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

INEQUALITY IN EDUCATIONAL ATTAINMENT: MEASUREMENTS AND DETERMINANTS

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The main objective of this dissertation is to analyze an inequality in educational attainment. The author hopes to shed the light on the following questions: 1) what factors determine educational attainment and its inequality? 2) How does educational attainment and its inequality affect economic outcome? 3) Are there any existences of intergenerational transmission of educational attainment and its inequality? The dissertation covers national, provincial, and individual analyses. For national analysis (chapters four and five), the author uses the data of educational attainment from Barro-Lee and Cohen- Soto. For provincial and individual analyses (chapters six and seven), the cross-sectional data from the Household Socioeconomic Survey (SES) which was conducted in 2011 by Thailand's National Statistics Office was obtained for estimations.

After the introductory discussion in Chapter one, Chapter two provides theoretical discussion. Definition of the key concept, inequality in education is identified in comparison with similar terms while its measurement is argued. In addition, theoretical approaches concerned such as the human capital approach, the intergenerational persistence in educational choices, and the wage regression are introduced. Next, more specific review on the empirical

literature is conducted, followed by introducing the research methodology and the overall conceptual framework of this dissertation.

Chapter three overviews Thai education. More specifically, education systems, major education indicators including school enrollment and educational attainment as well as educational policies and expenditures are discussed with focusing on historical transition and current status.

Chapter four analyzes the method of measuring degree of inequality in educational attainment in order to splits the whole observations into sub-groups based on given level of educational attainment for finding the degree of contribution by different sub-groups to total inequality in educational attainment. Firstly, the author discovers the empirical evidence for supporting the infeasibility of using the education Lorenz curves in the analysis. The main reason is due to the limitation of macroeconomic data on educational attainment. Secondly, the author found that the pattern of diminishment in inequality in educational attainment overtime is different between advanced countries and less developed countries. The greater equality in educational attainment of the former comes from an abatement of population with primary education and the additions of population with secondary and tertiary educations. On the contrary, in the case of the latter group, a decrease in an inequality in educational attainment is caused by the shrinkage of people with no schooling and the rise of population with primary and secondary levels of education.

Chapter five investigates a macroeconomic factors influencing inequality in educational attainment during the period of 1975 to 2005 with five-year intervals and examines the impacts of educational attainment and its inequality on labor productivity on a national level from 1950 to 2010 with five-year intervals. In a part of determinants, there are two major findings. Firstly, the author found that direct factors to schooling are not significant while indirect factors to schooling have significant impacts on inequality in educational attainment. Secondly, the

author found quadratic (U-shape) relationship between rural growth rate and inequality in educational attainment. So the higher rural growth rate brings both an increase and a decrease in inequality in educational attainment with turning point at rate -1.88.   In a part of impact on labor productivity, according to our findings, educational attainment strongly and positively affects a level of labor productivity. On the contrary, the insignificant association between inequality in educational attainment and labor productivity is found as expected. Therefore, a change in degree of inequality in educational attainment does not affect the national labor productivity.

For the provincial and individual analyses, a case study of Thailand, begin with chapter six. This chapter aims to investigate inequality in educational attainment in Thailand. The author employs Gini coefficients and Theil index to assess and decompose the unequal distribution of Thai educational attainment. At national level, an average number of years of schooling are 7.63 years, Gini coefficient is 0.349, and Theil index is 0.215. At regional level, the author found that the northern part of Thailand shows the largest inequality in educational attainment while in other parts of Thailand the levels of inequality in educational attainment are slightly lower. The biggest Gini coefficient is from Mae hong son (Northern) and the smallest is from Nonthaburi (Central). The biggest (0.521) is nearly double the smallest (0.272). When comparing gender groups, there is more equal distribution of educational attainment in the male group. If breaking inequality in educational attainment down into subgroups of gender, age group, province, and region; the between-group inequality in educational attainment is smaller than that of the within-group while among the sub groups of educational level the former is larger than the latter.

The advantage of the study in chapter six is that inequality in educational attainment is more precisely computed by using individual data in the analysis. This freed us in two constraints from the previous studies. Firstly, the author can measure years of schooling for dropouts at many levels without assuming half completion. Secondly, range of education levels

becomes wider. The author includes the graduate (master and doctoral) level of educational attainment in the analysis. Expanding the variety of education reflects real numbers of years of schooling. This prevents an underestimation of inequality in educational attainment.

Passing on to chapter seven, its objectives are to investigate the determinants of educational attainment and its inequality, particularly the intergenerational transmission of educational attainment and its inequality as well as examine private returns to education of workforce age (25 to 60 years old) in Thailand. The findings of this chapter are that, the intergenerational transmission of educational attainment is at least partly found in Thailand when the intergenerational transmission of inequality in educational attainment is also clearly found in Thailand. Father's educational attainment is almost twice as important on influencing children's educational attainment as mother's educational attainment. The author also found that interaction term between household's educational attainment and financial assets is negatively associated to children's educational attainment while individually regressors are positively related to children's educational attainment. The liquidity constraint plays the most significant role on children's educational attainment.

In addition, the author found a nonlinear relationship (inverted-U-shape) between the difference in age between parents and children at the turning point approximately 30 years due to mature age and generation gap. The negative relationship of children's age and their educational attainment is confirmed. That is because of institutional and time effects. The author found the unequal opportunity of accessing in education in the specific groups as disable-at-birth people and tribal.

Last but not least, in this chapter, the average number of years of schooling for females is larger than that for males. The author found improvement of gender parity in Thailand. The findings are that the rate of private returns to education is 12.4 percent. The impact of education on log hourly earnings for females is higher than for males under the regressor years of schooling. On the other hand, under the regressor educational dummy variables, rates of

return to higher education (undergraduate, master, and doctoral) for males are greater than for females.

Based on all those analytical results, the author answered three research questions of the dissertation as follows. Firstly, at national level, past inequality in educational attainment, educational attainment, and ratio of capital to GDP significantly determine current level of inequality in educational attainment. In a case of Thailand, parental inequality in educational attainment, educational attainment, and population density significantly influence degree of inequality in educational attainment. In addition, the author found parental educational attainment, household wealth, household incomes, and difference in age between parents and children are significantly associated with children's educational attainment.

Secondly, the results of analyses show that educational attainment plays a significant role of increase in labor productivity and individual earnings while the author could not find the significance of inequality in educational attainment on labor productivity. Last but not least, the author found existences of intergenerational transmission of educational attainment and its inequality.

Keywords: Inequality in educational attainment, Years of schooling, Gini coefficient, Theil index, Intergenerational transmission, Rate of return, Labor productivity.

JEL classification Codes: I20, I21, O15