

学位論文の要旨 (論文の内容の要旨)  
Summary of the Dissertation (Summary of Dissertation Contents)

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学 位 論 文

Dissertation

論 文 題 目

Dissertation Title

Essays on CO2 Emissions and Renewable Energy Development in Developing Countries

This research studies renewable energy development and the recent increase of CO2 emissions in developing countries. There are three main findings from three distinct studies examining the intersection of renewable energy sources and environmental sustainability within the framework of the Sustainable Development Goals (SDGs).

Study 1 delves into the differential impacts of traditional and modern renewable energy sources on CO2 emissions in emerging economies, utilizing an autoregressive distributive lag (ARDL) model across 31 countries from 1990 to 2016. The findings underscore a negative long-run correlation between CO2 emissions and both energy types, with a pronounced sensitivity to modern renewables. This suggests that modern renewable energy is a more efficacious target for environmental policies in these nations, highlighting the imperative for international support in green technology transfer.

Study 2 shifts the focus to Southeast Asia, where the burgeoning hydropower sector along the Mekong River is scrutinized for its environmental and public implications. Employing a vignette experiment to circumvent conventional survey biases, the study evaluates Cambodian residents' attitudes influenced by varied informational framings—environmental impact, funding origins, and international aid. The results reveal a predominant sway of negative environmental framing on public opinion and a discernible distrust towards Chinese international assistance, signaling a call for policymakers to enhance public engagement and trust through transparent and sustainable practices in hydropower development.

Lastly, Study 3 explores the global ascent of solar home systems as a sustainable electricity alternative, assessing household attitudes through vignette experiments that manipulate framing around cost, accessibility, and environmental benefits. The study finds that eco-friendly framing garners positive responses, whereas emphasis on high costs elicits adverse perceptions. It advocates for strategic communication that balances environmental merits with economic considerations, tailored specifically to influential demographics such as women heads of households, to foster informed and favorable engagement with solar energy solutions.

Collectively, these studies illuminate the nuanced relationships between renewable energy adoption and public perception, emphasizing the need for nuanced policy approaches that consider both technological efficacy and socio-environmental communication strategies to advance global environmental sustainability.

備考 論文の要旨はA4判用紙を使用し、4,000字以内とする。ただし、英文の場合は1,500語以内とする。

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