EDUCATIONAL INEQUALITY IN VIETNAM: ASSESSING THE EFFECTS OF SOCIO-ECONOMIC BACKGROUND, GENDER AND REGION DISPARITIES ON ACADEMIC ACHIEVEMENT

By

DUONG, Linh Thuy

THESIS

Submitted to
KDI School of Public Policy and Management
in partial fulfillment of the requirements
for the degree of

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Committee in charge:

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ABSTRACT

EDUCATIONAL INEQUALITY IN VIETNAM: ASSESSING THE EFFECTS OF SOCIO-ECONOMIC BACKGROUND, GENDER AND REGION DISPARITIES ON ACADEMIC ACHIEVEMENT

By

Duong Thuy Linh

Education is the key prominent in the development of a nation. Despite the fact that Vietnam has made significant achievement in universal primary education, disadvantage groups including poor households, ethnic minorities and disable people still lag behind in their education achievement. This thesis will figure out the practice of educational inequality in Vietnam in different aspects such as gender, ethnicity and generation. Using panel data from Vietnam Household Living Standard Survey from 2010 to 2012, it provides evidence of inequality in education system based on Gini coefficient for different regions, ethnic groups and generation. Then, this thesis examines the relationship between education attainment and family background, gender, ethnicity, and region disparities. As expected, there are different levels of educational inequality among groups, especially between Kinh ethnic and other ethnic minorities. Besides, socioeconomic status was found as the most important variable that influences education attainment, followed by regional disparity.

Keywords: Education attainment, education inequality, Vietnam, Doi Moi.

ACKNOWLEDGEMENTS

I was born in a poor region in Northern Vietnam; therefore I totally understand how educational policy can touch a life of millions of children. I have a dream of contributing to the development of education system. By pointing out the gaps that still exist in education among different groups in terms of ethnicity, gender, and region. It would be one step closer to my goal. I would like to show my special gratitude to my supervisor Professor Baek Ji Sun, who always is patient to support me. I am so thankful to her for spending time to read and give me very precious and valuable instructions that can help me to complete my thesis.

I was so lucky to be a student of KDI School of Public Policy and Management where I had chance to study many subjects as well as share experience with friends from different countries. I have never experienced a place that I can receive full support from not only Professors but also school's staffs; Especially, Professor Lisa Lim and KDI librarian who always willing to help and share experience of how to utilize all facilities that school provides us.

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I. INTRODUCTION

In the year of 2000, the United Nations set the goal that by 2015 every children should be able to complete primary education. The significant movement towards free universal primary education in the last two decades has increased the total number of children that have chance to enter schools. According to the World Bank (2015), the total number of out-of-school children declined from 100 million to 50 million between 2000 and 2012, and the global primary completion rate reached 92%. The primary school enrollment rates in developing countries have increased from 66% to nearly 100%, and the secondary school enrollment rose from 14% to 40% since 1960 (Pritchett, 2001). Despite the great expansion of education in most of the developing nations, the current record of enrollment rates and other indicators of educational measurement still remain disappointing. The quality of educational outcomes, high percentage of examination failure (Adeyemi, 2011; Ijaiya, 2000), and the big gap of gender and regional disparities in education (Nguyen & Griffin, 2011) are the signs of the existent of educational inequality.

One of the most commonly used ways to measure the level of educational inequality is academic achievement relating to the development of human capital. Family background is considered as one of the main factors influencing educational achievement (Betts, 2000). O'Connell and Beckett (1975) found that children from wealthy families likely have more chances to attend higher education, and tend to be more represented in the top highest paid

and most promising careers upon graduation. Besides, gender and family background also affect parents' decision regarding to their children's education. Females who attend higher educational institutions are more likely to come from wealthy families. Likewise, many empirical studies of gender and region disparities also demonstrated that inspire of decreasing gap between male and female, it still exists and requires attention in rural poverty areas; especially, the existence of differences between children from urban and rural areas in academic achievement (Yang, Huang, & Liu, 2014).

In Vietnam, since the Renovation (Doi Moi) reform in 1986, the education sector has experienced significant changes in terms of both quantity and quality. In particular, Vietnam has made progress in achieving universal primary education with the literacy rate now being at over 90% (World Bank, 2004). However, disadvantage groups such as poor households, ethnic minorities and female students still lag behind in their education achievement (Behrman & Knowles, 1999; Rew, 2009). There are relatively few studies examining the effects of the factors including family background, regional disparities and gender gaps together on educational achievement. Therefore, this study focuses on answering the question "How do family background, gender and region influence academic achievement in Vietnam?". The results of this evaluation will be used to suggest policy alternatives in order to eliminate the educational achievement gaps.

II. DATA AND METHODOLOGY

2.1. Data description

The data used for this study was from Vietnam household living standard survey (VHLSS), the representative sample survey throughout the nation that provides information about demographic, household characteristics to study the effects of socioeconomic background, region and ethnic on educational achievement in Vietnam. In term of household characteristics, the survey provides information about household members, education background, income, and expenditure, current health condition and medical utilities, housing, and participation in poverty reduction program. Regarding to commune level, it collects data of demography, infrastructure, agriculture and non-agriculture activities, and law and order. In early 1990s the living standard survey was brought to Vietnam with the official name of "Vietnam Living Standard Survey" (VLSS) to provide data for living standard monitoring, policy designing and policy evaluating. VLSS which included 4800 households in 150 communes was first conducted in 1992/1993 by the General Statistics Office of Vietnam (GSO). The United Nations Development Program (UNDP) and the Swedish International Development Agency (SIDA) supported finance while World Bank provided technical assistance to conduct the survey (Hansen & Le, 2013). After grasping the technical capacity, GSO started to conduct survey which was renamed to the "Vietnam Household Living Standard Survey" (VHLSS). From 2002, VHLSS has been conducted by GSO to collect data

related to the living standard of Vietnamese people as well as to monitor and assess the implementation Millennium Development Goals (MDGs) which are approved by the government in two-year base. In VHLSS, the sample size is larger in terms of both the number of households and the number of communes in comparison with prior version in 1992/1993. In this survey, more than 3000 communes in Vietnam were selected to collect information from more than 30000 households.

Since 2010, the sample size was larger compared to the previous survey. The duration of survey was divided into four periods with more than 60,000 households in over 3,000 communes/wards selected each period. This number accounts for nearly 30 percent of all communes in Vietnam. Thus, the survey has been considered as high quality data source that represents at national, regional, and provincial levels. It provides data related to key factors that influence academic achievement in Vietnam. For instance, questions were about individuals' educational qualification, school type, school attendance and school expenditure. The summary statistics for the sample are given in Table 1.

Table 1. Summary statistics of variables

Variables	No. of observations	Mean	Std. Dev.	Min	Max
Years of schooling	24200	6.6838	4.6094	0	21
Gender	30966	0.5040	0.5	0	1
Region	30966	0.7387	0.4393	0	1
Ethnic	30966	0.7876	0.4089	0	1
Family size	30966	4.5064	1.5442	1	9
Income	30966	82068.68	77112.51	1097	2118487

Data: VHLSS 2010 & 2012

In Vietnam, education system is divided as general education and tertiary education. In general education, total years of schooling are 12 years while in higher education, a person can spend 3 years in college or 4 years in university, 2 years for master degree and 3 more years for Ph.D. level. Therefore, in this study total years of education for one person can vary from 0 to 21 years. Individuals participated in this survey are categorized by gender as male and female, who live in rural or urban area in region category. Besides, because there are 54 ethnic groups in Vietnam so in this study, I categorized people into two big groups: Kinh ethic represents the main ethnicity in Vietnam and other ethnic minorities. Finally, individuals' income was measured in Vietnam currency system: thousand Vietnamdong.

2.2. Methodology

"Educational achievement is defined as the highest level of education that an individual has successfully completed" (Jürges & Schneider, 2011). It is one of the most important direct outcomes of education (Jenkins and Sabates, 2007). Educational achievement is often measured by the highest qualification that a person achieved or total years of education (completed schooling). Both of these measurements can be employed in many studies. However, educational qualification is not popular measure of educational achievement because it is more difficult for analysts to code it as an analytical variable with a reasonable number of categories (Jürges & Schneider, 2011). In contrast, years of schooling is often used because it is easy to compute and compare across regions. Besides, years of schooling provides information of educational decision at the specific time they stop going to school which related to human capital resources. Therefore, in this study, academic achievement is measured by average years of schooling of people who finished their education. Based on that, the correlation between the academic achievement and its key factors will be summarized by:

$$yschooling = \beta_0 + \beta_1 female + \beta_2 rural + \beta_3 ethnic + \beta_4 lnincome + \beta_5 familysize + \beta_6 d2012 + u$$

This study will apply a quantitative method by employing panel data analysis for controlling unobserved time-invariant variables. By using panel data analysis, the influence of unobserved family background variables such as parents' education is controlled. The

dependent variable for this study is average years-of-schooling which determines individual educational achievement. According to the data sources, the years of education is defined as the highest level of schooling that person attended. Then, it is categorized from no schooling (0 year) to Ph.D. (21 years).

The independent variables include wealth, gender, region, ethnic, and family size. The wealth status is measured by total income of the family which includes salary, income from both agriculture and non-agriculture, and income from assets, measured in thousand Vietnamdong (1000 vnd – Vietnamese currency). In order to examine the correlation between gender and education attainment, a variable Female is used, which is an indicator variable that takes 1 for female and 0 for male. Similarly, region is divided into two categories including rural and urban areas. Because there are 54 different ethnic groups in Vietnam so in this study ethnic will be coded 1 for Kinh ethnic – the majority ethnic group, and 0 for other minority ethnic groups. Logarithm of income refers the percentage change of family income from 2010 to 2012, while family size is the total number of family members.

In order to measure the inequality of schooling distribution among regions, education Gini coefficient is adopted (Thomas, Wang, & Fan, 2000):

$$\text{Gini} = \left(\frac{N}{N-1}\right)\left[\left(\frac{1}{\mu}\right)\sum_{i=2}^{n}\sum_{j=1}^{i-1}P_i\left|y_i - y_j\right|P_j\right]$$

μ: the average years of schooling for the population

n: number of education level (n=7)

P_i, P_j: the proportion of population at a certain level of schooling

y_i, y_j: years of schooling at certain level of education

N: population size

In order to calculate education Gini coefficient, average years of schooling is defined:

$\mu = \sum_{i=1}^{n} P_i y_i$

Illiterate: $y_1 = 0$

Partial primary: $y_2 = y_1 + 0.5C_p = 0.5C_p$

Complete primary: $y_3 = y_1 + C_p = C_p$

Partial secondary: $y_4 = y_3 + 0.5C_s = C_p + 0.5C_s$

Complete secondary: $y_5 = y_3 + C_s = C_p + C_s$

Partial tertiary: $y_6 = y_5 + 0.5C_t = C_p + C_s + 0.5C_t$

Tertiary: $y_7 = y_5 + C_t = C_p + C_s + C_t$

Where:

C_p: the cycle of the primary education

C_s: the cycle of the secondary education

C_t: the cycle of the tertiary education

There are many studies using education Gini coefficient to evaluate educational inequality (Barro & Lee, 1993; Thomas et al., 2001; Lbourk & Amaghouss, 2013). Based on the education system in Vietnam, this paper will use 7 levels of education that developed by

Barro and Lee (1993) including illiterate (or no schooling) , partial primary, complete primary, partial secondary, complete secondary, partial tertiary, and complete tertiary. Because Vietnam started to implement “Doi Moi” (Renovation) strategies in 1986 so in this study, Gini coefficient will be calculated for 2 cohorts including the old generation who was born before 1982 and young generation who was born from 1982 until 2010. Based on these 2 cohorts, Gini index will be defined for 6 regions in Vietnam.

III. LITERATURE REVIEW

There are different factors which influence the differences in academic achievement. This chapter will review both empirical and theoretical studies on education inequality by discussing the influences of family background, gender, region and ethnicity on academic achievement.

3.1. Family background effect on educational achievement

Many empirical studies showed that family background is the main factor influencing educational attainment (Persell, 1977). In the United States, by using data from 4,000 public schools, Coleman et al. (1966) found that students' achievement was more likely to be influenced by family characteristics than schooling factors. In 1972, Jencks et al. reassessed Coleman's data and also concluded that racial and socioeconomic background were the key reasons affecting academic achievement, while schooling factors were less likely to contribute to the variance.

Studying about educational opportunity in 54 different countries, Schutz et al. (2008) indicated that there was a strong correlation between students' achievement and family background. Particularly, its impact on educational attainment was "largest in England, Scotland, Hungary and Germany and lowest in France, Canada, Portugal and Flemish Belgium" (p.2, Schutz et al., 2008). In addition, Sirin (2005) by using meta-analysis to review journal articles published from 1990 to 2000, supported that at the student level, family

socioeconomic background can be seen as the main factor that correlates to educational achievement, and the correlation was stronger at the school level. In this study, Sirin pointed out that although the mean correlation of social-economic status and academic achievement was lower than White's study in 1982, the result of the significant influence to student performance still remained.

Caldas and Bankston III (1997) focused on examining the impact of socioeconomic status of peers and individuals on educational achievement. They found that individual family poverty status has a small effect while individual family social status has a significant impact on academic achievement. Furthermore, they also pointed out that while studying with classmates from high family social background; they are likely to achieve higher academic results. The same result was found in empirical research which was conducted in California by Betts and his colleagues (2000). They argued that there is an existent of unequal resources among schools which determined by the proportion of economically disadvantaged students. Especially, the differences in the socioeconomic status of students contributed the most to the variation in academic achievement in California.

Most of these studies showed that there is a disparity in academic achievement among students who come from different family socioeconomic backgrounds. Moreover, it appears that schooling factor less contributes in explaining the variation in academic achievement compare to socioeconomic background.

3.2. Gender inequality in education

Many scholars remark that increasing attention to female education is a significant step to reduce inequality in education in most of countries in the world (McDougal, 2000). The consequences for not investing in girl education are remarkable in slowing down economic growth as well as income, especially in developing nations (Dollar & Gatti, 1999). Despite the repid expansion of educational progress in most developing countries, the schooling enrollment and achievement of females still lag behind at all levels. In particular, at the basic level of schooling (primary), enrollment rates is high for both genders and appear to have a balancing gender prospect, but the situation is difference from the second education level (at secondary and tertiary education level) (Stromquist, 1989).

In order to reduce the gender gap, it is necessary to find out the main causes. According to Jayachandran (2014), the root cause of gender inequality in most of developing nations is related to cultural norms. In those countries, people believe that advanced education for woman may distract them from their traditional roles as wives and mothers. In addition, there is interaction of wealth and gender in academic achievement, especially in developing nations (Filmer, 2000). For instance, in studies about gender inequalities in primary schooling, Colclough et al. (2000) pointed out that poor households value the opportunity costs of schooling higher than richer people. Thus, in the situation where a school is open equally to everyone, the schooling costs such as textbook expenses, uniform costs and

meals costs make poor families have to make decisions of their children's education, which are likely to favor boys.

Along with the expansion of education progress, the gender gap has narrowed down but inequality still remains (Nguyen & Griffin, 2011). Especially, the interaction of both culture and wealth together are significantly influence academic achievement of female students (Stromquist, 1989).

3.3. Regional and ethnic disparities in academic achievement

There is no doubt that regional and ethnic factors play an important role in measuring the level of inequality in education across different regions. A number of researches have been conducted on this topic, especially in developing countries. Most of these studies concluded that reducing the difference in opportunity to access education between regions will decrease the level of educational inequality. Therefore, measuring the level of regional inequality of schooling is crucial, especially in developing countries (Yang, 2002; Benaabdelaali and Kamal, 2010; Tomul, 2011). Benaabdelaali and Kamal (2010) by examining data from the population census in three year 1982, 1994 and 2004, calculated Gini coefficient for regions and provinces in Morocco. They found that there is a big gap in education attainment measured by years of schooling among different regions. Provinces where the Gini index score was high emphasized high inequality in the distribution of education.

Many studies also found the differences in educational performance between urban and rural areas, especially in developing countries. For instance, Quian and Smyth (2008) analyzed data from the national census from 1990 to 2000 to compare the differences in education between rural and urban areas, as well as between coastal and inland provinces in China. They suggested that the main reason of the inequality in education in China is the large disparity between urban and rural areas. Similarly, Burt and Namgi (2009) by calculating the Gini coefficient from census data in 1970, 1980, 1990 and 2000 also confirmed that regional disparity leads to inequality in education. Furthermore, Yang, Huang and Liu (2014) emphasized that although education policy decreased the level of educational inequality as well as improved average years of schooling, the academic achievement between rural and urban areas is still a significant difference. Especially, when examining the interaction of gender and regional disparities, they found that despite the gender gap in education decreasing, it still needs attention in rural areas. They explained that rural areas are in a disadvantaged situation in receiving distribution of education.

The interaction of ethnic and regional disparities results in higher levels of educational inequality (Rew, 2009). Nguyen & Griffin (2011) found that in Vietnam although school enrollment rates increased substantially after the Revolution (Doi Moi), the educational expansion was not distributed equally among regions and ethnic groups. In addition, Walle and Gunewardena (2001) noted that academic achievement of minority ethnic

groups is significantly lower than the majority group. Kinh is the majority ethnic which accounts for 86% of total population in Vietnam. According to Rew's study (2009) average years of schooling of students from Kinh ethnic group are 8.23 while students who come from the most disadvantaged minority groups have average years of schooling from 1.98 to 3.78. Thus, the majority ethnic group receives more benefits from educational expansion compared to their counterpart such as the Hmong or the Dao.

To recap, inequality in education is an issue that needs attention, although empirical studies have shown the improvement in enrollment rates and academic performance. Scholars found that socioeconomic background is a critical factor that affects educational achievement. Besides, gender and regional disparities are also needed to be considered when discussing the inequality in education. Therefore, this paper will examine the influence of these factors on academic achievement in the case of Vietnam, where fewer researches on this issue have been conducted.

IV. FINDINGS

4.1. Vietnam education system

As mentioned in the Central committee of the 7th Party Conference (1993), improving people's knowledge, training human resources, and fostering talent are the most important goals in education in Vietnam. Vietnam education is socialist education system which is based on Marxism – Leninism and Ho Chi Minh's thoughts to educate people. In accordance with Constitution in 1992, Law on Education in 2005 and amendments in 2009, education policy focuses on developing both quantities and quality in which primary and lower secondary education are universal education levels; the contents of education must ensure the basic, comprehensive, and practical that will help students to develop their knowledge, skills and ethical behavior; besides, the government also implements the socialized education by encouraging the participation of private sector in providing education service.

In the progress of "Doi Moi" (Renovation strategy) since 1986, education system in Vietnam was renovated in 1992. In this system, Vietnam education includes formal education and non-formal education. Public organizations as schools, colleges, universities, and training centers are the majority in providing formal education and training. After Renovation, the government has established policies such as taxes, financial incentives, land, fees, etc. to encourage the development of nonpublic and private schools at all education levels.

Education levels and training qualification of education system in Vietnam including: (See Figure 1)

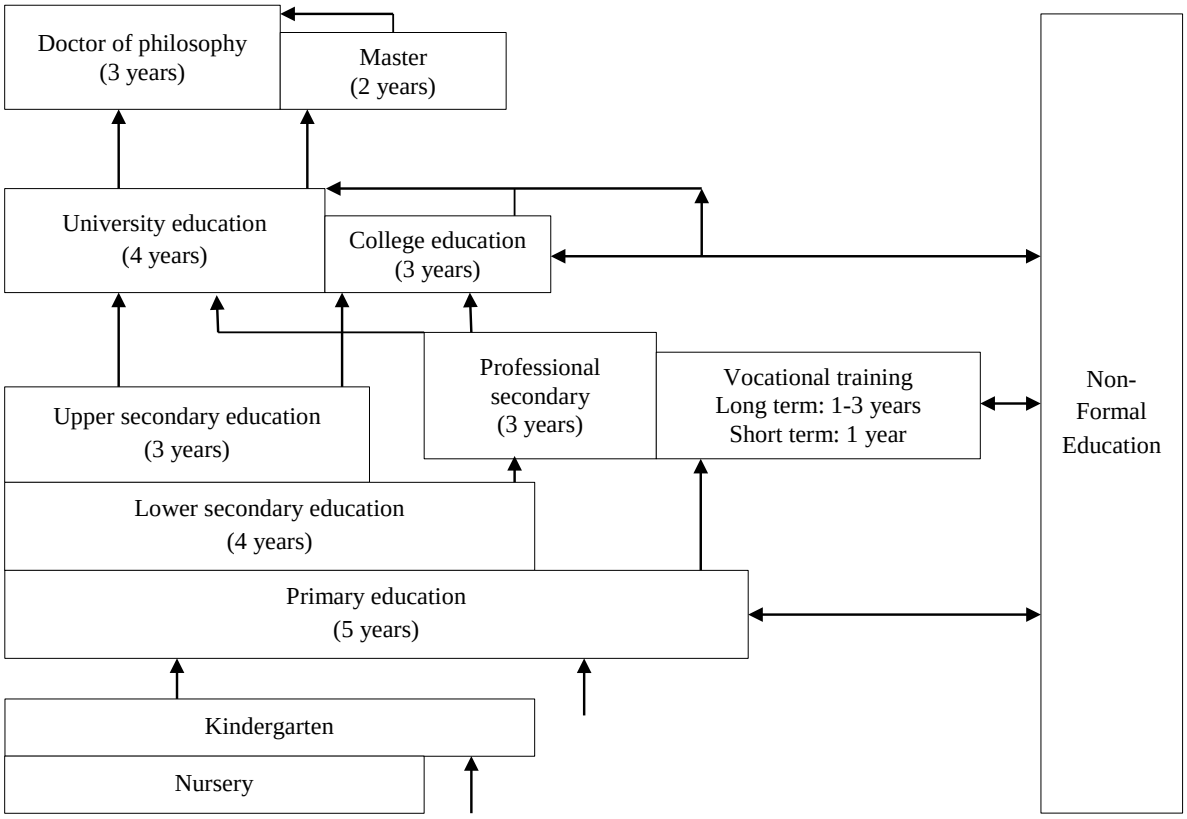
1) Early childhood care and kindergarten

2) Primary, lower secondary, and higher secondary

3) Professional secondary and vocational training

4) Graduate and postgraduate education

Figure 1: Vietnam national education system



Source: Ministry of Education and Training, 2007.

a. Pre-school education

According to Law on Education in 2005, children from 3 months to 6 years old can go

to school. Early childhood education (Nursery) is provided for children from 3 months to 3 years old while kindergarten schools are for children from 3 years to 6 years old. This education is not compulsory because these schools are considered as truthful places to take care of the children while their parents go to work.

b. Primary education

As universal education level which is defined in Millennium development goals, primary education is compulsory for every Vietnamese. This level is offered by both public and private sectors for children at the age of 6-11 years old. Students at primary level will study from grade 1 to grade 5; those who complete this education will receive a certificate provided by the principal of the school.

c. Secondary education

There are two cycles of general secondary education: lower secondary lasting 4 years (grades 6 to 9), and upper/higher secondary education from grade 10 to grade 12. After finishing lower secondary education, students can choose to take the entrance examination to enter upper secondary education or enroll in non-formal education level such as vocational training or professional secondary lasted in 3 years which is similar to upper secondary education. Students with diploma of either secondary school graduation or vocational education are equal to access tertiary education by taking the national entrance examinations.

d. Tertiary education

There are 2 main levels of tertiary education: undergraduate and postgraduate. After upper secondary education, students depending on their own capability will choose to go to colleges or universities. College education offers three-year programs which mainly focus on medical, administrative and financial professions. Besides, at the university level, students will normally study in 4 years to get bachelor degree (in some special majors such as medicine, dentistry lasting in 6 years, and 5 years in case of pharmacy, architecture, and engineering). In this study, average years of studying university will be calculated in 4 years in general. At the postgraduate level, students have to study two more years to get the master degree and three-year program for the Doctoral degree.

4.2. Gini coefficient

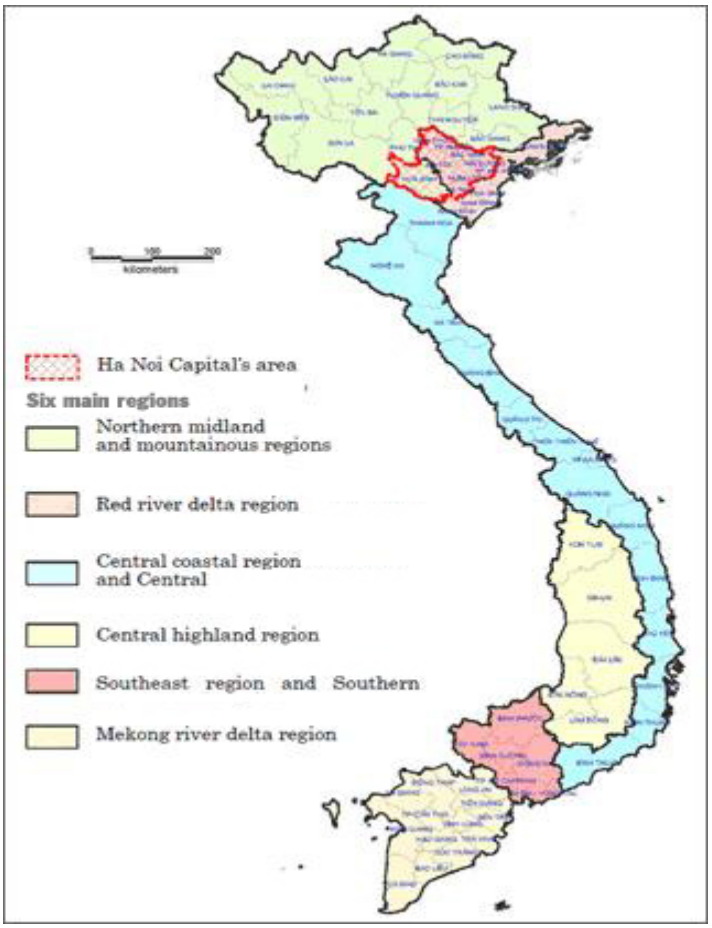
The education Gini coefficient for the whole nation in Vietnam is 0.394. Although Vietnam's Gini coefficient shows that the educational distribution is moderately equal, there is an existence of inequality among and between different groups including region groups, gender groups, and generation groups.

a. Regional and generation educational inequality

There are six main regions in Vietnam including Red River Delta (Redriver variable), Northern midlands and mountain areas (Midnorth variable), North Central and Central coastal areas (Northcoast variable), Central Highlands (Centralhill variable), South East

(Southeast variable), and Mekong River Delta (Mekong variable) (See Figure 2). Red River Delta which accounts for 4.5% of the national area consists of 11 provinces and cities: Ha Noi, Hai Phong, Hai Duong, Hung Yen, Ninh Binh, Thai Binh, Ha Nam, Nam Dinh, Bac Ninh, Vinh Phuc, and Quang Ninh. This region makes up 22.7% of total population, and contributes to national GDP around 22%. Northern midlands and mountain areas covers 14 provinces. Total area of this region is 95346 km^2 with 13% of total population. Most of people in this region are minority ethnics who have been suffered many difficulties in both economic development and education access. There are 14 provinces in North Central and Central coastal areas. This place is considered as the home town of many talented people in Vietnam. Another region is Central Highlands with only 5 provinces and accounts for about 5.5% of total population, most of people here are also from minority ethnics. South East with 6 cities and provinces is known as the leading region in many aspects such as economic development, FDI attraction as well as GDP contribution. The 6^{th} region is Mekong River Delta includes 13 cities and provinces which accounts for 21% of total population. Agriculture is the major economic activity in this region, however, mostly producing only crude agricultural products which are low quality and effectiveness.

Figure 2: Six main regions of Vietnam



Source: Viet Nam Institute of Architecture, Urban and Rural Planning (VIAP) website

The key finding from this result is that, although Gini coefficients in all regions in Vietnam represent relative equality, educational achievement is not equally distributed among regions. According to Table 2, there are gaps of average years of schooling and Gini coefficient among different regions in Vietnam. Those figures were computed by using data that includes individual ages five and above and divided into two cohorts. In general, average years of schooling as well as education Gini coefficient have been improved significantly in all regions in Vietnam when compare the old cohort and young cohort.

In particular, Red River Delta posesses the highest average years of schooling with 9.21 years and 9.05 years for old and young generation respectively, as well as the lowest Gini coefficient with 0.26 and 0.24 for each cohort; this means that it is more equal in educational distribution in comparison with other regions in Vietnam. Although it seems average years of schooling in Red River Delta decreases when compare these two cohorts, the statistic result proves that there is no difference between these two numbers in 10% significant level. Therefore, it still follows the general trend that young generation has more chance to access education as well as receives longer average years of schooling compare to old generation.

South East is considered as one of the most important areas of economic development in Vietnam. It contains six leading cities including Ho Chi Minh City, Tay Ninh, Binh Phuoc, Binh Duong, Dong Nai, and Ba Ria-Vung Tau. Along with the economic development, education Gini coefficient of South East region decreased from 0.34 to 0.27 when compare the old and the young generation which means students now are more equal in accessing education in this region. Northern midlands and mountain areas and Mekong River Delta are two regions that have highest Gini coefficient as well as lowest average years of schooling.

Table 2. Inequality in educational attainment in Vietnam by region and generation

	Old cohort		**Young cohort**	
	Average years of schooling	**Gini**	**Average years of schooling**	**Gini**
Redriver	9.21	0.26	9.05	0.24
Midnorth	6.65	0.39	7.12	0.30
Northcoast	7.52	0.33	7.98	0.26
Centralhill	6.94	0.37	7.01	0.31
Southeast	8.02	0.34	8.13	0.27
Mekong	5.91	0.40	6.96	0.29

Note: Old cohort: people who was born before “Doi Moi” (1986)

Young cohort: people who was born after “Doi Moi” (1986)

Data: VLHSS 2010

b. Ethnic educational inequality

There are 54 different ethnics in Vietnam, Kinh is the majority ethnic with 86% of the total population while other ethnics such as Tay, Thai are just around 2% and Muong, Dao, Hoa, Nung, H’mong, etc. account for only 1% of the population each. Therefore, in this study, population will be divided into 2 big groups including Kinh and other ethnic minorities.

Table 3. Inequality in educational achievement in Vietnam by ethnicity

	Average years of schooling	**Gini**
Kinh	7.23	0.366
Others	4.75	0.496

Data: VLHSS 2010

Table 3 indicates that there is a big difference in educational attainment and distribution among ethnics. As the ethnic majority in Vietnam, The Kinh's average years of schooling is about 1.5 times higher than people from other ethnics (7.23 years compared to 4.75 years). Similarly, Gini coefficient of Kinh people is 0.366 which is lower than other ethnic groups. It means that the Kinh ethnic has been received more equally educational distribution compared to ethnic minorities.

c. Gender based educational inequality

To examine the inequality in education based on gender, in this study, each ethnic group will be divided into two groups: male and female. As previous results in Table 3 show that there is a big difference between ethnic groups. Table 4 also indicates that ethnic males in both groups have higher average years of schooling and lower Gini coefficient than ethnic females. Especially, females in ethnic minorities received the most unequal distribution in education with Gini coefficient is 0.534.

The discrepancy also exists among male students from different ethnic groups. Particularly, the Kinh males received about 7.522 average years of schooling while male students from other ethnic minorities got educational attainment of only 5.150 years. Besides, Table 4 also shows that males and females from minority groups stopped their education after primary education while both genders in Kinh ethnic had chance to continue their education to secondary level. Additionally, although Kinh females have higher Gini coefficient and lower average years of schooling than Kinh males, they still got more benefit from education system than both males and females from minority groups.

Table 4. Inequality in educational achievement in Vietnam by ethnicity and gender

	Kinh ethnic		**Other ethnics**	
	Female	Male	Female	Male
Average years of schooling	6.94	7.522	4.359	5.150
Gini	0.379	0.352	0.534	0.456

Data: VLHSS 2010

4.3. Regression model results

In this paper, main research question focuses on whether factors such as family background, gender, and ethnicity influence on academic performance; and how they explain the inequality in education distribution in Vietnam. The regression model estimated the correlation between independent factors including income, family size, gender, ethnicity, and

region and education attainment. As expected, the regression results in Table 5 shows that there is a positive effect of socioeconomic status on academic achievement, and the existence of the disparity between different genders and ethnicities. Besides, the result also indicates that the influences of gender, region, and socioeconomic background on educational attainment are all statistically significant.

Table 5. (Years of schooling) Pooled regression results

Variables	**Pool OLS**	
	(1)	**(2)**
rural	-1.098	0.174
	(15.76)**	(1.16)
female	-0.919	-0.269
	(17.06)**	(2.41)*
ethnic	0.835	0.880
	(11.57)**	(12.16)**
lnincome	1.967	1.863
	(45.79)**	(45.74)**
familysize	-0.503	-0.450
	(27.20)**	(24.31)**
oldgen		2.696
		(16.83)**
oldfemale		-1.008
		(8.03)**
oldrural		-1.815
		(11.07)**
d2012	-0.403	-0.389
	(7.18)**	(7.95)**
Constant	-11.908	-11.180
	(27.18)**	(28.60)**
Observations	24200	24200
R-squared	0.18	0.19

Note: Robust t statistics in parentheses * significant at 5%; ** significant at 1%

Data: VHLSS 2010, 2012

According to Table 5, the first column result shows that individuals from wealthier families are likely to have better achievement in education than those from poorer families. In case of other factors held constant, if income increases by 1%, students will receive nearly 2 more years of education. Therefore, the more income that children's family earns, the higher educational attainment they achieve. Besides, family size also influences on academic achievement. If children are in the family that has one more member, the average years of schooling for them will decrease half of the year (0.503). Although the degree of influence from family size is not much significant but to the developing country as Vietnam, the number of family members is quite big which means children will have less chance to go to school if they come from large family.

The second factor that has significant relationship with average years of schooling of a person is region. In this case, I divided all areas in Vietnam into two big groups including rural and urban area. Location shows an important role in academic achievement for children. Based on regression result, children from rural area are likely to receive less than 1 year of education compare to those living in urban area.

Although there are many efforts to reduce gender gap in educational access, the difference between male and female in academic achievement still exists in Vietnam. Table 5 indicates that male students are more likely to achieve higher education level than female students. Controlling other factors, girls attain less than about 10 months of education

compare to boys. Therefore, gender gap is still one of the big problems that should be solved in accessing education.

Education Gini coefficient and averages years of schooling of Kinh ethnic are much more superior to those of other minorities. In this regression model, it is proved again that ethnicity has significant impact on educational attainment. Similar to the effect of regional disparity, Kinh ethnic also achieve more than 10 months of education than other minority ethnics.

Besides examining the influence of all factors such as socioeconomic background, gender, and region on academic achievement in Vietnam, I was also interested in how the impact of these factors changed along the development of education system. Therefore, I divided total sample size into two groups: old generation who was born before “Doi Moi” strategy, and young generation who receive new education policy after “Doi Moi” strategy. In addition, to examine how interaction terms explain the variance in education attainment along the time, I added some interaction variables in regression model. The interaction terms are Generation × Gender, Generation × Region (Generation includes old and young cohorts, Gender is male and female, and Region is urban versus rural).

The result from new regression model illustrates similar pattern as the previously reported model (1). In general, the result did not change the influence of all factors on academic achievement. It still shows that gender gap and regional disparity are big concerns

for the government and policy makers in accessing education. Especially, comparing to young generation who was born after the Innovation strategy (Doi Moi) in 1986, old cohort is much more disadvantaged in education attainment.

The regression result proved that before Doi Moi, female students were likely to be more disadvantaged in academic achievement than male students. In particularly, males of old generation attained more than 1 years of education compare to female students. In addition, the interaction term Generation × Region also proved the statement of the inequality in educational distribution among different regions and generations.

Overall, there are many factors that affect to education attainment. Among those, family income stands out to be one of the most important factors that have significant impact on academic achievement. Besides, gender gap and regional disparity are also needed to be solved in order to improve equality in education in Vietnam.

V. DISCUSSION AND POLICY RECOMMENDATION

5.1. The development of education – The improvement of Gini coefficient

Since 1986, along with the economic transition, education was one of the most priority development goals. There were significant changes in educational policy which was enacted in Constitution (1992), Education Law (2005) and amendments in 2009. Before Doi Moi strategy, education was a part of Cultural Revolution, but since 1986 it became the most priority investment in human resources development which contributed to the development of the country (see Table 6). In order to develop education system, the government encouraged private sector to participate in providing educational services at all qualifications and training levels.

Before “Doi Moi”, Vietnam just ended the war and achieved unification. People suffered from low income and unstable economic condition which affected education system, especially secondary education. According to census survey 1979, gender inequality in education was a big issue. Many girls did not go to school even at primary level. Besides, the ratio of girls to boys in lower secondary as well as upper secondary education indicated that female students dropped from schools more than male students. In addition, due to the war, many families did not have enough financial capability to send their children to schools.

Table 6. Comparison of education policy before and after “Doi Moi”

Before “Doi Moi” Strategy	After “Doi Moi” Strategy
Education is a part of cultural revolution The main purpose of education is to educate and train human resources for the country	Education and training are the most priority policy The development of education has to meet requirement of the socialist- oriented market economy
Investment in education is not investing for growth	Education is one of the basic investment oriented to development
There are only public educational institutions	Diversifying the type of education The government encourage private sector participate in providing education services
Eliminating illiteracy There is no consistent of education and training with social and labor market	Universalized primary and lower secondary education Developing vocational training centers
Education system built based on old Russian educational model	Education system was rebuilt according to international model
Educational management was based on centralization and bureaucracy model	Socialized education based on decentralization, democratization, and modernization

Source: Education Law 2005

Table 7. Number of general education institutions

	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
SCHOOL	**26,817**	**27,231**	**27,595**	**27,900**	**28,114**	**28,413**	**28,593**
Primary	**14,518**	**14,688**	**14,839**	**14,939**	**15,051**	**15,172**	**15,242**
Public	14,443	14,601	14,749	14,844	14,957	15,080	15,148
Non-Public	75	87	90	95	94	92	94
Class/Classroom ratio	1.23	1.15	1.11	1.08	1.08	1.08	1.12
Triple shifts	127	98	74	13	12	9	
Lower Secondary	**9,041**	**9,386**	**9,657**	**9,768**	**9,902**	**10,060**	**10,143**
Public	8,980	9,334	9,613	9,740	9,868	10,041	10,127
Non-Public	61	52	44	28	34	19	16
Class/Classroom ratio	1.35	1.11	1.06	1.10	1.05	1.17	1.19
Triple shifts	101	48	32	39	29	14	0
Upper secondary	**1,828**	**1,953**	**2,074**	**2,167**	**2,192**	**2,242**	**2,288**
Public	1319	1426	1515	1,591	1,735	1,852	1,954
Non-Public	509	527	559	576	457	390	334
Class/Classroom ratio	1.27	1.28	1.21	1.17	1.12	1.20	1.16
Triple shifts	62			6	6	4	0

Source: Statistics collected by Ministry of Education and Training

(http://www.moet.gov.vn/?page=11.10&view=3544)

After 1986, along with many development policies, the government also invested more in education which was shown by the increase of classes and total number of student at all qualification levels (see Table 7).

In general, total number of academic institutions increased every year, each commune has their own primary schools, lower secondary schools while and upper secondary schools are in each district. In many mountainous provinces, the government invested in building schools for minority students. Especially, students did not need to study 3 shifts per day due to lack of classroom since 2010.

Overall, after changing perception of the role of education in the development of a country, there was significant change in the development of education which explained the reduction of Gini coefficient between young and old generation. By increasing number of academic institutions, students had more chance to access education at all qualification levels. Besides, to encourage students go to school, Vietnam government also allowed private sector participated in developing education system. This movement contributed significant changes in education in Vietnam (Le, 2012).

5.2. The relationship between family background, gender, and regional disparity in education attainment

a. Family background vs. education attainment

As regression results indicate that there are significant consistent of socioeconomic

status and academic achievement. According to Do (2015), poverty is one of the major reasons that prevent children attending school. The costs associated with schooling make poor children are likely to be more difficult to regular attend or to complete the whole academic year. Especially, the regulation of financial autonomy for public institutions since 2006 was one of the reasons that lead to the increase of tuition fee in Vietnam which means more difficulty for poor students. Participatory Poverty Assessments (PPAs) illustrated that child labor is much more valuable than schooling for many poor households. They value short-term economic benefit much more than the long-term benefit of education (Jones & Pham, 2007).

This finding highlights the important role of educational policies such as policy of tuition fee reduction and exemption, or policy of providing scholarship for disadvantaged groups. In poverty reduction program (135 program), Vietnam government supported study for all students whose parents are poor households which involved in this program at primary and secondary levels. Besides, children who living near border, islands and minority ethnics are also supported by providing accommodation, supporting schooling fees and study materials. This movement has been encouraged poor students, especially minority ethnics, access primary and secondary education (Le, 2012). However, due to budget constraint, it is difficult to support all poor students in Vietnam. Therefore, the government should encourage private sector to participate more in providing education services as well as implement

financial reform to increase the effectiveness and efficiency of educational investment.

b. Gender influences education attainment

Although the gender gap in Vietnam has decreased in recent year, it still one of the factors that influence on academic achievement. In order to reduce barriers that cause gender gap in education, the government needs to implement policies that can solve the root cause of this issue.

Culture is one of the important reasons that cause difficulty for girls in accessing education. In Vietnam as well as some other developing countries, many households value males than females because they believe that males are the one who continue their family name and take care of parents when they get older. Especially, together with poverty, cultural perception has significant impact on schooling decision making process. In poor families, parents are more likely to face the challenge of making decision of who should they send to school, and because they believe that male's schooling is more valuable than female's so they often choose to educate their sons (Colclough et al., 2000). Especially, minority girls are more disadvantaged in accessing education compared to Kinh girls (Do, 2015). Due to lack of labor force and cultural perception, minority girls often have to get married when they are at 7-8 grades. Boys' families often promise that girls can continue their education after marriage; but in reality, they have to drop school, become housewives and have to do many house works. Similarly in rural areas where most of households do agriculture, they need labor

force. Therefore, boys have higher possibility to attend class while girls need to stay at home and do house works.

Another explanation is that socioeconomic background strongly determines the possibility of girls' participation in school. Poverty is one of the main reasons why girls are disadvantaged in accessing education in many developing nations (Onwuameze, 2013). According to Pham and Jones (2007), there are only 92 percent of children from poor families can attend school while those from rich households are universally enrolled in Vietnam; Because although Vietnam Constitution states that "primary education is compulsory and tuition free", in practice, there are many costs such as textbooks, uniforms, and insurance that keep poor students out of education system. To poor families, they have to choose who can receive education service, and often boys are the one who have advantage to continue their study. Although the enrollment rate to primary education is quite high for males and females, the differences of access is shown at secondary level and beyond while poor families have to face financial issues related to school fees and other costs (Pham & Jones, 2007). In order to help female students have more chance to access education, the government should continue financial support program, especially provide scholarship for female students who achieve excellent performance. Besides, the government should also by education, community programs and social communication to influence on households' perception of gender discrimination.

c. Ethnicity and regional disparity influence education attainment

Although the enrollment rate has increased every year but it does not guarantee equal chance to access education. The first issue is regional disparities that make more difficult for children to go to school. As Gini coefficient illustrates that Northern midlands and mountain areas, and Mekong River Delta are two regions that have highest inequality in educational distribution. One of the most important reasons for this result is the geographic condition. In Northern midlands and mountain areas, most of each commune has their own primary school so there is not much difficult for children to attend class. However, if going to secondary school or high school, they have to walk very far to get there. In winter, average temperature of this area is often below 7 Celsius degree while in flood season, the travel is even more difficult which can endanger lives. Another way to solve this problem is to rent a room to stay but most of their parents cannot afford to pay the costs. The majority of households in this Northern area are involved in agriculture activities; they depend on only harvest crops, livestock and poultry, and forest products which are unstable income jobs. Therefore, it is difficult to support children study further with such income.

96% of poor households are living in rural area in the Mekong Delta region (World Bank, 2004). Landlessness is one of the main reasons that cause poverty in this region. The poverty circle related to landlessness is that if individual has no land, there is no chance for them to access credit. No skills, no financial support and no land, they highly depend on

earnings from hired labor which are unstable and low income. If there is no change, this circle will continue and people cannot escape from poverty. Education can be considered as the way to overcome poverty, but due to lack of parental attention as well as financial burden, children in this region still cannot achieve high education attainment (World Bank, 2004). Moreover, floods occur annually which affects transportation as well as chance to attend class. After the flood, people lose their houses, asset and even fishing boards that affect their living. Therefore, there is no chance for their children to access education when they become poorer.

Along with urbanization process, people in urban area have more chance to get high paid job which can help their children receive better education (World Bank, 2004). Most people live in rural area are minority ethnics and poor households who have low skills, heavily depend on agricultural activities which is unstable and low income. Besides, demographic change is also influence education attainment of children across all regions. Family planning has weak effects on fertility rates in rural area, especially among some ethnic minority groups, which lead to the common phenomenon in this region is that rural families are likely to have more children than urban families (World Bank, 2004). As regression result indicates that family size also affects average years of schooling of each individual. Therefore, the government also needs to consider policy that not only related to economic development but also demographic transition.

5.3. Limitation of this study

Due to budget constraint and time limitation, the data used for this study is Vietnam Household Living Standard Survey in 2010 and 2012. The period of time is quite short so the changes in population that can be used to predict trends and patterns of education development are limited. Panel data analysis can only examines the relationship between independent variables including family background, gender, and regional disparity and education attainment. It cannot represent clearly causal inference in this regression model.

Education attainment in this study was measured by individuals' years of schooling. However, it is reported years of schooling that cannot clearly identify how long they achieve that qualification level. Therefore, it is difficult to find out the reasons why repeated education happened if it exists.

Overall, although there are still limitations in this study, the panel data is adequate to measure inequality in education as well as examine the relationship between family background, gender and regional differences and education attainment in recent years. Based on that, policy makers can have enough evidence to make consistent policy in order to provide equally opportunity in education access.

"Doi Moi" strategy since 1986 made significant improvement in equally educational distribution. In the new circumstance of modern education and international standard,

Vietnam government should focus on develop education system in both quantities and quality as well as reduce inequality in academic access for disadvantaged groups in society.

VI. CONCLUSION

By using data from Vietnam Household Living Standard Survey in 2010 and 2012, the author basically identified the level of inequality in education as well as examined the influence of family background, gender and region on education attainment in Vietnam. After "Doi Moi" strategy, the government restructured education system as well as invested in improving educational quality leading to the enhancement in educational distribution. The average years of schooling has increased along the development of education while Gini coefficient also indicates that there are more equal in accessing education. However, the inequality among different ethnic groups as well as gender groups still exists in Vietnam. Especially the differences between Kinh ethnic and other minority ethnic groups are significantly in education attainment. Therefore, Vietnam government should focus more on developing education for disadvantaged groups including minority ethnics as well as disability groups.

This study also illustrated that socioeconomic background is the prominent factor affecting academic achievement. The finding suggests that children from wealth families are likely to receive more education than those from poorer families; especially family income influences on chance for female students to access education. Besides, family size is another factor that a developing nation as Vietnam should concern. In rural area where family planning has weak effect, the government needs to pay more attention to control the family

size which affects not only economic condition but also chance to access education of children.

Finally gender discrimination is still problem in Vietnam society. Together with regional disparity and ethnic differences, it is more serious when considering the circumstance of minority girls who have more disadvantaged in accessing education. “Promote gender equality and empower women” is one of the top priorities in Millennium Development Goals by 2015 in Vietnam. In order to achieve this goal, Vietnam government should not only continue poverty reduction program but also find way to make change in cultural perception which influences girl education.

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