

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

論 文 題 目

Dissertation title

Determinants of Health among Women and Children in Nepal: Three Pillars of Sustainable Development Perspectives

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博士課程後期 開 発 科 学 専 攻  
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Health conditions at the early stage of life are an essential precursor to sustainable development. Children who are healthy during their early years have a higher quality of life, acquire the potential to contribute to their community, and ultimately contribute to long-term economic development. However, children's health is a product of interactions between social, economic and environmental circumstances. Thus, the PhD dissertation aims to explore and understand the social determinants of health from the three pillars of sustainable development perspectives. In this process, the study examines the impacts of economic and environmental factors on maternal and child health, considering trade stagnation due to the 2015 Nepal-India border blockade as an example of economic conditions, air quality changes due to the blockade as an example of environmental conditions, and cultural beliefs about the auspiciousness of full moon births as an example of social conditions.

The PhD dissertation follows three distinct but related quantitative studies, organised into three analytical chapters, using secondary data from a nationally representative population and health survey and the hospital-based longitudinal birth records, supplemented with administrative and geospatial data. The analytical approach is based on a potential outcome framework in which the observed health outcomes are contrasted with the counterfactual outcomes to estimate the health impacts. The analysis mainly uses Regression Discontinuity Design (RDD) to estimate the causal health impacts based on a score and a cutoff.

The first analytical chapter assessed the effects of the 2015 Nepal-India border blockade on child mortality. Using the 2016 Nepal Demographic and Health Survey (NDHS) province panel data, the study shows a significant increase in infant mortality during the blockade months. It suggests increased death probabilities for children within a month of their life after adjusting mother and household characteristics in the individual-level analysis. The result is unconfounded by the pre-existing mortality trend and robust to nonparametric regression discontinuity estimation. Furthermore, the mortality effects are intense among high-risk mothers exposed to blockade during their first trimester. These findings have significant emotional and economic implications for the family and society.

Based on the observation that the border blockade temporarily changed the air quality in Nepal, the PhD dissertation examines the effects of outdoor air pollution on birth weight. The study revealed that children born within the last two months of the blockade had lower birthweight than those born after the blockade. However, the adverse effect disappears with statistically insignificant results when comparing the birthweight to those born in the same months in the

adjacent years, adjusting for births in adjacent months. These findings suggest the need for further research with more reliable air quality data to examine the effects of air pollution on children. Furthermore, the study raised intriguing questions regarding the extent to which political instability and the consequent trade stagnation might have contributed to climate change vulnerability in Nepal.

The third analytical utilises the cultural beliefs about the auspiciousness of full moon days in Nepal to investigate the effect of a social factor on birth timing and child health. The study shows significantly higher birth rates on full moon days compared to days after the full moon, with caesarean delivery driving the excess births on full moon days. It also demonstrates that births occurring on or before the full moon day have poor neonatal health outcomes, especially among high-risk mothers. The study findings raised essential concerns about using medical resources and the consequent health outcomes, in response to non-medical reasons, like cultural beliefs, from the sustainable development perspective.

The PhD dissertation illustrates that the three-pillars framework is an integrated and supplementary approach to understanding non-medical causes of health and wellbeing. According to the framework, health and wellbeing depend on the balance of economic, environmental and social aspects of sustainable development, whereas discrepancy in either component contributes to poor child health outcomes. In other words, the economic, environmental and social components represent independent but intertwining health domains through which maternal and child health is created or constrained. Their interaction must be regulated to achieve Sustainable Development Goals (SDGs). Therefore, the dissertation emphasises continued investment and a favourable policy environment to encourage young children's health and human capital development. It also urges the academic community to elucidate operational ambiguity associated with the three-pillar paradigm and the social determinants of health concepts due to the emerging flexibility in interpreting these theoretical models.

備考 論文の要旨はA 4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。

Remark: The summary of the dissertation should be written on A4-size pages and should not exceed 4,000 Japanese characters. When written in English, it should not exceed 1,500 words.