

博士論文審査結果報告
Report on Ph.D. / Doctoral Dissertation Defense

National Graduate Institute for Policy Studies (GRIPS)

政策研究大学院大学

Associate Professor HSU Minchung

准教授 HSU Minchung

審査委員会を代表し、以下のとおり博士論文審査に合格したことを報告します。

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

プログラム名 Program	政策分析プログラム Policy Analysis Program	
学位申請者氏名 (ID) Ph.D. Candidate (ID)	Tilahun Etsubdink Sileshi (PHD17103)	
Dissertation Title 論文タイトル (タイトル和訳)	Essays on Education, Gender Equality, Fertility and Child Labor 教育、男女平等、出生力及び児童労働に関する研究	
学位名 Degree Title	博士 (国際経済学) Ph.D. in International Economics	
論文提出日/ Submission Date of the Draft Dissertation	2022年6月24日/ June 24, 2022	
論文発表・審査会開催日/ Date of the Defense and the Doctoral Dissertation Review Committee	2022年7月22日/ July 22, 2022	
論文最終版提出日/ Submission Date of the Final Dissertation	2022年8月24日/ August 24, 2022	
審査委員会/ Doctoral Dissertation Review Committee	主査 Main referee	HSU Minchung
	審査委員 Referee	藤本 淳一 FUJIMOTO Junichi
	審査委員 Referee	PORAPAKKARM Ponpoje
	審査委員 Referee	胡 云芳 神戸大学 HU Yunfang Kobe University
	審査委員 (博士課程委員会) Referee (Doctoral Programs Committee)	大野 健一 OHNO Kenichi

※ 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. Summary of Defense and Evaluation

The defense of Etsub's dissertation was held on July 22, 2022 at 10:30. Etsub presented the main findings of his research for about an hour, including an empirical investigation on the relationship between total fertility rate (TFR) and gender equality in education, development of a theoretical model that can address the empirical patterns of TFR and gender equality in education and a policy analysis on child labor regulation based on an extended model. After the presentation, a 30 minutes Q&A session was held. All the committee members gave useful comments and suggestions regarding the literature, contribution of the study, technical issues of the models. Etsub tried his best to respond and committed a revision of his dissertation to accommodate those comments. From 12:00, the committee started a discussion to evaluate the defense. All committee members thought Etsub did a good job although there was still some room for improvement. At the end, Etsub got a median score 5, and the committee members agreed to let the main adviser to check the revision of Etsub's dissertation without another review by the whole committee.

After the defense, Etsub spent about a month to revise the dissertation and prepared a note summarizing the changes in response to the comments received from the committee at the defense. The final version was submitted on Aug. 23rd.

2. Dissertation overview and summary of the presentation.

Etsub's dissertation consists of three main research projects. The first is an empirical investigation on the relationship between total fertility rate (TFR) and gender equality in education. The literature mainly studies the relation between TFR and general education level with a consideration of the mechanism, "quantity-quality tradeoff." This is a first attempt in the literature to document a negative relationship between TFR and gender equality in education. The second is a development of a theoretical model that can address the empirical patterns of TFR and gender equality in education. He undertakes an over-lapping-generations model framework with the quantity-quality-tradeoff mechanism and discuss how the model can generate the negative relationship TFR and gender equality. The third study is on child labor regulation and gender gap in education based on an extended model with considering the social norm of gender role that leads to household labor division.

Chapter 3 describes the first study. A cross-country comparison shows that countries with lower gender equality in education (measured by female to male mean years of schooling ratios) tend to have higher total fertility rates. The literature has discussed the quantity-quality tradeoff mechanism, parents invest more in children's education while reducing the number of children. This study attempts to document a negative relationship between number of children and gender equality in education that has not been discovered in the literature. A further econometric model is used to verify the robustness of the negative relationship with controlling for other factors including income level, overall average level of education and country fixed effects. The regression results confirm a robust negative association between fertility and gender equality in education.

Chapter 4 describes the second study – which employs an altruistic overlapping-generations model with parental gender preference bias in education and gender differential in the rate of

returns to education. In this model, child education and fertility are endogenous and the parents care about both the quantity and quality of their children.

A quantitative experiment based on the model (with using Benin and Pakistan as examples) shows that a reduction in the preference bias of parents or an increase in girls' returns to education reduces fertility and improves the gender equality in education that is consistent to the empirical pattern.

Chapter 5 describes the third study – which theoretically investigates the potential consequences of child labor bans on the education of girls and boys with considering social norms of gender role household labor division between market work and housework. The model is an extension from Doepke (2004, Journal of Economic Growth) by adding two new features: gender heterogeneity and home production (housework), which is mainly done by female members of the household. Since child labor bans are not applied to housework, there arises potentially unequal impacts of such policy on boys and girls. The model is consistent with Doepke (2004) that in general child labor regulation increases children's education and reduces fertility. However, this study shows that there are possible cases, in which the gender gap in education becomes wider when a child labor restriction policy is implemented.

During the defense, Etsub started with an overview of the dissertation and then presented all the three studies with the main findings. He was able to control the time for each topic and managed the presentation well within the time limit.

3. Evaluation Notes from the Doctoral Dissertation Review Committee (including changes required to the dissertation by the referees)

All committee members thought Etsub did a good job at the defense although there was still some room for improvement. At the end, Etsub got a median score 5, and the committee members agreed to let the main adviser to check the revision of Etsub's dissertation without another review by the whole committee.

Main comments are as follows:

- 1) Regarding Chapter 3 (the first study), there were questions on the regression models and the interpretation of the non-linear regression. The statement of its contribution was also not clear.
- 2) Regarding Chapter 4, there were comments, including that some model settings were not clearly explained, and the counter-factual experiments could be redesigned to have more precisely implications.
- 3) Regarding Chapter 5, the main comments were on the definition of home production and the insufficient discussion about the mechanism leading to a larger gap between male and female education levels.

Etsub revised the dissertation according to the comments and prepared a note describing the changes. The summary is as follows:

- 1) In Chapter 3 (the first analytical chapter), two main changes have been done: First, the contribution of the empirical investigation has been restated more precisely. Second, the estimation has been modified according to the committee's suggestion: A liner regression is used for the main result and a log-linear model is also performed for a robustness check.
- 2) The changes in Chapter 4 include a more precise explanation on parental gender preference bias and gender gap in education in the model, an alternative formulation of the wage

functions for reference, a better explanation on the selection of the two economies (Benin and Pakistan) for quantitative exercises, and a more precise counter-factual exercise for clear policy implications.

3) Two main improvements have been done in Chapter 5. A clear definition of home production and market work has been provided and the key parameters that may lead to a larger gender gap in education have been clearly discussed.

4. Confirmation by the Main Referee that changes have been done to the satisfaction of the referees and final recommendations

Etsub got a median score 5 at the defense, and so the main adviser took the responsibility of checking the revision. About three weeks after the defense, Etsub submitted the revised manuscript to the main adviser along with a note that described changes in response to the comments and questions at the defense. There were some further comments made by the main adviser and asked Etsub for a further revision. In about a week, Etsub finished the second-round revision and submitted the further revised manuscript to the main adviser. The main adviser checked the new version and was generally satisfied with a few minor points for correction. On August 23rd, 2022, the final version was submitted, and the main adviser found it satisfactory.

The doctoral dissertation review committee recommends awarding the degree of Ph.D. in International Economics to Mr. Tilahun Etsubdink Sileshi.