

博士論文審査結果報告
Report on Ph.D. / Doctoral Dissertation Defense
National Graduate Institute for Policy Studies (GRIPS)
Professor ESTUDILLO, Jonna P.

審査委員会を代表し、以下のとおり審査結果を報告します。

On behalf of the Doctoral Thesis Review Committee, I would like to report the result of the Doctoral Dissertation Defense as follows.

学位申請者氏名 Ph.D. Candidate	Asami Takeda		
学籍番号 ID Number	PHD16601		
プログラム名 Program	GRIPS Global Governance Program (G-cube)		
審査委員会 Doctoral Thesis Review Committee	主査 Main referee	ESTUDILLO, Jonna P.	主指導教員 Main Advisor
	審査委員 Referee	WIE, Dainn	副指導教員 Sub Advisor
	審査委員 Referee	高橋 和志 TAKAHASHI, Kazushi	副指導教員 Sub Advisor
	審査委員 Referee	飯尾 潤 IIO, Jun	博士課程委員会委員長代理 Acting Chairperson of the Doctoral Programs Committee
	審査委員 Referee	真野 裕吉 (一橋大学 経済学研究科) MANO, Yukichi (Hitotsubashi university)	外部審査委員 External Referee
論文タイトル Dissertation Title (タイトル和訳)※ Title in Japanese	"The Impacts of Access to Electricity on Employment, Household Income Growth and Child Labor in Cambodia" カンボジアにおける電化が雇用、家計所得、及び児童労働に与える影響について		
学位名 Degree Title	博士 (政策研究) / Ph.D. in Advanced Policy Studies		
論文提出日 Submission Date of the Draft Dissertation	2020年9月11日	論文審査会開催日 Date of the Doctoral Thesis Review Committee	2020年10月9日
論文発表会開催日 Date of the Defense	2020年10月9日	論文最終版提出日 Submission Date of the Final Dissertation	2020年10月28日
審査結果 Result	合格 Pass		

※ タイトルが英文の場合、文部科学省に報告するため、和訳を付してください

Please add a Japanese title that will be reported to MEXT.

1. 論文要旨 **Thesis overview and summary of the presentation.**

The main objective of the dissertation is to examine the role of electricity in improving household welfare, with a focus on household income growth and reduction of child labor—both affected by the expansion of national electricity grid. There are two analytical chapters.

The first chapter presents an analysis of the impact of household electrification on labor market outcomes of the working age population and on household income, drawing data from nationwide socio-economic household surveys for the period 2004-2017. This work contributes to the literature as it addresses concerns on the endogeneity of electricity by introducing two novel instruments, (1) population density at village level and (2) distance between center of village and nearest electricity substation point. There are several main findings: (1) electricity has a strong and positive effect on wage employment and self-employment in non-farm sector, (2) electricity decreases self-employment in farm sector and unpaid family work and (3) electricity contributes to total household income growth through growth of household nonfarm income. Thus, it is essential to expand access to national electricity grid especially in rural areas.

The second analytical chapter examines the impact of access to electricity on school attendance and children's years of schooling, through three possible channels: (1) household income; (2) female spouse employment; and (3) incidence of child labor. The results are the following: (1) access to electricity increases total household income, especially through increased non-farm income, (2) there is no statistical evidence that access to electricity increases female spouse labor force participation, which suggests that child labor is not necessarily reallocated to domestic tasks left behind by the female spouse and (3) results show that electrification leads to a significant decrease in the probability that a child is engaged in economic activity. As for educational attainment, there is hardly any statistically significant impact of electricity. Rather, parents' education level has a positive impact on children's attendance in the school system and years of educational attainment. These findings suggest a need for the development of the rural non-farm sector so as to increase household income, which in turn increases demand for education, and eventually leads to a decrease in the frequency of child labor.

2. 審査報告 Notes from the Doctoral Thesis Review Committee (including changes required to the thesis by the referees)

Members of the committee agreed that the presentation was excellent and the candidate answered all questions brilliantly. The referees made many good suggestions and here I report the major ones in each of the two analytical chapters.

Chapter 2: (1) There is a need to strengthen the validity of the two instruments (i.e., population density and distance to the sub-station). The Hansen J-statistics is no longer popular recently so a more intuitive explanation about the exclusion restriction is necessary especially for population density (Profs. Takahashi, Wie, Mano). (2) It is necessary to address the deletion of households with zero income in the regression run because of the log specification (i.e., many urban households were deleted in agricultural income regression) (Prof. Takahashi). (3) Notation in the statistical model is misleading because the same notation is used in both the first stage and second stage of the two-equation model (Profs. Wie, Takahashi). (4) Try clustering the error terms at two levels both at the village and district level (Prof. Wie). (5) Provide a clear explanation why household income is endogeneously related to electricity (Prof. Iio). (6) Carefully explain why the datasets are considered as nationally represented and check if the statistical results are robust by using weights (Prof. Wie).

Chapter 3: (1) There are duplications of descriptive analysis and income functions in Ch.2 and 3 (Prof. Iio). (2) Rewrite the hypotheses put forth in Ch.3 to blend it well with the existing literature and conceptual framework (Profs. Takahashi, Wie). (3) In addition to electricity, there is a need to highlight other demand factors that affect child schooling (Prof. Iio).

3. 最終提出論文確認結果 Confirmation by the Main Referee that changes have been done to the satisfaction of the referees

Since the median score of 5 was achieved after the defense, the final check was left entirely to the main adviser. Two weeks after the defense, the candidate submitted the revised version to the main adviser who examined it carefully and found it satisfactory. The main adviser also checked the result of the plagiarism check by Turnitin and told the candidate to add a few minor revisions. Afterwards, the candidate circulated the final draft of the manuscript along with the answers to the referees' comments to all committee members. The candidate submitted the

final version to GRIPS on October 28, 2020.

最終審査結果 Final recommendation

The doctoral thesis review committee recommends that GRIPS award the degree of Ph.D. in Advanced Policy Studies to Ms. Asami Takeda.