

**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 Roberto Leon-Gonzalez**

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	Le Duc Dung		
学籍番号 ID Number	DOC17101		
プログラム名 Program	Public Policy Program		
審査委員会 Doctoral Thesis Review Committee	主査 Main referee	LEON-GONZALEZ Roberto	主指導教員 Main Advisor
	審査委員 Referee	山内 慎子 YAMAUCHI Chikako	副指導教員 Sub Advisor
	審査委員 Referee	ESTUDILLO Jonna	副指導教員 Sub Advisor
	審査委員 Referee	原 洋之介 HARA Yonosuke	博士課程委員会委員長代理 Acting Chairperson of the Doctoral Programs Committee
	審査委員 Referee	井深 陽子 IBUKA Yoko 慶應義塾大学	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	Essays on Health Inequality and Healthcare Utilization: The Case of Older People in Vietnam  ベトナムの高齢者の健康格差と医療へのアクセスに関する研究		
学位名 Degree Title	博士（公共政策分析）Ph.D. in Public Policy		
論文提出日 Submission Date of the Draft Dissertation	2020年4月22日	論文審査会開催日 Date of the Doctoral Thesis Review Committee	2020年5月20日
論文発表会開催日 Date of the Defense	2020年5月20日	論文最終版提出日 Submission Date of the Final Dissertation	2020年7月1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 thesis looks at the relationship between health and socio-economic characteristics in Vietnam, to try to understand the socio-economic origin of the health inequalities, especially among the elderly. It also builds models to forecast the demand for health services, which could potentially be used in future research to plan the supply of health services.

The thesis consists of three chapters, and two of them are already published in international journals subject to peer review (Elsevier and Cambridge University Press journals). A third chapter has been submitted for publication, and I expect that it will also be published.

Mr. Dung Le did well during his final defense, which due to the coronavirus pandemic was conducted online using the software Zoom. The examiners made several questions, and suggested avenues for revision. Mr. Dung Le is going to continue as a researcher in Japan, as a post-doc, at Keio University under the direction of Professor Ibuka, who was the external examiner.

This dissertation contributes to the growing literature on health inequality and modeling healthcare utilization in developing countries by conducting three distinct studies. The first two studies utilize the Oaxaca-Blinder and concentration index decompositions, which are preferred techniques in health inequality studies, to examine contribution of each factor to explanation of inequalities in the most common health problems encountered among older people: functional disability and non-communicable diseases (NCDs), under gender and locality of residence perspectives. The third study, utilizing currently appropriate econometric practices in modeling healthcare utilization (measured as count outcomes), contributes to empirical evidence on the best choice of econometric models that best explains variability in number of outpatient visits. The dissertation yields several findings:

□ The results of the first study show that the mean functional disability score, estimated from multiple regression analyses, is higher for older women than that for their

male counterparts. The Oaxaca-Blinder decomposition results show that the distribution of the social determinants explains about 54 per cent of gender inequality in functional disability; among the determinants, age, employment status, and educational level are the major drivers.

□ As for the second study, significant socioeconomic inequalities in self-reported NCDs favoring the rich are found, in which the degree of inequality is more pronounced in urban areas than in their rural counterparts. Household wealth and social health insurance are the main drivers contributing to increased socioeconomic inequalities in self-reported NCDs in rural and urban areas, respectively.

□ The thesis finds strong evidence in favor of hurdle negative binomial model 2 (HNB2), for both in-sample and out-of-sample selections, over other econometric models considered in the third study. The estimation results of the HNB2 show that predisposing (e.g., ethnicity), enabling (e.g., household size, region of residence, and social health insurance), need (e.g., disability and NCDs), and lifestyle factors (e.g., smoking) are significantly associated with number of outpatient visits. The predicted probabilities for each count event show the distinct trends of use of healthcare utilization among those with and without social health insurance: at low count events, women and people in younger age group use more healthcare utilization than do men and their counterparts in older age groups, but a reversed trend is observed at higher count events.

The findings of this dissertation highlight the need for policy to mitigate the social determinants (e.g., wealth, social health insurance, education, and employment) that contribute to health inequality among older people. In addition, the findings of the third study lay the groundwork for future research on the modeling of healthcare utilization in developing countries and those findings could be used to forecast on healthcare demand and making provisions for healthcare costs.

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



The examiners made several suggestions for improving the thesis. The candidate worked for about a month to incorporate all the suggestions, and provided a document of 21 pages explaining all the changes. Some of the changes required by the examiners were as follows:

### Ch.3

I wonder if one needs to consider a likely selective attrition. As noted in the text, men are more likely to die early and relatively unhealthy and socioeconomically disadvantaged ones are likely to do so. Out of 10 men and 10 women born at the same time, 7 men and 7 women may stay healthy till age 70, while three men past away and three women become disabled. In this case, I am not sure whether we conclude that women “suffer” from disability more. We could consider that men suffer from more severe form of health depreciation. Is it possible to control for this selective attrition? Can you discuss whether your results are robust against adjusting for this selective attrition?

### Ch.4

The conclusion is discussed like the list of findings. What are the key/original findings/conclusions?

Table 4.5 suggests a very low probability of reporting at least one NCD for group3 in urban areas. Is this because there are very few observations that fit group 3 definition (highest wealth quintile but not holding a health insurance? If you change the group definitions so that you can keep a reasonable size for each in the sample, would your results qualitatively change?

p.77 “the inequality to be more highly concentrated among the rich--, whereas several others indicate that the inequality is more prevalent among the poor” Do you examine within group inequality such as inequality among the poor? I thought that you are looking at the between group inequality between the poor and rich.

p.78 “the magnitude of socioeconomic related health inequality – was larger for urban areas than for rural ones. This –could be explained by –that rural older people face multiple barriers – to accessing health and health care services, including low health education and knowledge ---” This sounds like an explanation to why rural people are more likely to report a disease, not the larger inequality in the urban areas. Is it possible that the larger inequality in urban areas is related to private, high-quality medical services?

P80-81 the paragraph on health insurance sounds not directly related to your results. It discusses the positive effect of health insurance, but your analysis does not capture that, as you do cross-sectional comparison only. Earlier explanation of possible adverse selection sounds more appropriate.

Table 4.2 The estimates do not seem to differ significantly with and without the controls.  
Perhaps it is unnecessary to mention the urban-rural differences.

p55 partial correlation of z and y instead of z and x?

Ch.5

What is health subsidy?

p.107

“Health care utilization and income may have an endogenous relationship if health care is a normal good. An increase in income will result in an increase in the demand for health care”

This seems incorrect as an explanation for endogeneity issue.

p.108 “the predicted probabilities of health care utilization decreased when number of outpatient visits increased” – is this the probability of visiting health facility one more time given that one has already visited for a certain number of times?

p.109 alternative interpretation of health insurance results – those with good health chose not to hold insurance, that is why they are under-represented at count 5-10

p113 What do you think made the difference between this study and some previous studies which prefer HNB, and other previous studies which prefer LCM?

**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**

The candidate incorporated all the suggestions of the examiners. The main adviser was satisfied with the corrections and sent the revised version, and a detailed explanation of how the suggestions had been taken into account, to the other examiners, who confirmed that the revisions were satisfactory.

**4. 最終審查結果 Final recommendation**

The doctoral thesis review committee recommends that GRIPS award the degree of Ph.D. in Public Policy to Mr. Le Duc Dung.