green innovation strategy may change with dynamic levels of industries. With a sample of 210 firms in traditional industries and 219 firms in emerging industries, they revealed the important role of the two core ways, including resource integration and reconfiguration, in resource management. Accordingly, this study provides a useful reference for firms to practice green behaviour.

Min Yang and Jingxian Wang also investigated the corporate green innovation strategy in 'Pricing and green innovation decision of green supply chain enterprises'. Specifically, they focused on the supply chain firms, which can adopt green innovation activities to reduce the adverse impact of production process on the environment, so as to enhance the core competitiveness. Using the game theory method from the perspectives of competitive environment, risk aversion and chain innovation, this study aims to analyse the equilibrium results of product price and greenness under three different decision-making modes of retailers, manufacturers and centralised decision makers.

Unlike what factors can influence a firm's strategic decision on green innovation, Wenqing Wu et al. focused on innovation efficiency in green management in 'An empirical study between OHSAS 18001 certification and innovation efficiency in green management: the moderating role of pay disparity and ownership'. By analysing data from 1,905 Chinese listed firms using stochastic frontier analysis, the authors found Occupational Health and Safety Assessment Series 18001 (OHSAS 18001) certification stimulates firm innovation efficiency, and the such effect is also dependent on the level of pay disparity between executive and non-executive employees and corporate ownership structure. These findings seek to assist senior managers in understanding the ideal structural environment to maximise the innovation potential of the certification system.

In addition, in 'A comparative study of service trade competitiveness for green innovation development using the WWYZ model – based on China and the 26 countries along 'the Belt and Road'', Ling Yang et al. emphasised the importance of service trade competitiveness for green innovation development. They argued that service trade competitiveness is crucial for a country to maintain green innovation economic growth. By conducting a comparative study on service trade competitiveness between China and the 26 countries along the 'Belt and Road', they found the evidence that China's service industry is slowly participating more in the upstream production activities of the global value chain for green innovation development. Accordingly, this study suggests China to strengthen industrial complementation with other countries along the 'Belt and Road'

through capacity cooperation to achieve mutual benefits from green innovation development.

Apart from green innovation as the corporate outcomes, many authors also consider what advantages green management and innovation can bring to firms. In 'Environmental regulation, subsidy and underperforming firms' R&D expenditure: evidence from Chinese listed companies', Xiaoling Chen and Qiang Li investigated the impact of environmental regulatory on corporate R&D investment. Drawing on behavioural theory and agency theory, they argued that the level of government environmental regulation and subsidy have positive effect on the relationship between performance feedback and R&D expenditure through intensifying perceived knowledge deficiency and alleviating shareholder pressure. They also found empirical support by using the sample of 711 firm-year observations of Chinese listed firms in 16 environmentally disruptive sectors, which contributes to behavioural theory and R&D literature on corporate R&D decisions in response to environmental regulatory.

Similarly, Xiaohui Wei and Yingji Li considered how green economic growth affects corporate foreign investment behaviour in 'The effect of green economic growth on the foreign investment behaviour of heterogeneous enterprises'. They established the evaluation index system and experimental model of the impact of foreign investment behaviour of heterogeneous firms on green economic growth, and the results suggest that the foreign investment behaviour of heterogeneous enterprises can affect the local green economic growth, and form certain regularity, but this influence also has two-way nature.

In 'Social intrapreneurship: the foundation of CSR practices', Nadia Tavakoli and Marco De Sisto admitted that the literature on social intrapreneurship is still limited and weakly integrated. Regardless of the growing imperative for firms operating in the Asia-Pacific region to become more socially and environmentally responsible, studies have rarely addressed this part of the world from the cultural perspective. Through several in-depth semi-structured interviews, this study reveals organisational climate and individual background as important antecedents for social intrapreneurship, and informs both researchers and practitioners on how to manage social intrapreneurship, and consequently, benefit corporate social responsibility practices.

Several studies focus on innovation directly. As mixed ownership reform is an important innovation of China's state-owned enterprise property rights system, Lei Ruan and Heng Liu aimed to comprehensively evaluate the policy effects of the such innovation in 'The impact of institutional innovation on internal control: evidence from Chinese state-owned enterprises'. Using an analysis of the PSM-DID model, this study finds that heterogeneous property rights have played an active role in repairing the 'owner absence' and 'internal control' of state-owned firms, and the internal control system of state-owned firms has been substantially improved.

Ye Zheng et al. also investigated the role of innovation. In 'Does government behaviour or enterprise investment improve regional innovation performance? – evidence from China', they admitted that whether government behaviour or enterprise investment promotes regional innovation performance more effectively remains unclear. Through examining the influences of the determination of high and new technology firms, corporate R&D investment, and institutional environment, the results indicate that the corporate R&D investment has a more positive significant effect on regional innovation performance than the determination.

Furthermore, some studies have made some boundary contributions to this special issue. For example, in 'An empirical study on Chinese enterprise effectuation, market ambidexterity and entrepreneurial performance', Di Zhou and Chenglin Liao used market ambidexterity of new ventures as a mediator variable to determine the correlation between effectuation and entrepreneurial performance in the market domain, and the whole study offers several managerial implications for new ventures to apply effectuation to attain market ambidexterity and enhance entrepreneurial performance. In 'Constructing a green financial innovation system with the PPP environmental protection industry fund', Yi Sun et al. built a green financial innovation system based on the PPP environmental protection industry fund, and used the system to conduct an experimental simulation, finding that the carbon dioxide emissions will be reduced by 30% after the completion of the project. Finally, in 'Cultural industries in emerging economies under the background of economic globalisation and information networks', Yunkai Xu and Dongxin Li used a variety of survey methods to investigate and analyse the proportion and economic benefits of China's emerging cultural industries in the past five years in the cultural industry, fully proving the role of economic globalisation and information network in promoting the cultural industries in emerging economies.

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