２０２３年度　公立大学法人北九州市立大学特別研究推進費　実績報告書

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　公立大学法人北九州市立大学特別研究推進費に係る研究実績について、次の通り報告します。

研究課題名	Sources of Green Innovation among Developing Economies 発展途上国におけるグリーンイノベーションの源泉				
	合計	使用内訳（単位：円）			
交付決定額	685,600	備品費	消耗品費	報酬	その他	旅費交通費
執行額	650,895	0	268,378	333,500	49,017	0
執行残額	34,705					
共同研究者	所属・職名		氏名		役割分担等	
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研究分野：革新経済学、環境経済学

キーワード：グリーンイノベーション、 経路依存性、発展経路

研究成果の概要（和文）

本研究の主な目的は、発展途上国におけるグリーンイノベーションの源泉を解明することである。特に本研究は発展途上国における過去のグリーン輸出や技術構造が、グリーンイノベーションの創出にどの程度貢献するのか、また先進国の事例との相違点を研究する。本研究の分析結果は、２０２４年６月の R&D Management 2024 学会発表に受理された（査読付き）。また、この研究のデータと問題意識を活用して、派生した研究は国際論文に２０２４年１月掲載された[1]。本研究の学問的成果は、グリーンイノベーションの源泉としてのグリーン輸出生産の役割や発展途上国の実証結果を提供することにより、これらのリサーチギャップを埋めることに貢献することである。本研究は、雇用機会と経済成長（SDG8）および産業とイノベーション（SDG 9）と密接に関連している。

研究成果の学術的意義や社会的意義

This study is closely linked with job opportunities and economic growth (SDG 8) and industry and innovation (SDG 9). Promotion of green, sustainable innovation along with economic/industrial growth through green innovation are key interests of developing economies. This study suggests an effective way to set target industries for sustainable innovation among developing countries, by studying the past and present production and knowledge structures.

1. 研究の背景

Most studies on green innovation are focused on the cases of developed countries. Among the few studies on developing countries, only a limited number highlights the importance of production in innovation. This study fills the research gap by 1) bringing green export production as a potential source of green innovation, and 2) the providing an empirical evidence from developing countries.

2. 研究の目的

The main purpose of this study is to elucidate the sources of green innovation among the developing economies. Specifically, this study studies whether and to what extent the past green export and knowledge structures contribute to spurring green innovation among developing countries, and how they differ from the patterns of developed countries.

3. 研究の方法

In order to answer these questions, this study constructs a panel dataset of export production and patent grants covering around 80 countries (including both developing and developed countries) from 1980 to 2020. This dataset contains the export data from the United Nations Conference on Trade and Development (UNCTAD), patent data from United States Patent and Trademark Office (USPTO), and Algorithmic Links with Probabilities (ALP) to link the two datasets. It uses econometric methods to test the causal relationship between the current production/knowledge with two types of future green innovation, and network analysis to illustrate the green export and knowledge structures of selected developing countries.

4. 研究成果

The results confirm the two hypotheses suggested in this study. First, emergence of new green export product in developing countries is less likely to depend on their past green knowledge structures. Second, emergence of new green technology in developing countries is likely to depend on their past green export production structures. These results suggest that developing economies should focus on innovation in the green sectors that they currently have comparative advantage in production. Also, the results imply that there is an alternative path-dependence of innovation, from production to innovation.

This study is expected to be presented in international conferences in 2024 (accepted to R&D Management 2024, Stockholm, June 2024), and received comments from two reviewers.

Also, applying the dataset collected and measures to test the path-dependence among nations in this study, an additional study [1] on path-dependent capability evolution among European countries has been completed. This has been published in *Baltic Journal of Economics* in 2024.

[1] Walter, S., Eum, W. & Lee, J. D. (2024). The European Skill Space: A Cross-Country Analysis of the Path-Dependent Evolution of Capability. *Baltic Journal of Economics*, *24*(1), 1-28.