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ETHNIC DISPARITIES IN EDUCATION IN VIETNAM

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Abstract

Education plays an important role in determining individuals' socioeconomic attainment and a nation's competitiveness on the global stage. Thus, educational disparities not only prevent vulnerable populations from gaining access to a better life but also hinder a nation's development. Theoretically, economic growth provides more resources for education. However, initial observations in many developing countries show that economic growth does not bring the same educational benefits to everyone. Vietnam offers an interesting context in which to study ethnic educational disparities in a developing country transforming from a centrally planned to a market-driven economy. After socioeconomic transformations, Vietnam has achieved significant progress, including economic and educational growth. However, educational disparities, especially in upper-secondary education, not only persist but have increased. Ethnic minority students continue to lag behind in upper-secondary school, despite the government's significant efforts to promote their education. Thus, understanding of ethnic educational disparities can yield recommendations for policymakers, parents, and educators regarding how to promote ethnic minorities' educational success and assist in Vietnam's broader socioeconomic development.

To understand ethnic disparities in upper-secondary education in Vietnam over the last 20 years since the socioeconomic transformations, my dissertation comprises two studies. In "Ethnic Disparities in Education after Vietnam's Socioeconomic Transformations: Family Background and Residential Differences," I used data from the Vietnam Household Living Standard Surveys (9 waves of data collected between 1992 and 2014) to examine factors contributing to increases in ethnic educational disparities at the upper-secondary level. My findings confirmed that the ethnic disparities in three outcomes — upper-secondary enrollment, attendance, and completion — continue increasing. While residential differences slightly

contributed to these disparities, family background differences, especially parental education and the rise in ethnic-based income inequality at the household level, explained these ethnic-based education disparities. In addition, I found that while household income contributions to the ethnic educational disparities tended to decrease, the role of parental education with respect to the ethnic-based educational disparities increased. These findings suggest important implications to policymakers, educators, and parents in promoting education among disadvantaged populations, especially ethnic minorities in Vietnam.

Despite a number of challenges, some ethnic minority youths do enroll in and complete their upper-secondary education. Therefore, understanding how some ethnic minority students manage to overcome barriers and succeed educationally can also provide important insights regarding the means that policymakers, educators, and parents can pursue in order to address such educational disparities. With this aim, in my second study, “Ethnic Minority Educational Success: Understanding Accomplishments in Challenging Settings,” I used a mixed-methods approach and explored data from the Families and Communities in Transition (FACT) study to examine risk and protective or supportive factors pertaining to upper-secondary education among youth belonging to the Thai ethnic group, the second-largest ethnic minority group in Vietnam. The study found that early marriage, poverty, low-educated parents, low parental engagement in the child's education, school distance, being bullied or teased, and being encouraged by friends to drop out were challenges to ethnic minorities’ upper-secondary school enrollment and retention. More importantly, the study provided evidence that holding a positive attitude toward schooling oneself and enjoying effective support from parents, relatives, and peers (both in and out of school) can prevent ethnic minority students from dropping out of school and promote their educational success.

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Chapter 1. Introduction

1.1. Introduction

Education is a basic human right and a crucial determining factor in the development of individuals, communities, and countries. Education in developing countries has emerged as the solution for breaking intergenerational chains of poverty and promoting socioeconomic development (Tarabini, 2010). Thus, educational disparities, which refer to unjust or unfair differences in educational outcomes across groups (e.g., disparities by gender, ethnicity/race, region, wealth level) (American Psychological Association, 2012), not only prevent vulnerable populations from gaining access to a better life but also hinder the nation's development.

While the effects of education and educational inequality on socioeconomic development are well known, there is little known about how socioeconomic development impacts education and educational disparities in turn, especially at the secondary school level, where such disparities are often the greatest (Hannum, 2002; World Bank, 2011). Theoretically, economic growth and social development provide more resources for education. However, initial observations in many developing countries show that socioeconomic development does not bring the same educational benefits to everyone (Brady, Kaya, & Beckfield, 2007). Thus, it is important to understand the process of this educational stratification in developing countries during their socioeconomic transformations.

Given recent socioeconomic and political changes, Vietnam offers an interesting context in which to study ethnic educational disparities and thereby contribute to the current literature on such disparities during socioeconomic transformations. Vietnam is one of the world's few remaining communist countries and has retained a strong commitment to educational equality. However, its dramatic transformations from a centrally planned to a market-driven economy

brought the replacement of a free educational system with a *fee* educational system. Privatization and decentralization in education may hurt ethnic minorities. In fact, ethnic disparities at the upper-secondary level have increased significantly over the last 20 years, even though Vietnam has been recognized as one of the countries to achieve significant economic growth during the same period.

Figure 1-1. GDP Growth & Gaps in the Upper-Secondary School Attendance, Enrollment, and Completion Rates between Ethnic Majority and Minority Groups (1992 – 2008)



Source: World Bank, 2011

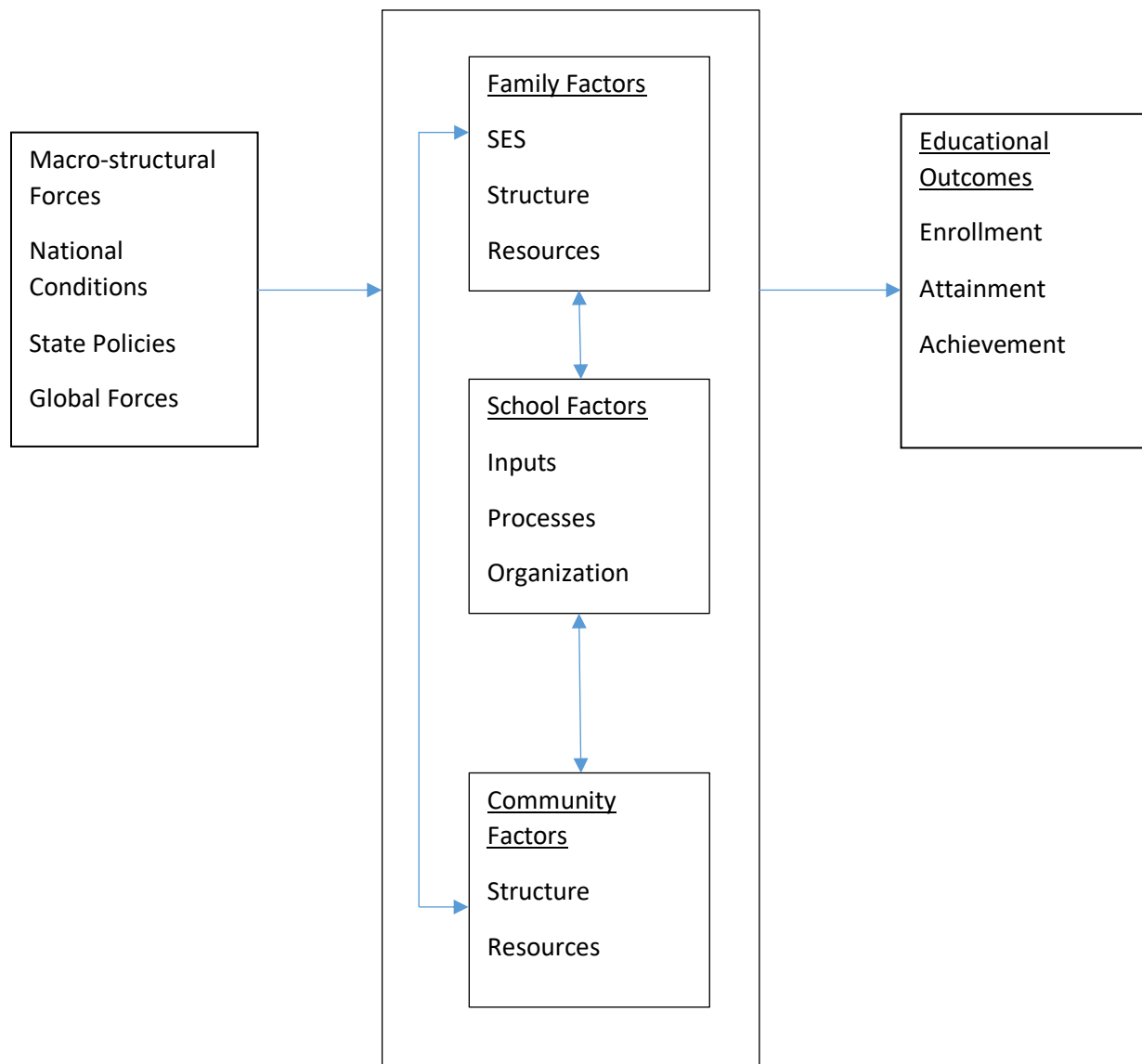
To understand how ethnic educational disparities changed during Vietnam's socioeconomic transformations, my dissertation explores ethnic differences in upper-secondary education in Vietnam over the last 20 years since the socioeconomic reforms. I adapted the conceptual framework of educational inequality, developed by Buchmann and Hannum (2001), to address two main research questions (1) which factors contribute to increases in ethnic

disparities at the upper-secondary level (Paper #1), and (2) how do ethnic minorities overcome obstacles and achieve educational success at the upper-secondary level (Paper #2). Paper #1 uses nationally representative quantitative data from the Vietnam Household Living Standard Surveys (VHLSS). Paper #2 uses both quantitative and qualitative data from the Families and Communities in Transition (FACT) study. While examining Research Question #1 reveals problems causing ethnic educational disparities during the socioeconomic transformation, Research Question #2 focuses on ethnic minority students' accounts to identify which factors might reduce their risk of educational failure and promote their educational success. Answers to the two research questions not only provide an understanding of ethnic educational disparities but also yield recommendations for policymakers, parents, and educators regarding how to promote ethnic minorities' educational success.

1.2. Educational Disparities: The Conceptual Framework

Social stratification within education is shaped by a wide range of factors at multiple levels, including national and international policies, families, schools, and communities (Buchmann & Hannum, 2001). At the macro-structural level, the nation-state shapes the provision of educational opportunities and regulates the structure of the educational system through its educational laws and policies. For example, by passing laws on compulsory schooling, the states may spark demand for education; or by privatizing and decentralizing their educational system, they may prompt schooling costs to increase, thus lowering educational participation overall and thereby exacerbating inequality (Brown & Park, 2002; Hannum, 2002).

Figure 1-2. Buchmann and Hannum's (2001) conceptual framework for educational inequality



At the micro-structure level, the effects of family background and school characteristics on children's education are well documented. Socioeconomic status, family size and structure, and family decision-making processes are often related to educational disparities in both developed and developing countries (Chudgar & Shafiq, 2010; Edmonds, 2008; Haller & Portes, 1973). For example, children with low socioeconomic status often have lower rates of school

enrollment and attainment compared to children in better-off families, and single parenthood has negative effects on children's educational outcomes due to lack of human or social capital in the household (Dika & Singh, 2002). School-level effects on children's educational outcomes are also evident. Differences in school inputs, infrastructures, and teacher quality result in inequality in educational achievements. Lastly, although research on the role of community-level factors in children's educational outcomes is still limited (Buchmann & Hannum, 2001), existing studies find community factors, such as the concentration of poverty and the community's adult literacy level, to be significantly associated with educational disparities (Binder, 1999; Brown & Park, 2002; Chudgar & Shafiq, 2010). Further discussions on the relationships between educational outcomes and micro-structure-level factors are presented in Chapters 2 and 3.

1.3. The Vietnamese Context

Vietnam is a multi-ethnic country consisting of 54 different ethnic groups. The Kinh and Hoa (Chinese) are often lumped together as a single majority, due to their social and economic similarities (Baulch, Haughton, Haughton, & Chuyen, 2002). The remaining 52 groups, comprising 14 percent of the population, differ from the majority mainly by economic status, language, and cultural characteristics. While the Kinh and Hoa mostly live in urban and lowland areas that are economically and agriculturally productive, the remaining 52 ethnic minority groups settle in remote and mountainous regions. These geographic differences explain some of the socioeconomic differentials, including educational disparities between ethnic minorities and the majority group, but not all (Baulch et al., 2002; Baulch, Nguyen, Phuong, & Pham, 2010; World Bank, 2011).

Policy principles and their intended and unintended consequences also shape education and educational disparities. Similar to other countries', the current Vietnamese education system

is a 12-year system. Primary education lasts five years (grades 1 to 5), and secondary education is divided into two levels, namely, lower-secondary (grades 6 to 9) and upper-secondary (grades 10 to 12). To be able to enroll upper-secondary school, students have to pass an entrance exam. An alternative path to the upper-secondary education is to go from lower-secondary into the vocational education (non-formal education).

The Vietnamese education system is strongly managed by the central government. The Ministry of Education and Training is in charge of shaping and disseminating the curriculum, providing regulations for teaching and student assessment, and publishing the textbooks. The central government is also in charge of making policies and overseeing educational programs. Since 1945 when Vietnam was recognized as an independent nation, its educational development has reflected its socioeconomic and political changes, and these changes have divided Vietnamese education into two distinct periods: education in the centrally planned economy and education under a socialist-oriented market economy.

Education in the centrally planned economy, from 1945 to 1989.

In northern Vietnam, the country began implementing state-socialist welfare regimes, including the free education system, after Vietnam's declaration of independence in September 1945; these changes followed in southern Vietnam after the American war ended in 1975. In these welfare regimes, nation-state-financed schooling was to be compulsory for all children and protected by law (London, 2011b). Formal schooling changed from a privilege of the relatively few — only about 10 percent of the population was literate before 1945 (Biddington & Biddington, 1997) — to a mass education system. The provision of educational opportunities was boosted beginning in 1945 through literacy campaigns, which included compulsory literacy classes that were opened on a village basis, and through a provision that all educated people

could become teachers, thus applying an ideology that those who knew more could teach those who knew less, and literate people could teach illiterate ones. The same education tactics were redeveloped in the south after 1975. In addition to the literacy campaigns, this period also witnessed education policies that have typically been attached to state-socialist welfare regimes with a centrally planned economy. These included no private schools, the harmonizing of education curriculums with the contents of 5-year socioeconomic plans, the integration of education with productive activities, and the assigning of jobs for graduates of post-secondary schools (London, 2011b).

Vietnam made significant educational achievements in spite of its economic scarcity and war damage. By 1957, the number of students at the primary level in the northern part of the country alone was three times higher than the number of primary school pupils nationwide in 1939 (Phạm, 1999). The educational achievement was also found in southern Vietnam in the late 1970s. A report shows that, by that time, almost 25% of the southern population was enrolled in either the primary or the lower-secondary schools (Woodside, 1991).

Despite that progress, the education system in this period also created the first seeds of exacerbated educational inequality between rural and urban areas, as well as between ethnic minorities and the majority group, as schools were expected by the government to be funded by the local budget and supplemented by the central budget. Rural schools normally have much less money than those of urban areas, and on top of this resource disparity, there was also the fact that ethnic minorities resided in remote areas, faced language barriers, and received fewer state resources for education than the majority group (London, 2011b).

The social stratification in education became more serious in the 1980s, when war damage, international isolation, and economic scarcity undermined the state-socialist welfare regimes.

Economic reforms were initiated in 1986 to replace the centrally planned economy with a socialist-oriented market economy. These reforms promoted the concept of a multi-sectorial economy that would allow domestic and international trade and investment and would recognize private sectors and private property rights (Glewwe, Agrawal, & Dollar, 2004). However, while the early progress of the reforms had already not allowed for providing sufficient funding for universal education, the economic crisis and liberalization had the effect of draining financial resources from the central budget, including the budget for education (London, 2011b). As a result, public investment in education fell sharply. Education sector workers' salaries declined, and many of them left their schools in search of a better living. In rural and remote areas, the length of a school day for most children was reduced to less than three hours (London, 2011b). Then, in 1989, a fee-based educational system was introduced to replace the universalist principles that had guided education policies since 1945.

Education under a socialist-oriented market economy from 1990 to the present.

Vietnam's education between 1990 and 2015 was associated with a period of high economic growth, changes in policy principles governing the provision and payment for education, and states' efforts to achieve universal primary education and reduce educational disparities. Since the economic reforms in the late-1980s, Vietnam has achieved significant progress in economic growth and poverty reduction. From a relatively low-income country — GDP per capita was less than roughly 200 USD in the early-1990s — Vietnam has become a middle-income-status country with GDP per capita of about 1,273 USD in 2010. The poverty rate fell significantly from 58.1 percent in 1993 to 9.8 percent in 2013 (Ministry of Planning and Investment, 2015). As consequences of the rapid economic growth, educational investments increased at both the state and household levels, and more non-agricultural jobs were created,

especially in the garment, textile, and electronics industries.

With respect to the principles governing the provision and payment for education, two main changes in this period include the replacement of free education with the fee-driven educational system, and the shift to allowing (and even promoting) non-public schooling. To explain the former shift, educational fees were introduced at all education levels in September of 1989. The educational budget is shared between the central government and local governments; while the central government funds scholarships and teacher and administrator salaries, the local government funds the remainder, including infrastructure, salary supplements, and so on. In fact, according to Glewwe and Jakoby (1998), “local funding” has come to mean funding by parents (World Bank, 2011). Families also have to buy textbooks for their children.

Although school fee waivers or reductions could be applied to children with a handicapped parent, to ethnic minorities, to wounded soldiers' children, and to children in remote areas, the fee-driven education system is shifting the burden of financing education from the state onto households themselves. Reports have shown that school fees expanded continuously since the 1990s, and household expenditure on education increased from 43% of total education expense in 1996 to over 50% in the early-2000s (London, 2011b). Household spending on education per student increased more than six times between 2002 and 2012 (Ministry of Planning and Investment, 2015).

Furthermore, households' educational expenditures differ substantially by region, between urban and rural settings, and between ethnic minorities versus the majority. Particularly, urban families' spending on education was three times more than that of rural households, and ethnic majority families spend seven times more than ethnic minority families (London, 2011a; Ministry of Planning and Investment, 2015; World Bank, 2011).

Aside from the unavoidable burdens imposed by the shift to a fee-based educational system, the shift to permitting and promoting non-public education represents the second major change in Vietnamese education post-1989 (London, 2011b). According to the National Assembly's Resolution 90, adopted in 1993, non-public schooling exists in three forms: semi-public schools, semi-public classes *within* public schools, and private schools. However, after over 20 years, the vast majority of Vietnam's schools are still public schools. The private education sector exists mainly at the post-secondary level and still comprises less than 15% of all schools in the country (World Bank, 2011).

An additional noteworthy feature of Vietnam's educational development between 1990 and 2014 is the government's efforts to achieve a universal primary education. Since the early-1990s, Vietnam's government has treated primary education as compulsory for all children from 6 to 14. With the goal that all children aged 6 – 14 complete primary education by the end of the 1990s, the government sustained an aggressive movement to get children into primary school and to make sure that they remained enrolled, with the aim of ensuring that no children of this age range were left illiterate. The system of schools at all levels expanded rapidly from that point forward. Preschools, primary schools, and satellite schools have been built and have reached all 10,000 communes in the country. The ratio of grade levels per classroom was reduced between 1999 and 2013 from 1.57, 1.51, and 1.43 for the primary, lower-secondary, and upper-secondary levels, respectively, to 1.08, 1.10, and 0.99 (Ministry of Planning and Investment, 2015; World Bank, 2011). Teacher availability increased as well, with higher teacher quality, as measured by certificates of standard qualification; by 2012, more than 99% of teachers qualified for the national standard at all levels (Ministry of Planning and Investment, 2015). However, inequality

still exists in the availability of educational opportunities between rural and urban areas (Ministry of Planning and Investment, 2015; World Bank, 2011).

Finally, the government's efforts to reduce educational inequality have played a significant role in the education of poor segments of Vietnam's population, especially of ethnic minorities. As part of its commitment to providing education for all, the Vietnamese government has implemented a series of policies to extend educational benefits to these minorities and others in poor, remote, and socioeconomic difficult areas. These policies exist in two principal forms: The National Target Programs (NTP) and the Program for Socio-Economic Development in Communes Facing Extreme Hardship in Ethnic Minority and Mountainous Areas (Program 135). These programs promote education through developing boarding schools and providing financial assistance, including school fee exemptions, credits for students, scholarships, food, allowances, and conditional cash payments for the income-poor household (London, 2011b; OECD Development Centre, 2017).

In sum, Vietnam's ethnic diversity and its recent social, economic, and political changes provide an interesting set of circumstances within which to study ethnic-based educational disparities in a developing country in the midst of its socioeconomic transformations. The fact is that despite the country's having achieved remarkable progress at the primary and the lower-secondary level, Vietnam's ethnic minorities have been largely excluded from these educational gains, especially at the upper-secondary school level. Vietnam's socioeconomic transformations have not only brought significant achievements in economic growth and poverty reduction at the national level but have also changed the educational macro-structure and shifted educational resource allocation unequally by populations. Thus, the socioeconomic transformation may contribute to Vietnam's social stratification in education.

Chapter 2. Ethnic Disparities in Education after Vietnam's Socioeconomic Transformations: Family Background and Residential Differences

2.1. Introduction

Vietnam has experienced dramatic socioeconomic and political changes as part of its transition from a centrally planned to a market-oriented economy in the late-1980s. These reforms, also known as Doi Moi or Renovation, covered all social, economic, and political aspects, including economic liberalization, private sector expansion, and education reforms. These socioeconomic transformations contributed to a unique period of transition characterized by high economic growth during 1992–2012. From 1992 to 2002, the country obtained an average GDP growth rate of 7.6%. Although Vietnam's GDP growth rate declined then to 6.5 % during 2002–2012, this rate still surpasses the average GDP growth rate for developing countries (6.2%) and transitional economies (4.3%) during the same period (United Nations, 2013). In this time, Vietnam has also made outstanding achievements in socioeconomic development, moving from being one of the poorest countries to a lower-middle-income status country in 2010 (Ministry of Planning and Investment, 2015; Van der Moortele, 2010). Poverty rates declined from 58% to 10% between 1990 and 2010, and Vietnam achieved the Millennium Development Goals of eradicating extreme poverty and hunger by the early-2000s (Ministry of Planning and Investment, 2015).

However, it is unclear how this economic success impacted educational attainment. On the one hand, educational attainment could increase where economic growth results in greater government and family educational investments (Ranis, Stewart, & Ramirez, 2000). Economic growth often means more non-agricultural job opportunities, as well, which may spur individuals

and families to invest in education to be more competitive in the job market. At the same time, though, it is also possible that Vietnam's socioeconomic transformations contribute to a decrease in educational attainment. For one, moving away from a centrally-planned and -administered educational system creates increased educational privatization, resulting in higher out-of-pocket schooling costs for families (Hannum, 2002). Additionally, initial economic growth in developing countries often creates export-oriented jobs, such as garment production and food processing, which require low levels of education and therefore may not provide families with incentives for educational investment. These employment opportunities may also encourage children to leave school early and begin working (Duryea & Arends-Kuenning, 2003; Robert Warren & Lee, 2003).

At first glance, it appears that Vietnam's educational advancements mirror its economic growth. Between 1990 and 2008, the national attendance rates for the primary level increased from 84.9% to 95.2%; for lower-secondary education, from 71.6% to 91.5%; and for upper-secondary education, from 22.8% to 68.1% (World Bank, 2011). A closer look, however, reveals that these remarkable achievements have not been equally distributed across the population and that Vietnam's ethnic minorities have been largely excluded from these gains. In fact, at the upper-secondary level and higher, the gap between ethnic minorities and the Kinh majority students has actually increased significantly since the early-1990s. In 1992, the gap between minority and majority students in net enrollment rates at the upper-secondary level was 21.4%; by 2008, that gap rose to 26.9%, with 27.4% of minority and 54.3% of majority students enrolling at the upper-secondary level. The ethnic gap in completion rates also increased significantly, from 10.4% to 34.7%, with only 21.5% of ethnic minority students aged 18–19 completing upper-secondary education in 2008 (World Bank, 2011). These educational

disparities increased despite substantial government investments in educational infrastructure, teacher training, and educational subsidies designed to promote ethnic minority education (World Bank, 2011). Thus, understanding sources of educational inequality between ethnic minorities and the majority group represents an important endeavor for anyone attempting to assist in Vietnam's broader socioeconomic development.

Research on developing countries shows that place of residence and family background play crucial roles in perpetuating ethnic educational disparities (Hannum, 2002). Although residential features that vary between ethnic minorities and the majority group play an important part in socioeconomic group differentials, there has been no systematic study exploring the role of family background and place of residence with respect to ethnic disparities in educational attainment during Vietnam's socioeconomic transformations. To fill this gap, this study focuses on upper-secondary education, where ethnic disparities have increased and are largest.

The study first explores changes in ethnic disparities during 1992–2014 along three common measures of educational attainment at the upper-secondary level: 1) school attendance, 2) school enrollment, and 3) school completion. Differences between upper-secondary school attendance and upper-secondary school enrollment reveal issues such as grade failure, grade repetition, and delayed initial enrollment. Differences between upper-secondary school enrollment and upper-secondary school completion illustrate problems of school dropout.

Next, the study focuses on examining the role played by family background and place of residence in ethnic disparities across all three measures of upper-secondary education. This study seeks to understand why ethnic minorities continue to lag behind in upper-secondary school outcomes and why ethnic educational disparities have increased in the wake of Vietnam's socioeconomic transition.

2.2. Background

Residential Differences and Educational Disparities

Existing studies often use urban-rural residence and geographic region to examine the effects of residential features on educational attainment. In Vietnam, the urban-rural division scheme is related to administrative units. The Vietnamese administrative system is divided geographically into three levels. On the first level, Vietnam is divided into 58 provinces and 5 municipalities. This level is often called the province tier. These provinces are subdivided into provincial cities, towns, and districts at the second level also called the district tier. At the third, the districts are further subdivided into townships, wards, and communes and often called the commune tier. Based on these divisions, urban areas include cities, towns, townships, and wards, and “rural” refers to communes.

In addition to this urban-rural division, the country is geographically and socioeconomically divided into 6 socioeconomic regions, including Red River Delta, Northern Midlands and Mountains, North-Central Coast and South-Central Coast, Central Highlands, Southeast, and Mekong River Delta. However, these regions are not financially independent administrative units that can run their own programs (Hoang, 2014), and ethnic minorities and the majority group cluster in very different regions. The ethnic majority mostly lives in urban and lowland areas: Red River Delta (98%), Southeast (94%), and Mekong River Delta (92%). Ethnic minority groups, meanwhile, settle in rural, remote, and mountainous areas: Northern Midlands and Mountains (55%) and Central Highlands(36%) (United Nations Population Fund, 2011).

Studies have shown that urban-rural and regional inequalities intensified as Vietnam moved away from a centrally planned to a more market-oriented economy (World Bank, 2012).

That trend thus may further increase ethnic educational disparities through disparities in school access, school quality, the location of employment opportunities, and the concentration of poverty.

School access and quality

School access often refers to school distance and transportation options. In general, residence in the rural, remote, and mountainous areas means that children must travel substantial distances to school, with few transportation options. Despite the Vietnamese government's efforts to expand schools to serve everyone, not all levels of schooling are locally available (World Bank, 2011). While primary schools are available in all communes, usually located at commune centers, several different communes may have to share a lower- or upper-secondary school. Upper-secondary schools are often located in district centers, towns, and townships, where students from several communes are pooled together (London, 2011a).

Because ethnic minorities mainly live in rural, remote, and mountainous areas where upper-secondary schools are often unavailable in their communes, attending upper-secondary school requires minority students to move to a district center and live apart from their families. Baulch (2009) finds that, on average, ethnic minority students have to move a distance of 10.12km from home to attend upper-secondary school, while the distance for majority students is only 4.98km. This distance becomes a substantial barrier to ethnic minorities' upper-secondary school attendance and completion (Baulch et al., 2010), since transportation infrastructure is poor: cars are often unavailable or rarely used; public transportation is non-existent; and the distances to these schools require significant travel costs and time (World Bank, 2011).

Better school quality contributes to better academic achievement and also encourages student attendance (Buchmann & Hannum, 2001; Hanushek, Lavy, & Hitomi, 2006; World

Bank, 2011). However, most Vietnamese schools are public, school quality varies greatly by region, with urban schools being of much higher quality than those in rural areas (World Bank, 2011). This difference is largely due to the financial decentralization policy, in which local education budgets derive from local economic revenue (London, 2011a). Although financial shortages can be supplemented by the central budget, rural schools significantly depend on their own respective rural economic sectors, which have less money than urban ones. Consequently, schools in economically disadvantaged regions — where ethnic minorities reside — usually have fewer facilities and lower-quality teachers than do schools in urban areas. This gap in school quality has increased with economic reforms, alongside increases in regional economic inequality (Korinek, 2006; Ministry of Planning and Investment, 2015; Taylor, 2004).

Child labor and adult employment

Child labor and adult employment opportunities vary between urban and rural areas, and they influence parents' decisions about educational investments in several ways. First, child labor plays a significant role in school participation, particularly at the upper-secondary level: when child labor options are available, school dropout for labor force participation and immediate earnings may be an attractive option. The higher a child's earnings, the higher the opportunity costs of remaining in school (Binder, 1999). Thus, on the one hand, families in rural areas, where children can be employed easily in agricultural activities, may be less willing to send their children to school (Chudgar 2006). On the other hand, poor families in more industrialized areas may find a dearth of employment opportunities for low levels of education anyway, as mechanization reduces the need for unskilled labor (Webbink et al. 2008).

Vietnam's child labor has “deep cultural roots” (Rosati & Tazannatos, 2006, p.5) and is legal as long as it is not “harmful, dangerous or exploitative” (Rosati & Tazannatos, 2006, p.5).

Child labor is also thought by many Vietnamese to make positive impacts on child development, including physical strength, intellect, and personality (Rosati & Tzannatos, 2006).

Unsurprisingly, — given the opportunity costs to schooling in rural areas — the rate of child labor in rural areas is higher than that in urban areas, with about 85% of child labor occurring in rural areas. While 19% of rural children engage in economic activities or household chores, only 7.56% of urban children do so (International Labour Organization, Ministry of Labour Invalids and Social Affairs, & General Statistics Office of Viet Nam, 2014). Given that ethnic minorities mainly live in rural areas, these findings suggest that differences in labor force participation rates between children from urban vs. rural areas would be a major factor influencing ethnic disparities in education in Vietnam.

In addition to child labor, employment opportunities for adults influence school attendance through perceptions about future returns on education. According to human capital theory, education can be seen as an investment in an individual's labor productivity that can increase individual income prospects (Becker, 1962). Therefore, parents may compare the economic returns they expect on education at different levels with the costs for attending in order to make what they perceive as rational decisions about their children's schooling (Basu & Van, 1998; Robeyns, 2006). Parents will be more willing to send their children for further education when they observe that those with more education will earn more than those with less (Becker, 1981). Meanwhile, when future earnings are uncertain or relatively low, parents may see little gain from increased school attendance and send their children to work instead.

Thanks to the socioeconomic reforms, returns on education in Vietnam increased during 1992–2012. In general, one additional year of schooling was associated with an income increase of 9.7% in 2010. However, not only are the returns in urban areas higher than the returns in rural

areas; this gap has also increased over time. While adding one year of schooling in urban areas is likely to increase hourly wages by 7.6%, the gain is only 4.2% in rural areas, according to 2010 statistics (World Bank, 2012). These findings suggest that low returns on education may contribute to low school attendance in rural areas, as well as to ethnic disparities in school participation.

Poverty concentration

Poverty concentration is another factor contributing to differences in schooling between residential areas. The positive correlation between school participation and income levels of residence is confirmed, even when family background and demographic characteristics are controlled for (Binder, 1999; Brown & Park, 2002; Garner & Raudenbush, 1991; Hannum, 2003). One possible explanation is that a wealthy community can provide extra resources to reduce direct schooling costs through its community institutions, such as community libraries, laboratories, or other facilities (Gumus, 2014).

In Vietnam, income disparities between regions are very well documented and poverty is highly concentrated in remote and mountainous areas where most of the ethnic minorities reside. For example, the Northwest and the Central Highlands, two regions with the highest percentages of ethnic minorities, have experienced high — and increased — poverty rates. These rates were, respectively, 33% and 26% in 1992 and rose to 57% and 33% in 2006 (World Bank, 2011). Differences in poverty concentration between regions, therefore, would be a critical concern in studying ethnic educational disparities.

Family Background Characteristics and Educational Disparities

Family background factors influencing child's schooling include family income, parental education, and family structure and size. It is possible that educational disparities have persisted

and increased partly because of how Vietnam's socioeconomic transformations influenced these family background characteristics for ethnic minorities and the majority group unequally.

Family income

Family income, expenditures, and possessions are critical for educational attainment in that they determine a family's ability to spend on children's education, influence whether parents send their children to school or keep them at home to contribute labor to household production, and affect how parents allocate their own time with respect to working versus supporting their children's learning (Chudgar & Shafiq, 2010; Edmonds, 2008). The positive correlation between household income and educational attainment is very well documented (Anh, Knodel, Lam, & Friedman, 1998; Filmer, 2000; Gumus, 2014; Hannum, 2003; Israel, Beaulieu, & Hartless, 2001).

In the context of Vietnam, studies highlight that, compared to the majority groups, ethnic minorities not only have lower income (Baulch et al., 2010; Glewwe & Chen, 2012) but also have benefitted less from Vietnam's dramatic economic growth (Baulch et al., 2010). This income inequality resulted from "6 pillars of disadvantage" (World Bank, 2012, p. 112), including low levels of education, less mobility, less access to financial services, less productive and low-quality land, limited market access, and stereotyping and other cultural barriers (World Bank, 2012). During 1992 to 2012, while the majority group enjoyed relatively high-income growth, minorities experienced increasing poverty. In 1993, minorities comprised 20% of all poor households. By 2010, the share of minorities among the poor had more than doubled, to 47%.

The income gap between ethnic minority groups and the majority is vast: 66.3% of ethnic minorities were still poor in 2010, compared to only 12.9% of the majority (World Bank, 2012).

Due to income advantages, the majority group may transfer their economic benefits to educational success, while their poorer, minority compatriots lag still further behind in educational attainment.

Parental education

Another key predictor of educational attainment is parental education. Social capital studies suggest that parental education is a resource for children's education. Parents' education can contribute to their children's in several ways: being able to help children with their homework; being knowledgeable about providing for their health and nutritional needs; and being able to produce safety nets that prevent shocks from disturbing the children's education (Chudgar & Shafiq, 2010). In addition to providing these types of instrumental support for children's schooling, parents' education level influences children's educational aspirations, in turn, thus serving as a strong predictor of children's educational attainment (Haller & Portes, 1973; Sewell, Haller, & Ohlendorf, 1970). Children often want to attain positions comparable to those of the adults in their families; hence parents may serve as education role models (Kao & Tienda, 1998).

Research in Vietnam consistently finds a relationship between parental education and children's educational outcomes. For example, parents' number of years of schooling is positively correlated with children's primary school completion (Dang & Glewwe, 2009). Parental education is closely linked to children's secondary school completion too (World Bank, 2011), even being the strongest predictor of dropout for children at the upper-secondary level (Baulch et al., 2010). Adding just one year of parental education lowers the probability of a child dropping out of upper-secondary school by 17 – 20% (Baulch et al., 2010). Furthermore, a longitudinal study following 3,000 children at ages 6, 7, and 8 from 2002 – 2006 revealed that,

on average, compared to ethnic minority parents, ethnic majority fathers and mothers have 5 and 6 more years of schooling. The study also highlighted that higher parental education among the majority group in Vietnam explains 0.3 standard deviations of the performance gap between ethnic minority and majority children (Glewwe, Chen, & Katare, 2012). These findings suggest that ethnic minority parents' low education may remain a significant limitation to the educational outcomes of their children.

Family structure and sibship size

Family structure and size also influence children's educational outcomes through the human and social resources that families can use for their children's schooling. From this perspective, families are often categorized into three main structures: single-parent, two-parent, and extended (i.e., multiple generations living in the same household). Family structure is one of the main indicators of family social capital related to children's education; it presents not only the stability but also the availability of resources such as money, time, and emotional support that facilitate it (Dika & Singh, 2002). The presence of two parents in the home is often considered the most advantageous structure for child development, and children with single-parent families often experience poor educational outcomes (Dika & Singh, 2002; Israel et al., 2001). Meanwhile, more adults living in the same home — the extended family structure — does not always mean adding resources to the child's educational success. Research in Bangladesh has shown that nuclear families there invest more in children's education than extended families do (Chudgar & Shafiq, 2010). By contrast, research in Africa shows that the extended family provides support to children, helping them to gain access to higher-quality schooling (Buchmann & Hannum, 2001). All in all, benefits of the extended family structure depend on the status of the individual family members themselves, such as with respect to age, health, and income, as well

as cultural contexts.

In Vietnam, the two-parent family structure predominates across ethnic minorities and majorities both, about 60% overall. Extended families account for about 25% in total, and one-parent families account for only 9% (Belanger, 2000). While extended families remain more popular among ethnic minorities than among the majority (Baulch, Chuyen, Haughton, & Haughton, 2007; United Nations Population Fund, 2011), one-parent families are not common among ethnic minorities (General Statistics Office, 2011). Traditional patterns of multigenerational families in Vietnamese culture, which minority groups are more likely to maintain, reinforce the obligations of younger generations to their elders. The oldest or the youngest son, depending on ethnicity and region, is expected to stay and take care of his parents after marriage. In the event that there are multiple sons, it is required that newly married couples stay with the groom's parents at least until another brother marries and joins in taking care of them (Hirschman & Nguyen, 2002). The presence of elderly dependents or people with low-to-no income in the family, thus, may create economic burdens instead of additional resources for child development. Given a high prevalence of low income among Vietnam's ethnic minorities, their extended-family households may pose a hindrance to education rather than a support.

Another factor influencing resources for children's education is sibship size. The resource dilution theory proposes that since family resources are finite, they are diluted as sibship size increases (Blake, 1989). Thus, the more children a family has, the fewer resources a given child receives for education. The positive correlation between dropout and number of siblings is well supported (Dika & Singh, 2002; Downey, 1995; Park, 2008).

Vietnam's socioeconomic transformations have significantly influenced the number of siblings in Vietnamese families through decreases in fertility. Although the fertility rate among

the majority group dropped from 3.6 to 1.9 between 1989 and 2009, however, fertility among ethnic minorities remains high. For example, the fertility rate was 2.2 for the Thai and 4.96 for the Hmong in 2009 (United Nations Population Fund, 2011). Baulch et al. (2007) also found that fertility among ethnic minority women was 25% higher than that of the Kinh majority, and minority groups' household size was 5.4 members compared to the Kinh's 4.6 in 1998.

In sum, the combination of regional disparities, especially between rural versus urban areas, and family socioeconomic disparities between ethnic minorities and the majority translates into several disadvantages that many minority children face: barriers in access to upper-secondary schools; poor school quality; high opportunity costs to schooling; low returns on education; and fewer economic, human, cultural, and social resources within the family for education. Taken together, these disadvantages lead to the hypothesis that family background and residential differences are important contributors to ethnic educational disparities and that Vietnam's socioeconomic transformations may impact these factors differently for members of ethnic minorities versus the majority, such that the educational disparities increase.

2.3. Methods

Data

This study used data from the Vietnam Household Living Standard Surveys (VHLSS). The VHLSS is a set of nationally representative, repeated cross-sectional surveys that collect demographic, educational, and economic data on households since 1992. The second wave was conducted in 1998, the third in 2002, and a new wave every 2 years since then. To date, 10 waves have been conducted.

Given its focus on examining educational disparities at the upper-secondary level after

Vietnam's period of socioeconomic transitions, this study has used all data currently available: 1992, 1998, 2002, 2004, 2006, 2008, 2010, 2012, and 2014. (2016 data are not yet available.)

Vietnamese children are required to enroll in grade 1 at 6 years of age; are expected to reach upper-secondary school, grade 10, at age 15; and are expected to complete grade 12 at age 18 (or age 19, according to World Bank studies). However, because late enrollment and grade repetition are moderately common in rural areas, especially among ethnic minority children (World Bank, 2011), my study included youths from 15 to 20 years of age at the time of the surveys. The final sample, then, included 3,074 individuals in 1992 (12% ethnic minorities), 3,962 individuals in 1998 (14% of ethnic minorities), 15,076 individuals in 2002 (16% ethnic minorities), 4,630 individuals in 2004 (18% ethnic minorities), 4,701 individuals in 2006 (19% ethnic minorities), 4,409 individuals in 2008 (19% ethnic minorities), 3,639 individuals in 2010 (21% ethnic minorities), 3,397 individuals in 2012 (22% ethnic minorities), and 2,800 individuals in 2012 (23% ethnic minorities). Weights were used when applicable for generalization to the population.

Measures

Outcome variables

To explore changes in ethnic educational disparities from 1992 – 2014, this study adapted the World Bank (2011)'s three measures of educational attainment at upper-secondary level: school attendance, school enrollment, and school completion.

School attendance. This was a dichotomous outcome variable measuring whether or not respondents aged 15 to 18 attended school, either currently or to completion in the past. The variable was created from the questions, "Are you currently enrolled in school?" and "What is the highest grade completed?" Respondents were assigned a "yes" for school attendance if they were currently in school or on summer vacation, or if they were currently not in school but had

already completed grade 12. This variable was designed to capture the in-school status of an age cohort without emphasizing specific school levels. The attendance rate was also estimated to compare its changes over the years.

$$\text{Attendance rate (AR)} = \frac{\text{No. children aged 15 – 18 in school}}{\text{No. children aged 15 – 18}}$$

Upper-secondary school enrollment. This was a dichotomous outcome variable measuring whether or not respondents aged 15 to 18 were enrolled in upper-secondary school, either currently or to completion in the past. This variable, too, was created from the questions “Are you currently enrolled in school?” and “What is the highest grade completed?” A respondent was coded as “yes” if they had completed at least grade 9 and remained in school, if they were in the middle of their summer vacation but had already completed at least grade 10, or if they were not currently in school but had already completed grade 12. Net enrollment rate was also estimated to compare its changes over the years.

$$\text{Net enrollment rate (NER)} = \frac{\text{No. children aged 15 – 18 enrolled in upper – secondary school}}{\text{No. children aged 15 – 18}}$$

Differences between the AR and NER imply inefficiencies such as grade failure, repetition, and postponed initial enrollment.

Upper-secondary school completion. This was a dichotomous outcome variable measuring whether or not respondents aged 18 to 20 had completed upper-secondary education. The variable was created from the question “What is the highest grade completed?” Respondents were considered to have completed upper-secondary school if they had completed grade 12. Completion rate was also estimated to compare its changes over the years.

$$\text{Completion Rate (CR)} = \frac{\text{No. youths aged 18 – 20 who completed upper – secondary education}}{\text{No. youths aged 18 – 20}}$$

To examine the roles of residential features and family background in educational disparities between ethnic minorities and the majority, this study used as dependent variables all of the three outcome measures described above: upper-secondary school attendance, upper-secondary school enrollment, and upper-secondary school completion.

Independent variables

Minority. Minority was a binary ethnic variable identified by the household head's self-report. The majority group included the Kinh and Chinese (Hoa) (minority = 0). The other 52 ethnic groups were categorized as the minority group (minority = 1).

Urban. This binary variable indicated respondents' place of residence, whether in an urban (urban = 1) or rural (urban = 0) location.

Region. This was a categorical variable indicating respondent's place of residence by geographic region. Regions were coded according to Vietnam's administrative divisions, including Red River Delta (region = 1), Northern Midlands and Mountains (region = 2), North-Central Coast and South-Central Coast (region = 3), Central Highlands (region = 4), Southeast (region = 5), and Mekong River Delta (region = 6).

Household income quintile. This was a categorical variable derived from household income as estimated by the VHLSS. Comparing household income by quintiles allowed for looking at how equitably indicators including educational attainment were distributed by wealth status (Chakraborty, Firestone, & Bellows, 2013), especially, an easy illustration and interpretation of the relative differences in poverty levels between ethnic minorities and the majority.

Educational level of father. This was a categorical variable indicating the highest educational level that the father completed (0 = no school, 1 = primary education, 2 = lower-secondary education, 3 = upper-secondary education or higher).

Educational level of mother. This was a categorical variable indicating the highest educational level that the mother completed (0 = no school, 1 = primary education, 2 = lower-secondary education, 3 = upper-secondary education or higher).

Nuclear family. This was a categorical variable indicating whether respondents lived either in a nuclear family (nuclear family = 1) or an extended family (nuclear family = 0). A household was coded as nuclear if it consisted only of children and their parents (single parent or two parents), and as extended if more than two generations lived together.

Family dependency ratio. Researchers calculate a dependency ratio by taking the *sum* of the nonworking population in the young age group (normally ages 0 – 14) and in the older age group (above 65), and then finding the ratio of this sum to the total population (Ram, 1982). In the family context, this study variable was measured by the total number of household members under 14 years and above 65 years, divided by total household size.

Sibship size. This is a continuous variable indicating the number of siblings in the household. This variable takes into account family resources shared by siblings.

Female. This was a binary variable (female = 1 and male = 0).

Age. This was a respondent's rounded years of age at the time of the interviews and calculated by VHLSS.

Analytic Approach

In this study, I first used descriptive statistics to calculate changes in upper-secondary school attendance rates, upper-secondary school net enrollment rates, and upper-secondary school completion rates between ethnic minorities and the majority group, from 1992 to 2014. Then, significant t tests were used to test the null hypothesis: namely, that the change in each of the three rates = 0.

Next, to examine factors contributing to ethnic educational disparities, I examined the possible mediation effects of place of residence and family background on the relationship between ethnic minority status and educational outcome. Because the three educational outcomes — school attendance, school enrollment, and school completion — were binary dependent variables, logistic regression models were often used to examine the relationship between an educational outcome and the independent variables (Marteletto, 2012). However, in logistic regression models, omitted variables result in unobserved heterogeneity, which is problematic for interpreting log-odds ratios or odds ratios as substantive effects, for comparing coefficients across models with different dependent variables, and for comparing coefficients across samples or across groups *within* samples over time (Mood, 2010). Therefore, the logistic regression model does not allow for comparing the coefficients for family background and residential factors, nor does it allow for identifying the substantive effects of these factors on educational disparities between ethnic minorities and the majority over time.

To address this problem, I used the decomposition method for non-linear models developed by Karlson, Holm, and Breen (2010) (KHB decomposition). The decomposition method allows researchers to decompose a covariate's total effect into a direct effect and an indirect effect. The total effect is obtained from a model without any mediating variables. The

direct effect is obtained from the model with mediators and can be interpreted as the share of the total effect that is not affected by mediating variables. The indirect effect, then, is the share of the total effect that is confounded by mediating variables. With the KHB decomposition method, it is possible to test whether confounding is significant (Kohler, Karlson, & Holm, 2011).

Furthermore, reporting the results of the KHB method in terms of the average partial effects (APEs) also allows, in this study, for comparing the coefficients of place of residence and family background characteristics with respect to their effects on educational outcomes (Mood, 2010).

To assess the extent to which ethnic minority students' performance lags behind that of majority students during the upper-secondary school years, the KHB decomposition was used to test *Hypothesis #1: Family background and place of residence are two factors contributing to the differences in educational attainment between ethnic minority students and majority students.*

For this analysis, I used ethnic minority (yes, no) as the key explanatory variable; mediators included features of the respondent's residence (geographic region and urban/rural status) and family background (household income, mother's and father's education, family structure, family dependency ratio, and sibship size). For interpretation purposes, I standardized household income quintile, education levels of father and mother, family dependency ratio, and sibship size to have mean zero and variance of unity. Specifically, I subtracted the grand mean from each respondent's score and divided this difference by the common standard deviation. Year of the survey, gender, and age were included in all models as control variables.

The analytical structure follows two steps. First, I decomposed the total effect of ethnicity (minority) on each educational outcome into a direct effect and an indirect effect associated with place of residence (region and urban). Second, I added family background characteristics to each model, decomposed the total effect into a direct effect and an indirect effect, further decomposed

the indirect effect into the individual effects of each corresponding mediator, and compared the effect sizes of these mediators, specified in terms of average partial effects. The results of the KHB method were reported in terms of the average partial effects (APEs).

A two-step approach was also used to examine which factors contributed to the increase in educational disparities between ethnic minorities and the majority that were observed after Vietnam's socioeconomic transformation. In Step 1, I also used the KHB decomposition method to examine the extent to which residential features and family characteristics mediated the impact of ethnic minority status on upper-secondary school attendance, upper-secondary school enrollment, and upper-secondary school completion by year from 1992 to 2014. In the present study, APEs were used to compare effect sizes calculated for residential factors and family background across years. Following these comparisons, Step 2 used the Student's t-test to test mean differences between ethnic minority students and majority students with respect to residential characteristics and family background in the years 1992 – 2014. These two-step analyses allow for testing *Hypothesis #2: After Vietnam's socioeconomic transformations, increases in ethnic inequality continue to exacerbate educational disparities.*

2.4. Findings

This study used the VHLSS data to examine ethnic educational disparities in Vietnam over the last twenty years since Vietnam's socioeconomic transformation began. The findings first present changes in educational outcomes between ethnic minorities and the majority over time. Next, the results of the decomposition method are reported to demonstrate factors contributing to the ethnic disparities in education. Finally, changes in the mediation effects of these factors on the relationship between minority status and educational outcomes, as well as these factors themselves that contribute to the disparities across the years, are presented.

Table 2-2 presents the results from the Student's *t* tests that were used to compare the mean differences between ethnic minorities and the majority with respect to upper-secondary school attendance, upper-secondary school enrollment, and upper-secondary school completion from 1992 to 2014. The results show that school attendance, school enrollment, and school completion differed in a statistically significant way between the ethnic minority and the majority during 1992 to 2014. Regarding the school attendance measure, in particular, the table shows that ethnic minorities experienced significant improvement during the first decade after the socioeconomic reforms were initiated; their school attendance rates increased from 14.73% in 1992 to 60.89% in 2004 — but then these dropped to 47.99% in 2014. In contrast, the attendance rates among majority students increased continuously from 24.35% in 1992 to 67.18% in 2004 and 76.16% in 2014. As a result, the majority-minority ethnic disparity in school attendance increased from 9.62% in 1992 to 6.29% in 2004, and 28.17% in 2014.

Regarding upper-secondary school enrollment, although the rates among ethnic minority students increased from 2.49% in 1992 to 29.93% in 2004 and 39.11% in 2014, the majority group enjoyed greater gains, increasing from 17.30% in 1992 to 54.32% in 2004 and 70.32% in 2014. The disparity in upper-secondary school enrollment thus increased continuously from 14.81% to 31.21%. Furthermore, differences between upper-secondary school attendance and upper-secondary school enrollment across ethnic groups show that ethnic minorities have a higher rate of grade repetition than the ethnic majority.

Finally, like the school enrollment indicator, upper-secondary school completion increased both for ethnic minority students, from 2.31% to 25.69% and 37.92%, and for majority students, from 17.52% to 48.09% and 72.54% during the same period. As a result, the disparity with respect to school completion rate also increased from 15.21% in 1992 to 34.62% in 2014.

Table 2-3 presents the results of the KHB decomposition of ethnic minority status on upper-secondary school attendance (Models 1A & 1B), upper-secondary school enrollment (Models 2A & 2B), and upper-secondary school completion (Model 3A & 3B), with mediating variables including region, urban status, household income quintile (standardized), father's education (standardized), mother's education (standardized), nuclear family (yes/no), dependency ratio (standardized), and number of siblings (standardized). The test statistics developed by Karlson et al. (2012) show direct effects, and indirect effects are highly statistically significant. While the table 2-3 presents the results of KHB decomposition in terms of the average partial effects, the coefficients are presented in the table A-1 of the Appendix.

Model 1A displays the decomposition of the total effect of ethnic minority status on school attendance when only region and urban status were used as mediators. The estimate of the total effect of ethnic minority status was -0.16, which indicated that if one were an ethnic minority student, the probability of one's attending school was 16% lower than if one were a majority student. Decomposing this effect returns a direct effect for minority status of -0.15 (that is, equivalent to 93.59% of the total effect) and an indirect effect of -0.01 (equivalent to 6.41% of the total effect). That indicates that the indirect effect of residential features only accounts for 6.41% of the total effect.

The indirect effect can be further broken down into its components as well: Northern Midlands and Mountains = -0.01 (7.83% of total effect), North-Central Coast and South-Central Coast = 0.01 (-3.20% of total effect), Central Highlands = -0.01 (6.81% of total effect), Southeast = 0.02 (-9.45% of total effect), and Mekong River Delta = 0.03 (-15.87% of total effect); urban = -0.03 (20.93% of total effect). This means that while differentials between urban and rural areas contribute to ethnic disparities in school attendance, by 20.93%, the specific

regions that negatively mediate the effect of ethnic minority status on school attendance are the Northern Midlands and Mountains and the Central Highlands.

Model 1B presents the decomposition of the effect of ethnic minority status on school attendance, after adding family background characteristics as additional mediators to Model 1A. The results show that the total effect of ethnic minority status slightly reduced to -0.15, compared to the -0.16 found in Model 1A. However, this decomposition illustrates that the total effect of ethnic minority status on school attendance (-0.15) is smaller than the indirect effect of place of residence and family background characteristics, taken jointly, on this outcome (-0.18). This means that family background and residence features contribute to ethnic disparities in school attendance, rather than ethnic minority status itself creating this disparity. Breaking down the indirect effect further shows that, in term of relative measures, household income, father's education, and mother's education are main factors contributing to the total effect of ethnic minority status on school attendance outcomes, with about 28.41%, 36.65%, and 38.06%, respectively, of the total effect. The indirect effect via residence in an urban (vs. rural) area and that of the number of siblings were 7.23% and 6.68% of the total effect.

Model 2A and Model 2B estimate the total effect of ethnic minority status on upper-secondary school enrollment with different mediators: only place of residence (Model 2A), and place of residence and family background (Model 2B). The results show that the total effect of ethnic minority status on school enrollment was not much different across the two models with respect to family background's impact: not adding family background characteristics yielded -0.26, while adding them yielded -0.25. Meanwhile, significant differences in indirect effects between Model 2A (-0.01) and Model 2B (-0.18) indicated that the total effect of ethnic minority status on upper-secondary school enrollment was mainly mediated by family background.

Particularly, Model 2B shows that, in relative measures, the effect of household income, father's education, mother's education, dependency ratio, and the number of siblings accounted for 70.76% of the total effect, and the mediation effect via urban only accounted for 5.30%, respectively.

Similar to the upper-secondary school enrollment models, Model 3A and Model 3B present the total effect of ethnic minority status on upper-secondary school completion: -0.29 when the only place of residence was included (Model 3A), and -0.27 when place of residence and family background characteristics were included together. Decomposition of these total effects yields an indirect effect close to 0 in the Model 3A including only place of residence, and an indirect effect of -0.17 (equivalent to 63.96% of the total effect) in the Model 3B including place of residence and family background. This result indicates that family background accounts for about 63.96% of the total effect of ethnic minority status on school completion.

In sum, table 2-3 shows that the total effect of ethnic minority status on upper-secondary school attendance was lower than its effect on school enrollment and school completion when either family background characteristics were included or the place of residence as mediators and gender, age, and survey years are controlled. The decomposition estimates displayed in Table 2-3 suggest that the indirect effect via geographic region and urban status was minor, while the indirect effect via family background was a major contributor to the total apparent effect of ethnic minority status on these three educational outcome measures at the upper-secondary level.

I transition now to examining changes in mediation effects over time. Tables 2-4, 2-5, and 2-6 present the decomposition of the total effect of ethnic minority status on upper-secondary school attendance, upper-secondary school enrollment, and upper-secondary school completion into a direct effect vs. an indirect effect via residence and family background

characteristics for the 1992 – 2014 data, in terms of average partial effects. The coefficients are also presented in the table A-2, table A-3, and the table A-4 of the Appendix. In general, the total effect decreased in the years 1992 to 2014, which indicates that educational disparities between ethnic minorities and the majority increased over time.

Specifically, the estimates displayed in Table 2-4 indicate that the total effect of ethnic minority status on school attendance fluctuated around -0.10 in the 1990s, continued to decrease during the 2000s, and was -0.25 in 2014. Stated in terms of probability, the estimates indicate that the probability of attending school for an ethnic minority student decreased from 10% lower than for majority students in 1990, to 25% less (than for the majority) in 2014. Likewise, the estimates displayed in Table 2-5 indicate that the probability of an ethnic minority student enrolling in upper-secondary school decreased from 24% lower in 1990 to 27% lower (compared to the majority) in 2014. Finally, Table 2-6 illustrates that the probability of an ethnic minority student completing upper-secondary school worsened as well: 16% lower than the majority in 1992, to 30% lower in 2014.

Breaking down the mediation effects of residential features and family background characteristics on the total effect of ethnic minority status with regards to all of these education-related outcomes during the years 1992 to 2014 also illustrates changes in each mediator's contribution to the total effect over time. Since the results of the decomposition in Table 2-3 reveal that the indirect effects of mediating variables — namely, geographic region, urban status, family structure, dependency ratio, and number of siblings had only a minor impact, contributing less than 10% of the total effects, the critical mediators are household income, father's education, and mother's education.

Figure 2-1, Figure 2-2, and Figure 2-3 only show the contribution of household income, father's education, and mother's education to the total effect of ethnic minority status on school attendance, school enrollment, and school completion at the upper-secondary level from 1992 to 2014. In general, these three figures also show that from 1992 to 2014, while the contributions of household income to the total effect of ethnic minority status for all three educational outcomes decreased, the indirect effects via father's education and mother's education increased; in other words, parents' education levels became more important in explaining these disparities in the years since the reforms. As a result, the relative importance of household income to these outcomes diminished; whereas household income once explained more of this disparity than did parents' respective educations until 2004, this trend reversed in the decade that followed.

In terms of numbers, the contribution of household income to the total effect of ethnic minority status on school attendance increased from 53.49% in 1992 to its peak of 256.11% in 1998, then dropping in subsequent years to 14.28 % by 2014. A similar pattern exists for upper-secondary school enrollment and completion: respectively, household income's contribution to the effect of minority status increased from 21.55% and 27.61% in 1992, peaked at 37.36% and 46.43% in 1998, and decreased to 11.41% and 11.94% in 2014. Meanwhile, the indirect effect via parents' (joint) education on school attendance increased from 26.47% in 1992 to 66.68% in 2014; and on school enrollment, increased from 11.40% to 55.84%. On school completion, the relative effect of parents' education increased from 15.45% in 1992 to 48.80% in 2014.

Table 2-7 presents changes in quintile distribution for ethnic minority and majority youths by VHLSS years. While the majority group's income is more evenly distributed across quintiles, ethnic minorities are mostly poor and have seen an increasing prevalence of relative poverty over time. This study's proportion of ethnic minority households in the lowest quintile

increased from 28.03% to 45.08% in 2014, while it decreased among the majority group from 11.41% to 7.94% in the same period. This trend clearly indicates ethnic impoverishment *as well as an exacerbation* of ethnic-based income inequality over the last approximately 20 years.

Table 2-8 presents education-level distributions for ethnic minorities and the majority. In general, ethnic differentials in parental education are also evident. After over 20 years, majority households wherein the father or mother lacked any formal education (i.e., he/she had never attended school) declined in prevalence from 47% to 12.91% and 62% to 15.84%, respectively, while these numbers dropped much less precipitously among ethnic minorities: 67.23% to 44.57% for fathers and 81.34% to 61.38% for mothers. Furthermore, whereas 25.32% of majority fathers and 17.54% of majority mothers completed upper-secondary education in 2014, these numbers were only 6.35% and 3.06%, respectively, for ethnic minorities. Note that these latter numbers are lower *even than the 1992 percentages* for majority parents. These numbers, too, indicate that ethnic inequality in parental education has persisted over the decades since the socioeconomic reforms were implemented.

2.5. Discussion

The goal of this study was to understand why ethnic minorities lag behind in upper-secondary education and which factors might be contributing to these ethnic educational disparities (and, in some cases, even to their exacerbation) since Vietnam's socioeconomic transformations. Using data from the VHLSS collected from 1992 to 2014, this study presents the recent trend of ethnic educational disparities in Vietnam and confirms the hypothesis that family background and place of residence are two factors contributing to these disparities. The study also provides compelling evidence that exacerbations in ethnic inequality (e.g., household income, educational attainment in parents' generation) since the inception of Vietnam's

socioeconomic transformations are exacerbating ethnic *educational* disparities among young generations in turn.

First, after earlier literature in Vietnam showed that the educational gap between ethnic minorities and the majority increased in the period from 1992 to 2008 (World Bank, 2011), this study confirms that ethnic disparities at the upper-secondary level continued increasing through 2014 across all three outcome measures: school attendance, school enrollment, and school completion. Overall, the gap between minority and majority students in school attendance rates, and net enrollment rates and completion rates at the upper-secondary level increased, respectively, from 9.62%, 14.81%, and 15.21% in 1992 to 28.17%, 31.21%, and 34.6% in 2014.

While ethnic minority's upper-secondary school net enrollment rate and completion rate improved slowly, their upper-secondary attendance rate decreased continuously since 2004. This implies that contemporary policies promoting ethnic minority's schooling upper-secondary school attendance through financial assistance — such as school fee exemptions, credits for students, scholarships, stipends and/or food, and conditional cash payments to income-poor households — have not been working effectively. The drops in upper-secondary school attendance among ethnic minorities not only widen the ethnic gap in education but also threaten improvements in upper-secondary school enrollment and completion for minorities in the near future. Thus, without any immediate, effective interventions, ethnic disparities in upper-secondary education will probably grow much wider in the coming years.

Second, this study finds supporting evidence for the hypothesis that family background contributes (though not significantly with respect to place of residence) to the educational disparities between ethnic minority and majority students. While family background characteristics accounted for over 90% of the ethnic gap in school attendance, over 70% of the

gap in school enrollment, and over 60% of the gap in school completion, features of residence accounted for a *combined* total of less than 10% of the gap in each of these three measures. This finding differs from evidence found in China — a country that experienced similar socioeconomic and political changes in the 1980s — where regional features accounted for one-third of the ethnic educational gap, and family background accounted for over half (Hannum, 2002). Given that existing studies show that residing in disadvantaged areas is a significant barrier to Vietnam's ethnic minorities' upper-secondary educational attainment (Baulch et al., 2010; Taylor, 2004; World Bank, 2011), the present study's findings can perhaps be explained by the fact that the government has taken efforts to expand upper-secondary schools, especially boarding schools, and to distribute financial assistance geared toward reducing the negative effects of residing in rural, remote, and mountainous areas.

Third, the present study also provides supporting evidence for the hypothesis that after Vietnam's socioeconomic transformation, increases in ethnic inequality have exacerbated ethnic educational disparities in particular. Three arguments support this hypothesis. First, household income and parental education, which differ significantly between ethnic minority and majority students, emerged here as two main contributors to ethnic educational disparities: combined household income, father's education, and mother's education accounted for over 90%, 70%, and 60% of the ethnic gap in school attendance, school enrollment, and school completion, respectively. Second, the ethnic gap in household income and parental education increased *after* the socioeconomic transformations: while the percentage of ethnic minority households in the lowest income quintile increased from 28.03% in 1992 to 45.08% in 2014, the majority's percentage in the same, most-disadvantaged quintile decreased from 11.41% to 7.49% over the same period. Similarly, whereas the percentages of majority students' mothers and fathers who

completed upper-secondary school increased between 1992 and 2014 from 3.12% and 7.29% to 17.54% and 25.32% (respectively), these proportions among ethnic minorities *as late as 2014* were 3.06% and 6.35% — even lower than the proportions among the majority group over 20 years earlier.

Fourth, with respect to the degree to which household income and parental education might contribute to these ethnic educational disparities, the current study also found that while the substantive impact of household income decreased from 1992 – 2014, the impact of parental education rose. This finding can be explained in two different ways. As one explanation, we can look to the high effect of household income on these disparities during the first decade after the socioeconomic reforms: this phenomenon reflects that ethnic minorities were more sensitive and vulnerable than the majority to the 1990 shift from a free educational system to a fee educational system. Ethnic minorities' educational investment is seemingly more affected by short-term liquidity constraints. Hence, sudden adjustments that increased school expenses immediately reduced upper-secondary school attendance. In other words, compared to the majority students, ethnic minority students suffered more from the educational reforms, even though minority students were also eligible for total or partial tuition exemption and other financial support.

Another possible explanation is that perhaps, the declining importance of household income in explaining educational disparities in the second decade after the socioeconomic transition reflects a certain success on the government's part: namely, the government's reforms might have reduced the long-lasting effects of household poverty on ethnic disparities in upper-secondary education. It may be that, as the government began offering support to families to offset their lack of financial resources (Ministry of Planning and Investment, 2015; World Bank, 2011), family income by itself became less consequential for the ethnic educational disparities,

even though broader ethnic income inequality remains.

There is an important policy implication for the finding that the impact of parental education on the next generation's ethnic educational disparities has grown and even begun to surpass that of household income. The World Bank (2011) suggests that if long-term factors, such as parental education, are more important than short-term liquidity, then effective interventions should emphasize promoting public campaigns for awareness of the importance and benefits of education.

Finally, there are several limitations of this paper that should be addressed in future research. First, accounting for urban vs. rural status and the geographic region only captures a small percentage of the contextual effects on educational attainment. Since school access and school quality differ between ethnic minority and majority students in Vietnam, though, then more specific measures, such as distance to school, school facilities, and teacher quality, should be included in analytical models that aim to examine ethnic educational disparities. Similarly, community poverty concentration and educational attainment also differ within rural or urban areas. Of course, another important limitation of this study is its grouping-together of all ethnic minorities within Vietnam. This analytical choice may have masked any disparities due to variance across Vietnam's ethnic minority groups.

2.6. Conclusion

This paper has found that ethnic educational disparities increased during the period from 1992 – 2014. This unexpected outcome is evident across all three indicators examined: upper-secondary school attendance, upper-secondary school enrollment, and upper-secondary school completion. While place of residence contributes slightly to these disparities, family background factors — which include household income, father's education, and mother's education — are

particularly critical determinants of this inequality in upper-secondary education. This study has also found that the increase in overall ethnic inequality in the wake of the socioeconomic reforms has seemingly intensified these ethnic educational disparities. Finally, the findings reveal changes in the impacts of household income and parental education on this ethnic education gap during the period from 1992 – 2014. Overall, the current study's findings suggest that in addition to improving existing financial support programs that target ethnic minorities, effective interventions to promote awareness of the value of education will be important in reducing Vietnam's ethnic gap in upper-secondary education.

Table 2-1. Descriptive statistics of some main variables (VHLSS 1992, 1998, 2002, 2004, 2006, 2008, 2010, 2012, and 2014)

Variable	1992 (N=3074)	1998 (N=3962)	2002 (N=15076)	2004 (N=4630)	2006 (N=4701)	2008 (N=4409)	2010 (N=3639)	2012 (N=3397)	2014 (N=2800)
<u>Dependence variables</u>									
School attendance	0.23	0.54	0.6	0.66	0.68	0.69	0.67	0.7	0.69
School enrollment	0.16	0.39	0.33	0.49	0.55	0.54	0.59	0.61	0.61
School completion	0.14	0.16	0.33	0.4	0.45	0.53	0.56	0.57	0.6
<u>Independence variables</u>									
Minority	0.12	0.13	0.17	0.18	0.19	0.19	0.21	0.22	0.23
Household income quintile									
1 st	0.14	0.14	0.09	0.12	0.13	0.14	0.15	0.16	0.17
2 nd	0.16	0.18	0.18	0.21	0.2	0.2	0.21	0.21	0.22
3 rd	0.21	0.21	0.23	0.22	0.23	0.23	0.23	0.23	0.23
4 th	0.25	0.24	0.26	0.24	0.23	0.23	0.22	0.21	0.2
5 th	0.24	0.23	0.24	0.21	0.21	0.2	0.19	0.19	0.18
Father's educational level									
Less than primary	0.5	0.4	0.24	0.21	0.18	0.2	0.21	0.2	0.21
Primary	0.26	0.25	0.29	0.27	0.29	0.26	0.25	0.26	0.27
Lower-secondary	0.17	0.25	0.32	0.36	0.36	0.36	0.34	0.34	0.32
Upper-secondary	0.07	0.1	0.15	0.16	0.17	0.18	0.2	0.2	0.2

Mother's educational level									
<i>Less than primary</i>	0.64	0.5	0.36	0.32	0.28	0.26	0.27	0.26	0.28
<i>Primary</i>	0.2	0.24	0.27	0.25	0.27	0.28	0.28	0.29	0.28
<i>Lower-secondary</i>	0.13	0.2	0.28	0.32	0.32	0.32	0.3	0.29	0.3
<i>Upper-secondary</i>	0.03	0.06	0.09	0.11	0.13	0.14	0.15	0.16	0.14
Nuclear family structure	0.76	0.77	0.83	0.88	0.83	0.81	0.83	0.82	0.81
Dependency ratio	0.28	0.25	0.21	0.19	0.17	0.16	0.15	0.15	0.15
Sibship size	3.85	3.51	3.4	3.23	3.02	2.82	2.65	2.56	2.43
Urban	0.21	0.25	0.2	0.21	0.21	0.22	0.24	0.24	0.26
Region									
<i>Red River Delta</i>	0.19	0.15	0.21	0.2	0.18	0.18	0.2	0.18	0.19
<i>Northern Midlands and Mountains</i>	0.15	0.14	0.2	0.21	0.21	0.21	0.2	0.2	0.22
<i>North-Central Coast and South-Central</i>	0.26	0.23	0.2	0.2	0.22	0.22	0.26	0.26	0.24
<i>Central Highlands</i>	0.03	0.08	0.06	0.07	0.08	0.09	0.08	0.09	0.09
<i>South east</i>	0.13	0.17	0.11	0.12	0.12	0.13	0.1	0.1	0.1
<i>Mekong River Delta</i>	0.24	0.23	0.22	0.2	0.19	0.17	0.16	0.17	0.16
Female	0.5	0.5	0.46	0.47	0.47	0.46	0.48	0.48	0.49
Age	17.36	17.3	17.29	17.33	17.32	17.37	17.44	17.53	17.57

Table 2-2. Changes in educational outcomes at upper-secondary education between ethnic minorities and the majority during 1992 - 2014

Educational outcomes	1992	1998	2002	2004	2006	2008	2010	2012	2014
Attendance rates (AT) (aged from 15-18)									
Minority	14.73	49.13	51.27	60.89	58.84	56.07	47.00	49.67	47.99
Majority	24.35	53.58	62.41	67.18	70.89	73.48	74.40	76.15	76.16
Diff (Majority - Minority)	9.62***	4.45***	11.14***	6.29***	12.05***	17.41***	27.40***	26.48***	28.17***
Net enrollment rates (NER) (aged from 15-18)									
Minority	2.49	13.6	15.03	29.93	34.55	34.22	36.06	37.76	39.11
Majority	17.3	41.08	37.46	54.32	60.91	60.99	67.66	68.82	70.32
Diff (Majority - Minority)	14.81***	27.48***	22.43***	24.39***	26.36***	26.77***	31.6***	31.06***	31.21***
Late enrolled, grade repeated (AT-NER)									
Minority	12.24	35.53	36.24	30.96	24.29	21.85	10.94	11.91	8.88
Majority	7.05	12.5	24.95	12.86	9.98	12.49	6.74	7.33	5.84
Diff (Majority - Minority)	-5.19	-23.03	-11.29	-18.1	-14.31	-9.36	-4.2	-4.58	-3.04
Completion rates (CR) (aged from 18-20)									
Minority	2.31	6.84	17.27	25.69	25.17	29.99	31.12	30.72	37.92
Majority	17.52	16.72	42.54	48.09	56.18	61.97	68.72	69.86	72.54
Diff (Majority - Minority)	15.21***	9.88***	25.27	22.4***	31.01***	31.98***	37.6***	39.14***	34.62***

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 2-3. APE Decomposition of the total effect of the minority on educational outcomes into the direct effect and the indirect effect via residential factors and family background, controlling for gender, age, and years of the survey.

	Upper-secondary school attendance		Upper-secondary school enrollment		Upper-secondary school completion	
	Model 1A	Model 1B	Model 2A	Model 2B	Model 3A	Model 3B
<u>Coefficients</u>						
Total effect	-0.16***	-0.15***	-0.26***	-0.25***	-0.29***	-0.27***
Direct effect	-0.15***	0.03*	-0.25***	-0.07***	-0.28***	-0.10***
Indirect effect	-0.01*	-0.18***	-0.01***	-0.18***	0.00***	-0.17***
Indirect effect via:						
Region						
<i>Northern Midlands and Mountains</i>	-0.01	0.00	0.00	-0.01	-0.04	-0.02
<i>North-Central Coast and South-Central</i>	0.01	0.00	0.01	0.00	0.01	0.00
<i>Central Highlands</i>	-0.01	0.00	-0.02	-0.01	-0.02	-0.01
<i>Southeast</i>	0.02	0.00	0.02	0.00	0.03	0.01
<i>Mekong River Delta</i>	0.03	0.00	0.03	0.01	0.04	0.01
Urban	-0.03	-0.01	-0.04	-0.01	-0.04	-0.01
Household income		-0.04		-0.04		-0.04
Father education		-0.06		-0.06		-0.05
Mother education		-0.06		-0.05		-0.05
Nuclear family		0.00		0.00		0.00
Dependency ratio		0.00		0.00		0.00
Sibling		-0.01		-0.02		-0.02
<u>Relative measures</u>						
Mediation percentage	6.41	116.50	3.97	72.06	1.54	63.14
<u>Mediation effect via:</u>						
Region						
<i>Northern Midlands and Mountains</i>	7.83	-3.05	-1.87	2.73	12.44	6.19
<i>North-Central Coast and South-Central</i>	-3.20	2.41	-3.12	0.29	-3.45	-0.31

<i>Central Highlands</i>	6.81	0.23	6.34	2.52	7.36	3.25
<i>Southeast</i>	-9.45	-0.78	-7.24	-2.01	-8.82	-3.05
<i>Mekong River Delta</i>	-15.87	-3.10	-11.41	-3.80	-12.84	-4.47
Urban	20.93	7.23	14.11	5.30	12.48	4.54
Household income		28.41		17.91		14.22
Father education		36.65		22.65		20.10
Mother education		38.06		21.72		19.61
Nuclear family		-0.09		-0.56		1.07
Dependency ratio		2.99		0.93		1.43
Sibling		6.68		7.55		6.01

*** p<0.001, ** p<0.01, * p<0.05.

Table 2-4. Changes in effect size 1992 – 2014: APE Decomposition of the total effect of the minority on upper-secondary school attendance into direct effect and an indirect effect via residential factors and family background, controlling for gender, age, and years of the survey

	1992	1998	2002	2004	2006	2008	2010	2012	2014
<u>Coefficients</u>									
Total effect	-0.10***	-0.05	-0.11***	-0.06**	-0.11***	-0.16***	-0.24***	-0.22***	-0.25***
Direct effect	0.01	0.12***	0.11***	0.09**	0.05*	0.03	-0.06*	-0.09**	-0.07*
Indirect effect	-0.12***	-0.17***	-0.22***	-0.15***	-0.16***	-0.19***	-0.18***	-0.13***	-0.18***
Indirect effect via:									
Region									
<i>Northern Midlands and Mountains</i>	-0.01	0.01	0.02	0.04	0.02	-0.02	0.00	0.02	0.01
<i>North-Central Coast and South-Central</i>	0.00	-0.01	-0.02	-0.01	-0.01	-0.01	0.00	0.00	0.00
<i>Central Highlands</i>	-0.01	0.01	0.01	0.01	0.00	0.00	0.00	-0.01	-0.01
<i>Southeast</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
<i>Mekong River Delta</i>	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.01	0.01
Urban	-0.01	-0.01	-0.01	0.00	-0.01	-0.02	-0.02	0.00	0.00
Household income	-0.05	-0.12	-0.06	-0.04	-0.03	-0.02	-0.01	-0.02	-0.04
Father education	-0.01	-0.02	-0.05	-0.05	-0.07	-0.07	-0.09	-0.07	-0.07
Mother education	-0.01	-0.04	-0.06	-0.05	-0.05	-0.05	-0.06	-0.07	-0.10
Nuclear family	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	-0.01
Dependency ratio	-0.01	0.00	-0.02	-0.01	-0.01	-0.01	0.01	0.00	0.01
Sibling	0.00	0.00	-0.02	-0.02	-0.03	-0.01	-0.01	-0.01	-0.02
<u>Relative measures</u>									
Mediation percentage	117.42	360.04	203.44	241.11	147.49	120.61	74.85	57.71	74.73
Mediation effect via:									
Region									

<i>Northern Midlands and Mountains</i>	14.44	-13.81	-14.46	-69.68	-16.44	10.22	-0.78	-7.89	-5.39
<i>North-Central Coast and South-Central</i>	-0.94	19.08	15.29	17.96	4.95	3.28	-0.09	-0.89	-0.06
<i>Central Highlands</i>	8.53	-18.48	-8.11	-11.61	-0.05	-0.23	2.00	2.39	3.96
<i>Southeast</i>	-2.70	-10.41	1.08	3.89	-3.22	-0.55	-2.10	-1.99	-4.09
<i>Mekong River Delta</i>	-3.71	-11.76	-2.35	-0.60	-7.07	-3.06	-4.13	-5.99	-4.22
Urban	13.96	28.18	5.83	8.02	6.74	10.24	8.39	-1.05	-1.36
Household income	53.49	256.11	57.25	71.63	28.34	12.13	5.76	8.40	14.28
Father education	12.97	35.77	50.69	76.66	60.38	46.35	38.26	29.15	26.71
Mother education	13.50	81.15	56.97	90.01	46.09	29.90	23.61	32.41	39.97
Nuclear family	0.31	-11.65	3.13	2.08	-2.01	-0.88	1.04	-0.98	2.51
Dependency ratio	7.12	7.80	15.81	17.05	6.69	4.28	-2.78	-1.53	-4.88
Sibling	0.45	-1.94	22.31	35.69	23.08	8.93	5.66	6.36	7.30

*** p<0.001, ** p<0.01, * p<0.05

Table 2-5. Changes in effect size 1992 – 2014: APE Decomposition of the total effect of the minority on upper-secondary school enrollment into direct effect and an indirect effect via residential factors and family background, controlling for gender, age, and years of the survey

	1992	1998	2002	2004	2006	2008	2010	2012	2014
<u>Coefficients</u>									
Total effect	-0.24***	-0.29***	-0.25***	-0.24***	-0.25***	-0.25***	-0.28***	-0.27***	-0.27***
Direct effect	-0.13***	-0.10**	-0.05**	-0.06*	-0.04	-0.03	-0.10***	-0.13***	-0.09**
Indirect effect	-0.11***	-0.19***	-0.20***	-0.18***	-0.21***	-0.22***	-0.18***	-0.14***	-0.18***
Indirect effect via:									
Region									
<i>Northern Midlands and Mountains</i>	-0.03	-0.02	0.00	0.01	-0.01	-0.02	0.01	0.01	-0.01
<i>North-Central Coast and South-Central</i>	0.01	0.00	0.00	-0.01	0.00	0.00	0.00	0.00	0.00
<i>Central Highlands</i>	-0.03	0.00	0.00	0.00	-0.01	0.00	-0.01	-0.01	-0.01
<i>Southeast</i>	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01
<i>Mekong River Delta</i>	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.02	0.02
Urban	-0.01	-0.02	-0.01	-0.01	-0.01	-0.01	-0.02	0.00	0.00
Household income	-0.05	-0.11	-0.06	-0.04	-0.04	-0.02	-0.02	-0.02	-0.03
Father education	-0.01	-0.02	-0.05	-0.05	-0.07	-0.08	-0.09	-0.07	-0.06
Mother education	-0.01	-0.04	-0.05	-0.05	-0.06	-0.05	-0.06	-0.07	-0.09
Nuclear family	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dependency ratio	0.00	0.00	0.00	-0.01	-0.01	0.00	0.01	0.00	0.01
Sibling	0.00	-0.01	-0.03	-0.02	-0.03	-0.02	-0.02	-0.02	-0.02
<u>Relative measures</u>									
Mediation percentage	46.57	64.42	80.87	75.59	81.92	87.64	64.68	52.30	67.30
Mediation effect via:									
Region									

<i>Northern Midlands and Mountains</i>	10.72	6.26	-0.58	-5.59	4.19	8.91	-4.57	-4.46	3.01
<i>North-Central Coast and South-Central</i>	-5.08	1.44	0.69	2.89	-0.39	0.92	0.04	-0.92	-0.05
<i>Central Highlands</i>	10.88	-0.65	1.59	0.29	2.93	0.53	2.16	3.26	4.09
<i>Southeast</i>	-6.20	-2.71	-0.34	-0.06	-1.88	-1.31	-0.88	-2.83	-5.40
<i>Mekong River Delta</i>	-4.44	-2.79	-1.39	-3.20	-5.91	-1.36	-3.77	-5.95	-6.60
Urban	5.52	5.23	2.18	3.90	2.51	4.63	7.47	-0.35	0.39
Household income	21.55	37.36	22.40	17.56	15.88	9.51	5.47	8.35	11.41
Father education	5.38	6.18	21.34	22.81	28.02	33.46	31.84	26.71	21.51
Mother education	6.12	13.49	20.22	22.76	22.20	21.29	21.30	24.65	34.33
Nuclear family	-0.03	-2.39	0.51	-0.09	-0.63	0.29	1.08	-1.07	0.77
Dependency ratio	1.82	1.05	1.96	4.44	2.52	1.26	-2.50	-1.35	-4.73
Sibling	0.32	1.95	12.29	9.86	12.48	9.52	7.04	6.27	8.56

*** p<0.001, ** p<0.01, * p<0.05

Table 2-6. Changes in effect size 1992 – 2014: APE Decomposition of the total effect of the minority on upper-secondary school completion into direct effect and an indirect effect via residential factors and family background, controlling for gender, age, and years of the survey

	1992	1998	2002	2004	2006	2008	2010	2012	2014
<u>Coefficients</u>									
Total effect	-0.16***	-0.15***	-0.29***	-0.26***	-0.32***	-0.32***	-0.32***	-0.32***	-0.30***
Direct effect	-0.11*	-0.03	-0.06*	-0.08**	-0.11***	-0.14***	-0.10***	-0.10***	-0.09***
Indirect effect	-0.04***	-0.12***	-0.24***	-0.17***	-0.21***	-0.18***	-0.22***	-0.22***	-0.22***
Indirect effect via:									
Region									
<i>Northern Midlands and Mountains</i>	-0.02	-0.03	-0.01	0.02	0.00	-0.02	-0.03	-0.05	-0.03
<i>North-Central Coast and South-Central</i>	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
<i>Central Highlands</i>	⁻¹	-0.01	0.00	0.00	0.00	0.00	-0.01	-0.02	-0.02
<i>Southeast</i>	0.02	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.02
<i>Mekong River Delta</i>	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.01
Urban	-0.01	-0.01	-0.01	-0.02	-0.01	-0.02	-0.02	-0.01	0.00
Household income	-0.04	-0.07	-0.08	-0.05	-0.04	-0.02	-0.01	0.00	-0.04
Father education	-0.01	-0.01	-0.06	-0.04	-0.07	-0.07	-0.08	-0.09	-0.06
Mother education	-0.01	-0.02	-0.05	-0.05	-0.06	-0.04	-0.07	-0.07	-0.09
Nuclear family	0.00	0.01	0.00	-0.01	-0.01	0.00	-0.01	0.00	-0.01
Dependency ratio	0.00	0.00	-0.01	-0.01	-0.01	0.00	-0.01	0.00	0.01
Sibling	0.01	0.00	-0.03	-0.02	-0.03	-0.03	-0.01	-0.02	-0.02
<u>Relative measures</u>									
Mediation percentage	29.85	78.24	80.18	67.41	66.23	56.64	68.66	67.23	71.80
Mediation effect via:									
Region									

¹ Since small sample in Central Highlands (2.3% of the total sample) causes convergence not achieved by Stata, Central Highlands was eliminated in the analysis.

<i>Northern Midlands and Mountains</i>	13.51	16.21	3.18	-9.22	-0.73	6.31	9.12	14.25	10.31
<i>North-Central Coast and South-Central</i>	-5.40	-1.86	0.56	1.44	1.14	-0.28	-0.25	-1.58	-1.26
<i>Central Highlands</i>	-	4.79	1.21	1.04	0.42	1.20	2.05	5.03	5.36
<i>Southeast</i>	-14.36	-3.57	-1.15	-2.32	-0.11	-3.60	-3.84	-2.50	-5.49
<i>Mekong River Delta</i>	-5.13	-7.54	-1.92	-2.20	-3.84	-5.33	-4.14	-5.24	-4.05
Urban	4.49	5.00	1.76	5.87	2.36	4.83	5.75	2.29	0.37
Household income	27.61	46.43	26.22	20.40	11.33	6.95	3.36	0.04	11.94
Father education	6.16	8.46	19.48	15.20	21.63	20.92	24.73	27.55	18.36
Mother education	9.29	11.45	16.62	19.68	19.77	14.04	22.78	22.26	30.44
Nuclear family	0.09	-4.26	1.32	3.66	1.70	0.88	2.60	0.08	3.53
Dependency ratio	0.48	1.81	2.62	4.80	3.95	1.27	2.32	0.04	-3.46
Sibling	-6.88	1.33	10.28	9.05	8.60	9.43	4.17	5.01	5.75

*** p<0.001, ** p<0.01, * p<0.05

Figure 2-1. The contribution of household income, father education, and mother education to the total effect of ethnic minority status on school attendance, from 1992 to 2014.

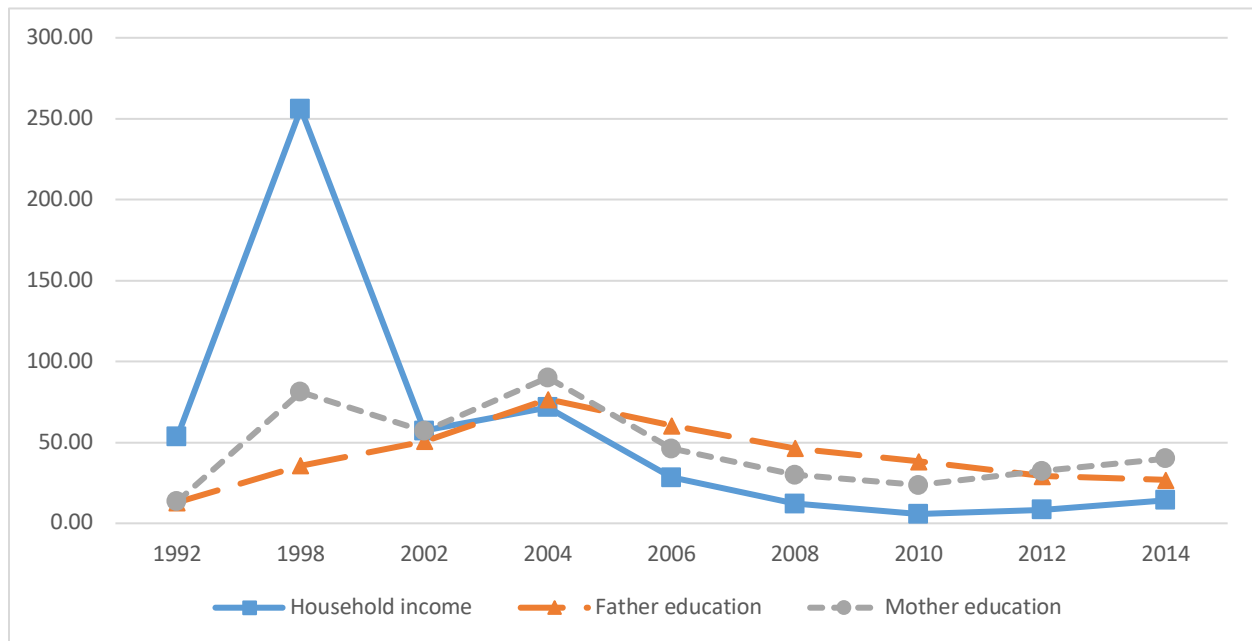


Figure 2-2. The contribution of household income, father education, and mother education to the total effect of ethnic minority status on upper-secondary school enrollment, from 1992 to 2014

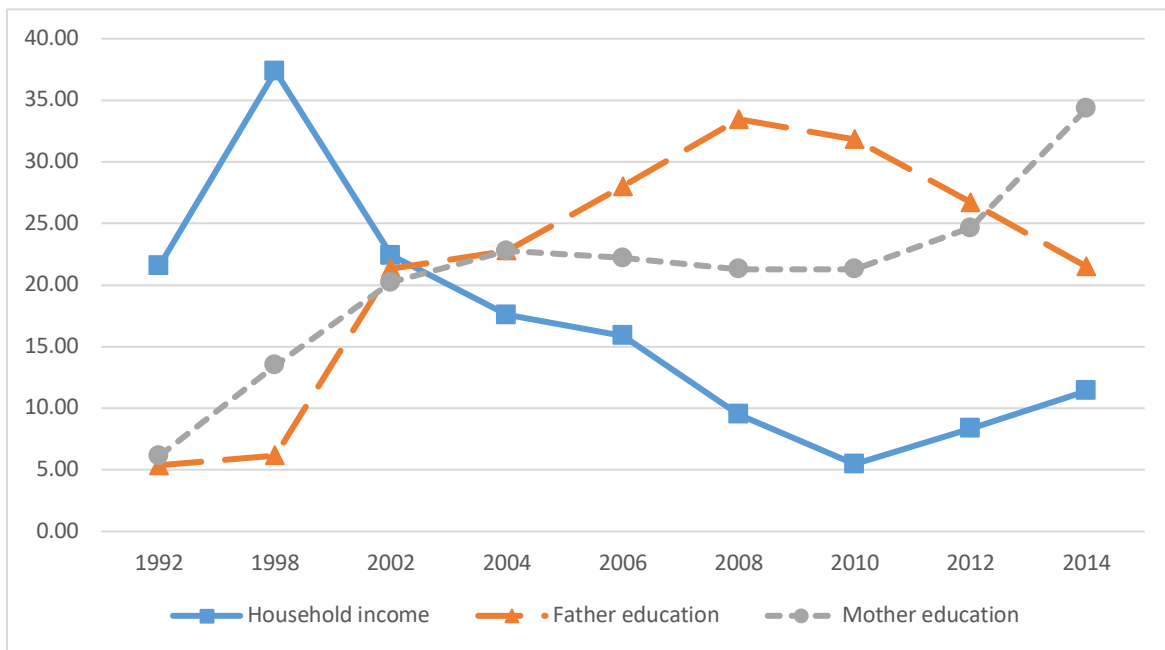


Figure 2-3. The contribution of household income, father education, and mother education to the total effect of ethnic minority status on upper-secondary school completion, from 1992 to 2014

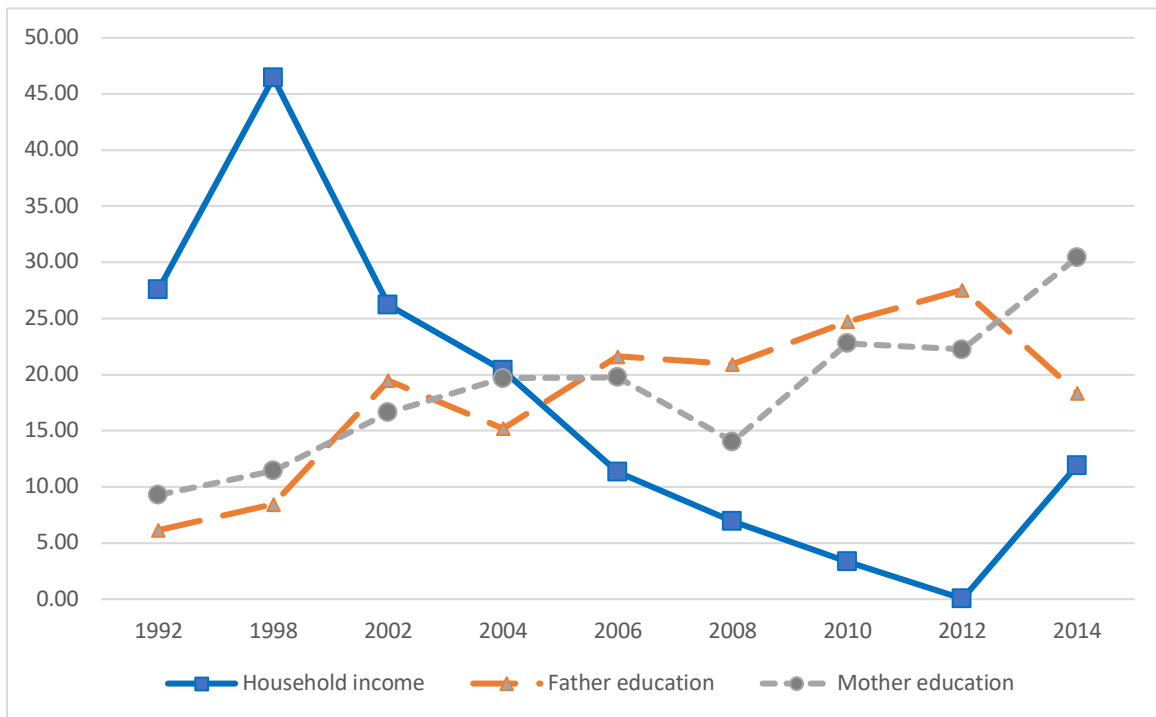


Table 2-7. Changes in quintile distribution for ethnic minorities and the majority from 1992 to 2014

Year/Ethnicity Quintile	1992		1998		2002		2004		2006		2008		2010		2012		2014	
	Majority	Minority	Majority	Minority	Majority	Minority	Majority	Minority	Majority	Minority	Majority	Minority	Majority	Minority	Majority	Minority	Majority	Minority
1st	11.41	28.03	11.57	44.64	7.43	20.30	8.49	26.72	9.27	28.41	10.77	26.17	9.13	36.38	7.94	40.13	7.94	45.08
2nd	15.23	25.33	17.62	30.47	16.58	26.18	19.40	29.76	18.18	29.83	17.57	31.55	18.51	29.91	17.93	31.1	18.35	31.1
3rd	20.54	23.74	22.27	11.79	21.49	27.00	22.11	21.66	22.62	24.96	22.42	23.03	22.22	23.11	25.39	14.92	26.75	12.51
4th	26.41	13.85	25.44	11.53	26.09	18.44	25.39	15.46	25.04	11.21	25.32	14.91	25.48	8.08	24.81	9.72	24.72	7.41
5th	26.40	9.05	23.10	1.57	28.42	8.07	24.60	6.40	24.89	5.59	23.92	4.34	24.66	2.53	23.94	4.12	22.23	3.9

Table 2-8. Changes in distribution of parental education for ethnic minorities and the majority from 1992 to 2014

Year	1992		1998		2002		2004		2006		2008		2010		2012		2014	
Ethnicity	Majority	Minority	Majority	Minority	Majority	Minority	Majority	Minority	Majority	Minority	Majority	Minority	Majority	Minority	Majority	Minority	Majority	Minority
Father education																		
<i>Less than primary</i>	47.91	67.23	35.81	54.8	19.63	45.99	16.49	37.56	13.15	39.65	14.1	39.02	12.72	46.57	12.23	44.44	12.91	44.57
<i>Primary</i>	27.08	18.2	24.74	21.51	27.05	29.98	25.29	26.7	26.53	34.22	24.28	28.74	24.57	26.83	25.26	25.12	24.67	31.91
<i>Lower-secondary</i>	17.71	8.73	28.4	15.34	36.17	18.29	39.19	29.66	40	22.21	39.92	24.73	38.95	19.53	37.68	24.8	37.10	17
<i>Upper-secondary</i>	7.29	5.83	11.05	8.35	17.14	5.74	19.03	6.08	20.42	3.92	21.7	7.51	23.76	7.07	24.83	5.64	25.32	6.35
Mother education																		
<i>Less than primary</i>	62	81.34	44.91	68.71	29.07	61.19	24.69	51.66	21.52	56.3	19.14	52.34	17.54	58.21	16.25	55.58	15.84	61.38
<i>Primary</i>	20.85	13.61	24.58	18.59	27.69	21.88	25.8	21.97	27.31	20.47	27.82	24.5	28.79	22.13	29.86	23.79	28.63	24.62
<i>Lower-secondary</i>	14.04	4.32	24.06	11.78	31.88	13.43	35.73	22.43	35.76	19.02	37.05	17.27	35.32	14.47	35.14	15.23	37.99	10.94
<i>Upper-secondary</i>	3.12	0.74	6.44	0.92	11.36	3.5	13.78	3.94	15.41	4.2	15.99	5.89	18.34	5	18.75	5.4	17.54	3.06

Chapter 3. Ethnic Minority Educational Success: Understanding Accomplishments in Challenging Settings

3.1. Introduction

Vietnam has implemented several programs to promote the educational success of ethnic minority students during the past two decades. Despite achieving significant progress at the primary and the lower-secondary level, the academic achievement of Vietnam's ethnic minority students continues to lag behind that of majority students at the upper-secondary school level. Not only has this educational disparity persisted, but it has increased over time. In particular, the ethnic disparity with respect to net enrollment rates at the upper-secondary level increased from 21.4% in 1992 to 37.6% in 2012, and the completion rate disparity increased from 10.4% to 34.7% in the same period (World Bank, 2011). This disparity highlights the need for educators and parents to understand the challenges that lay in the path of ethnic minority students.

A number of recent studies in Vietnam have identified many of the challenges that ethnic minority students face. These challenges include socioeconomic disadvantage, long distances to school, poor school quality, and linguistic and cultural barriers (Baulch et al., 2010; Glewwe & Chen, 2012; World Bank, 2011). Despite these challenges, approximately 30% of ethnic minority youths do enroll in upper-secondary schools, and 20% of ethnic minority youths do complete their upper-secondary education (General Statistics Office, 2014). Understanding how some ethnic minority students are resilient and manage to overcome barriers and succeed educationally can provide important insights on the avenues that educators can pursue in addressing educational disparity and the educational policies that should be emphasized.

Researchers have defined resilience as an individual's attainment of positive outcomes despite serious threats to adaptation or development (Masten, 2001; Masten & Coatsworth,

1998). The resilience literature exploring association between environment adversities and children's responses indicates that hardship does not always result in detrimental effects. Family, school, and peers can represent powerful adaptive systems that protect and promote the academic achievements of children who reside in favorable or unfavorable environments (Matsen & Coatsworth, 1998). Thus, studies of educational competence and resilience can shed light on the positive factors that enable Vietnam's ethnic minority children to succeed despite substantial challenges.

The present study has applied the competence and resilience framework and used a mixed-methods approach to explore factors that contribute to an ethnic minority student's educational success at the upper-secondary school level. Specifically, the present study has sought to understand how some ethnic minority students manage to transcend obstacles and enroll in upper-secondary school while similar ethnic minority students do not. Understanding educational resilience among ethnic minority youths can inform parents, educators, and policymakers about some of the means that they can use to promote upper-secondary school enrollment among ethnic minority children.

3.2. Challenges to Ethnic Minority Students' Educational Success

In order to understand how children who live in a socially and economically disadvantaged environments overcome adversities to achieve educational success, we need to identify the important threats to children enrolling in schools, attending classes, and attempting to complete their education (Matsen & Coatsworth, 1998). Thus, before discussing factors that may promote ethnic minority students' educational success, the present study discusses factors that may prevent these youths from achieving educational success. Existing research suggests that the educational attainment of ethnic minority students at the upper-secondary level can be

threatened by several factors, including child marriage, family poverty, low levels of education among the parents, school access issues, language-based exclusion, negative peer influences, and disadvantaged neighborhoods.

Child marriage

Child marriage is defined as marriage that occurs before age 18. Child marriage often threatens a girl's health and even her life, in addition to limiting her educational and economic opportunities for the future. In particular, early marriage is often associated with early pregnancy and dropping out of school (Baulch et al., 2010; Dunne et al., 2005; UNFPA Vietnam, 2016).

A recent survey of females between the ages of 15 and 19 shows that although Vietnam's overall rate of early marriage was approximately 11% in 2014, the rate among female ethnic minority students was 26.6% (UNFPA Vietnam, 2016). Vietnam's ethnic minorities have long used early marriage as a means of supplementing the family's labor (Phuong, 2013). However, given the adverse impacts of early marriage on a student's continued schooling, early marriage among ethnic minorities can pose a serious risk to their educational success.

Family poverty

Family poverty is one of the strongest barriers to an ethnic minority student's educational attainment. Family poverty acts in four ways. First, it limits a family's ability to support their child's education financially. Second, it influences parents' decisions regarding whether to send their children to school or keep them at home, where the children can contribute labor to the household's production. Third, family poverty affects the way parents allocate their own time working and support their children's learning (Chudgar & Shafiq, 2010; Edmonds, 2008). Fourth, research has shown that family poverty influences parenting styles; specifically, poor parents are more likely than others to exhibit harsh and inconsistent parenting, which often

contributes poor educational outcomes for their children (McLoyd, 1998; Nicholas-Omoregbe, 2010).

Many studies conducted in Vietnam have indeed confirmed a robust and significant, negative association between family poverty and children's poorer educational attainment (Anh et al., 1998; Filmer, 2000; Gumus, 2014; Hannum, 2003; Israel et al., 2001). Thus, given that ethnic minorities comprised 50% of the poor Vietnamese in 2014 (World Bank, 2015), family poverty would represent the most pervasive challenge to the education of Vietnam's ethnic minority students.

Poorly educated parents

Researchers have found that being reared by parents with no or little formal education limits children's educational success. A parent's educational attainment can contribute to a child's educational attainment in three ways. First, parents who have the requisite education can help their children with homework, in addition to being able to provide for their children's physical health and nutritional needs. Second, they can serve as a safety net to their children's education during shocks. Third, these parents' examples of educational (and subsequent or related professional attainment) can motivate their children's own aspirations (Chudgar & Shafiq, 2010; Haller & Portes, 1973).

Compared to these parents, those without the requisite education have less knowledge, resources, and educational inspiration to contribute to their children's education. A recent study of Vietnam's ethnic minorities found that, because of their low educational attainment, ethnic minority parents with low educational attainment also exhibited low engagement and low esteem. The latter two characteristics affect children's educational motivation: they are associated with reductions in the children's educational success (Tran, 2013). Because low

education is well documented among Vietnam's ethnic minorities, inadequate parental education is likely to pose another serious challenge to the schooling of ethnic minority youths.

School access

School factors associated with the enrollment of ethnic minority students include the family's distance to the nearest upper-secondary school. Because ethnic minorities mainly live in rural and mountainous areas, whereas upper-secondary schools are only available in district centers, ethnic minority students need to travel from their villages to district centers in order to attain an upper-secondary education. This challenge not only increases schooling costs but also creates security problems for children who have to travel long distances from home to school (Baulch et al., 2010; World Bank, 2011).

Language exclusion

Language exclusion is another barrier that an ethnic minority student must confront in order to attend school. Since Vietnamese is the official language used in Vietnam's schools, linguistic barriers can compromise ethnic minority students' educational achievement and attainment (Taylor, 2007). Research has shown that children whose mother tongue is not Vietnamese often have lower test scores than those whose mother tongue is Vietnamese. Researchers have found that linguistic differences can partially account for Vietnam's ethnic educational disparities before children even start primary school (Glewwe & Chen, 2012).

Additionally, most teachers in Vietnam's rural and mountain schools are members of the majority group and are usually unfamiliar with the cultures and languages of many of Vietnam's ethnic minority populations. This social distance may weaken the connection between teachers and ethnic minority students (Baulch et al., 2010; Giacchino-Baker, 2007). For example, many

researchers have found that Vietnam's ethnic minority students rarely interact with their teachers; instead, these students usually sit silently in class, unengaged in class discussions (Tran, 2013). Unfortunately, a weak student-teacher connection is often associated with school dropout (Wang, Haertel, & Walberg, 1998; Wasserman et al., 2003).

Risks from peers

Both peers who are in school and peers who have dropped out can pose risks to the continued schooling of ethnic minority students. In-school peers are those students who come into contact with the ethnic minority student during school-related activities. These peers can have a sizable impact on an ethnic minority student; many ethnic minority students live in dormitories or rental houses in the district centers in order to attend upper-secondary school, rather than with their families. Living away from their families, ethnic minority students are vulnerable to discrimination and bullying at the hands of in-school peers. Research has found that ethnic minority students get teased by their in-school peers for any of several reasons: the minority students' lack of Vietnamese fluency, their low educational attainment, and their distinctive appearance (Tran, 2013). This discrimination can adversely impact an ethnic minority student's educational motivation (Tran, 2013), the perception of his/her academic ability, and educational interests (Wong, Eccles, & Sameroff, 2003). Ethnic minority students also report that fear of bullying at the hands of in-school peers constitutes a primary reason why they drop out of school (Nguyen, Tran, & Ngo, 2013).

Meanwhile, peers who have dropped out can contribute to the ethnic minority student's decision to be truant or to drop out of school as well. For example, research suggests that ethnic minority students who place little value in formal education have diminished enthusiasm for schooling and are easily persuaded to drop out of school when their friends do (Tran, 2013).

Rather than attending school, these students might join the labor force to earn a living, to help their family with household work, or to experience more enjoyment from life. Given the high prevalence of school dropout rates among ethnic minority students, a peer who drops out may have a strong influence on an ethnic minority student's continued upper-secondary enrollment.

Community-level risks

Because ethnic minorities often lack formal education and live in impoverished communities in rural and mountainous areas, their children are at risk of dropping out of school. Both living in poverty *and* living in neighborhoods where residents have little formal education can pose impediments to ethnic minority students' educational success. The residential poverty level, in particular, is often negatively correlated with a child's school participation, even when family background, including household income and parental education, are controlled for (Binder, 1999; Brown & Park, 2002; Garner & Raudenbush, 1991; Hannum, 2003). One possible explanation of this finding is that children living in an impoverished neighborhood may have fewer resources (e.g., community libraries, laboratories, or other facilities) and lack a well-integrated network that supports their learning (Abukari & Laser, 2013; Gumus, 2014; Wang et al., 1998).

In addition, low educational levels among adult neighbors are likely to be negatively correlated with children's educational success. Social capital theory proposes that an individual's actions are often shaped and constrained by the social context in which the individual lives and that the actions of those individuals are controlled by societal norms and rules (Coleman, 1988). Therefore, parents often benefit from observing and learning from other parents who live in the community, and they use what they have observed to make decisions about their investments in their child(ren)'s education. Furthermore, because children often view the adults in their

community as role models, children's school participation can be influenced by the educational attainment of community adults. Researchers have found a positive correlation between the level of adult literacy within a community and the rate of school attendance, in places as diverse as India, Thailand, Kenya, and Turkey (Buchmann & Brakewood, 2000; Chudgar, 2009; Gumus, 2014).

In summary, an ethnic minority child's educational success in Vietnam is determined by multiple factors that operate on many levels. Family- and community-level concerns include early marriage, which may disfavor educational success, especially for females. Similarly, poverty and limited educations may hinder parents' financial and social resources, and growing up in an improvised neighborhood may limit children's access to role models with higher levels of education as well. School-specific factors also matter; a school's distance from the child's home community, issues of language exclusion, and inadequate teachers may all discourage a child's school participation. Finally, peers matter too: exposure to peers who are considering dropping out (or have dropped out already) and discrimination and bullying from schoolmates may negatively influence students' schooling outcomes and present obstacles to their academic achievement.

3.3. Factors Promoting Educational Success

Despite these numerous challenges, approximately 30% of ethnic minority youths do attend upper-secondary schools (General Statistics Office, 2014). Some of them successfully complete upper-secondary education, pass the national entrance examination, and gain admission to postsecondary programs. This implies that ethnic minority youths may simultaneously possess characteristics or experience factors that protect and promote educational success. Studies of

competence and resilience, in particular, suggest that individual-level resources, parental involvement in education, parenting practices, teacher-student relationships, and influences from peers and community can contribute positively to ethnic minority students' academic achievement.

Individual resources

Children living in similar adverse environments may exhibit different individual-level capacities for mediating risks and promoting academic competence: for instance, personal resources such as cognitive abilities, beliefs, and motivations (Matsen & Coatsworth, 1998). In addition to the apparent positive correlation between cognitive abilities and academic success (Matsen & Coatsworth, 1998), individuals' motivation to succeed academically and their *perceptions* about their academic abilities are also associated with academic competence (Bandura, 1986; Garmezy, 1991; Laser, Luster, & Oshio, 2007; Masten & Coatsworth, 1998). For example, students who believe that educational performance depends on effort and hard work are likely to outperform students who believe that performance is fixed (Matsen & Coatsworth, 1998). Furthermore, children with positive views of self are often more educationally resilient than children with negative ones (Laser et al., 2007), and youths who are optimistic about their futures also have better academic outcomes than youths who are less optimistic (Abukari & Laser, 2013).

Parental involvement and parenting practices

Research has shown that parental involvement and parenting styles both play a central role in promoting the academic competence and resilience of children in the household. Parents get involved in their children's education by participating in school activities, communicating with children about their education, supervising their homework, and inspiring their educational

aspirations (Blondal & Adalbjarnardottir, 2009; Wang et al., 1998). Parental participation can promote school attendance and academic improvement. Parents can also promote their children's educational outcomes by strongly communicating educational values and praising children's effort, explicitly setting high expectations, and encouraging academic success (Abukari & Laser, 2013; Wang et al., 1998).

Parenting practices also can be protective/supportive of a child's educational outcomes. Regarding specific parenting styles, authoritative parenting is positively correlated with educational achievement (Blondal & Adalbjarnardottir, 2009; Spera, 2005). This parenting style entails being warm and encouraging, setting clear standards for children's behavior, and enforcing appropriate developmental expectations. However, researchers have found that culture and other circumstances can moderate the effects of parenting style on children's outcomes (Matsen & Coatsworth, 1998). For instance, authoritarian parenting — which refers to parenting that is demanding and controlling without being warm or responsive — has been found to support educational achievement in some contexts too. Namely, when Leung et al. (1998) examined parenting styles' impact on children's educational achievement in the United States, Australia, and Hong Kong, they found that academic achievement was positively correlated with authoritarian parenting in Hong Kong and among families headed by parents with meager educations in the United States and Australia (Spera, 2005). Earlier, Baldwin and colleagues (1990) argued that strict parenting may be required to foster competence in children who live in hazardous environments (Baldwin, Baldwin & Cole, 1990).

Because most of Vietnam's ethnic minorities live in poverty and have low educational levels, and because Vietnam places great value on education (London, 2011b), authoritarian parenting may promote academic achievement among Vietnam's ethnic minority youths.

School-level supportive factors

Researchers have identified several factors associated with improved academic performance and reduced risk of school attrition. These factors include supportive teacher-student relationships and attending a school that encourages a sense of belonging. Teachers promote academic competence by providing guidance and support, and by setting standards and expectations (Crosnoe & Elder, 2004). (Gutman & Midgley, 2000) found that teacher support was positively correlated with students' school adjustment and achievement. Moreover, researchers have found that having a teacher who is a mentor is an important factor to promote a child's educational achievement (Abukari & Laser, 2013).

With respect to the school environment's role, researchers have found that small schools that are more inclusive, that support more family and community engagement, and that set clear expectations for students are more likely to see their students move to the next grade(s) and graduate (Wang et al., 1998).

Peer support and influences

Peers can support a fellow student's schooling in various ways. For instance, they can offer a sense of being cared for, valued, and loved (Wang et al., 1998). As most ethnic minority students in Vietnam do not live with their families when attending upper-secondary schools and thus likely spend more time with peers than with family, peer support may be particularly critical.

Ethnic minority students can also benefit from their peers' socioeconomic advantage, especially if these advantages translate into high educational achievement; the contagion theory proposes that children adopt their peer group norms and emulate their peers' behavior (Jencks & Mayer, 1990). Therefore, peers with high educational achievement can positively impact school

satisfaction, educational expectations, grades, and test scores among their fellow students (Masten & Coatsworth, 1998). Wang et al. (1998) show that peer group's attitude towards school predicts many group members' test scores and that students whose peers value educational outcomes or spend more time on homework are less likely to be absent from school themselves. Ethnic minority students, then, who associate with highly educated peers in their school and/or in their village may have better academic outcomes than those whose friends have dropped out.

Community-level factors

Community factors can promote educational success in several ways. Safe neighborhoods allow youths to spend more time outside, to walk to nearby schools, and to have more opportunities to build positive relationships with peers (Kegler et al., 2005). Communities also create social and cultural values and norms that mediate children's educational behaviors. For one example, as mentioned above, the presence of educated adults in the community can promote children's educational attainment in that children often see these adults as role models. Studies in India, Thailand, Kenya, and Turkey also find positive relationships between community adults' literacy level and children's school attendance (Buchmann & Brakewood, 2000; Chudgar, 2009; Gumus, 2014). In turn, research has also found that adults' expectations for the children in their communities — namely, that they be good citizens — function as a protective mechanism to minimize their school drop-out risk (Wang et al., 1998).

In summary, despite many potential barriers to ethnic minority children's educational achievement, parents and educators can use evidence-based practices to protect and promote their academic competence. Student' positive attitudes toward education, parental involvement, and some parenting styles (in this case, particularly authoritarian parenting) can support the

educational achievement children with socioeconomically disadvantaged backgrounds. With respect to school-related resources, positive student-teacher relationships, a school environment that fosters a sense of belonging, and the presence in the child's life of highly educated peers can also contribute. Finally, research has shown that educational appreciation shared by community members is also a protective factor with respect to the education of ethnic minority students.

3.4. Methods

3.4.1. Data

This study used data from the Families and Communities in Transition (FACT) study of the social changes and their influences on individuals, families, and communities of the Thai people in Vietnam from 2012 to 2015. The Thai in Vietnam, who is also known as Tay Thanh or Tay Muong (Vi, 1996), are the second largest ethnic minority group in Vietnam and constitute approximately 1.55 million people (1.81% of the Vietnam population). They mainly reside in four provinces: Son La (36%), Nghe An (19%), Thanh Hoa (15%), and Dien Bien (12%) (General Statistics Office, 2010). The FACT is a unique, community-based sample drawn from remote, rural areas with little infrastructure. Specifically, the sample was drawn from 16 Thai villages in Nghe An, a province in central Vietnam. The data includes both quantitative and qualitative components.

The quantitative data consists of information collected from Thai people ages 15 and above on different aspects that include demographic characteristics, educational attainment, and their attitude toward education and perceptions regarding educational benefits. FACT questionnaires were offered in both Thai and Vietnamese, and 78% of the respondents chose to be conducted in Thai. To date, the FACT has been conducted in 2012, 2014, and 2015. The present study used the data collected for the 2015 FACT, that consists of questions which assess

perceptions about educational benefits as well as child-parent and student-teacher relationships for respondents born during the eight-year period from 1992 to 2000 (ages from 15 to 23). The final sample consisted of 682 respondents.

FACT qualitative data was collected through ethnographic research, focus group discussions, and intensive interviews. The present study used the data collected in 2015 through focus group and intensive interview that seek to understand how the Thai overcome the challenges that make it difficult for them to enroll their children in upper-secondary schools. The 8 focus groups met in 4 Thai villages from 2 districts (Que Phong and Quy Chau): 4 groups consisted of 21 youths who were between the ages of 15 and 17 and who were attending an upper-secondary school; the remaining 4 groups consisted of 21 youths who were between the age of 15 and 17 and not enrolled in upper-secondary school. Intensive interviews were conducted with 9 children who had dropped out of school and 8 children who were enrolled in an upper-secondary school, their 17 parents, and 4 teachers (2 teaching at the lower-secondary level and 2 teaching at the upper-secondary level).

Since ethnic minority people's social lives usually are limited to the communes in which they live, they may hesitate to express their perceptions to strangers. To address this concern, the study was assisted by FACT local staff who shared ethnic minority status with the study participants. This shared background enabled participants to have more confidence and trust in expressing their opinions to the interviewer. Additionally, the local staff also facilitated the translation from Thai to Vietnamese when it was needed. The data was transcribed and translated into English.

3.4.2. Measures

To identify factors that promote educational success among ethnic minority students, a binary variable that indicated whether the student enrolled in an upper-secondary school was regressed on variables that reflected characteristics of the respondents, and their family, school, peers, and community.

Dependent variable

Upper-secondary school enrollment. This was a dichotomous outcome variable that indicated whether respondents ever enrolled in an upper-secondary school. The variable was adapted from the questions “Are you currently enrolled in school?” and “What is the highest grade completed?” Because respondents were 15 to 23 years old, respondents who ever enrolled in upper-secondary education were those who completed at least grade 9 but remained in schools or someone currently not in school, but they completed at least grade 10 (1= enrolled, 0 = not enrolled).

Independent variables

Individual characteristics

Optimism. It was an ordinal variable. Optimism consisted of three items measuring students’ optimism for the future on a 4-scale measurement. The three items were: “When times are bad, they will get better”; “I am always optimistic about the future”; and “When I have problems, I can make them better”. Responses were scored on a 4-point scale that ranged from 1 (strongly disagree) to 4 (strongly agree). Cronbach’s alpha calculated with data collected from the present sample was 0.96. To facilitate interpretation, this variable was recoded as a trichotomous variable: participants whose response was 1 standard deviation (SD) or less than

the mean were interpreted as having a low level of optimism ; participants whose response was within 1 standard deviation (SD) of the mean were interpreted as having an average level of optimism; and participants whose response was 1 standard deviation (SD) or greater than the mean were interpreted as having a high level of optimism.

Children perceptions about parental care. This was an ordinal variable that measured how much respondents feel that their parents care about them as a person. Responses ranged from 1 (not at all) to 4 (very much). To facilitate interpretation, this variable was recoded as a trichotomous variable: participants whose response was 1 standard deviation (SD) or less than the mean were interpreted as having a low level of parental care; participants whose response was within 1 standard deviation (SD) of the mean were interpreted as having an average level of parental care; and participants whose response was 1 standard deviation (SD) or greater than the mean were interpreted as having high level of parental care.

Attitude to the upper-secondary educational benefits. This was an ordinal variable that measured student's attitude toward benefits of upper-secondary school as opposed to lower-secondary education. It was derived from the responses to two items. The two items were: "For a boy in this village, how much better off would they be by completing high school rather than just completing secondary school?" and "For a girl in this village, how much better off would they be by completing high school rather than just completing secondary school?". Participants responses ranged from 1 (no benefit off) to 8 (a lot of benefits). Cronbach's alpha calculated with data collected from the present sample was 0.95. Again to facilitate interpretation, this variable was categorized into three levels: participants whose response was 1 standard deviation (SD) or less than the mean were interpreted as having a poor attitude to benefits of upper-secondary education ; participants whose response was within 1 standard deviation (SD) of the mean were

interpreted as having a neutral attitude to benefits of upper-secondary education; and participants whose response was 1 standard deviation (SD) or greater than the mean were interpreted as having a high attitude to benefits of upper-secondary education.

Student perceptions about teacher's care. This was an ordinal variable. It was derived from three items that assessed participants' perceptions regarding whether their teacher's care and having a teacher as a mentor. The three items were: "Having a teacher that students can talk to is very important to children in the village"; "Having a teacher as the mentor for students is very important to children in the village"; and "Having a teacher who cares about students is very important to children in the village". Each item was assessed on an on a 4-point scale that ranged from 1 (strongly disagree) to 4 (strongly agree). Cronbach's alpha calculated with data collected from the present sample was 0.98. To facilitate interpretation, this variable was recoded as a trichotomous variable: participants whose response was 1 standard deviation (SD) or less than the mean were interpreted as having a low level; participants whose response was within 1 standard deviation (SD) of the mean were interpreted as having an average level; and participants whose response was 1 standard deviation (SD) or greater than the mean were interpreted as having a high level.

Student perceptions about village's safety. This was an ordinal variable that assessed what participants' thought about village's safety. It was derived from the responses to four items. The four items were: "I feel safe when I go out of my house on my own"; "All my neighbors are people that can be trusted"; "Most people in this village are basically honest"; and "Everyone in my village gets along well, and there are no major disagreements". Each item was assessed on an on an 8-point scale that ranged from 1 (very false) to 8 (very true). Cronbach's alpha calculated with data collected from the present sample was 0.79. To facilitate interpretation, this variable

was recoded as a trichotomous variable: participants whose response was 1 standard deviation (SD) or less than the mean were interpreted as having a low level; participants whose response was within 1 standard deviation (SD) of the mean were interpreted as having an average level; and participants whose response was 1 standard deviation (SD) or greater than the mean were interpreted as having a high level.

Child marriage. This was binary variable indicating whether participants were married before their eighteenth birthday (child marriage =1), other (child marriage =0)

Female. This was a binary variable indicating whether participants were female (female=1 and male =0).

Age. Participant's age was based on the year the participant completed the 2015 survey.

Family variables

Household wealth quintile. This was an ordinal variable that was based on a principal component analysis (PCA) of FACT data as proposed by Vu & Baulch (2011). By using household wealth quintiles, researchers can present and interpret differences in income between household wealth quintiles.

Parents completing upper-secondary education. This was a binary variable that indicated whether one of the parents had completed her or his upper-secondary education (both parents have less than an upper-secondary education=0, one or both parents completing upper-secondary education or above=1.

Parent perceptions about benefits of education. This was an ordinal variable that assessed attitude toward education. It was derived from the responses to four items. The four items were: "My mother thinks education is important for girls"; "My mother thinks education is important

for boys”; My father thinks education is important for girls”; and “My father thinks education is important for boys.” Each item was assessed on an on a 4-point scale that ranged from 1 (strongly disagree) to 4 (strongly agree). Cronbach’s alpha calculated with data collected from the present sample was 0.90. To facilitate interpretation, this variable was recoded as a trichotomous variable: participants whose response was 1 standard deviation (SD) or less than the mean were interpreted as having a low level; participants whose response was within 1 standard deviation (SD) of the mean were interpreted as having an average level; and participants whose response was 1 standard deviation (SD) or greater than the mean were interpreted as having a high level.

Community variables

Village poverty. This variable measured the percentage of household poverty in the village in which the participant lived. The household poverty was recognized in 2014 by Vietnam’s poverty line². To facilitate interpretation, this variable was recoded as a trichotomous variable: participants whose response was 1 standard deviation (SD) or less than the mean were interpreted as having a low level; participants whose response was within 1 standard deviation (SD) of the mean were interpreted as having an average level; and participants whose response was 1 standard deviation (SD) or greater than the mean were interpreted as having a high level.

Village peer dropouts. This variable measured the percentage of school dropout peers who were between the ages of 15 and 23 and did not attend upper-secondary school in the respondent’s village. To facilitate interpretation, this variable was recoded as a trichotomous

² In January 30th, 2011, the Vietnam’s government issued the Decision No. 09/QĐ-TTg on the poverty line applied for the period 2011 – 2005. Accordingly, in rural areas, households with average household income under VND 400,000 per capital per month (roughly USD 19.00 per capital per month) or in urban areas, households with average household income under VND 500,000 per capital per month (roughly USD 24.00 per capital per month) are classified as the household poverty.

variable: participants whose response was 1 standard deviation (SD) or less than the mean were interpreted as having a low level; participants whose response was within 1 standard deviation (SD) of the mean were interpreted as having an average level; and participants whose response was 1 standard deviation (SD) or greater than the mean were interpreted as having a high level.

Upper-secondary educational level of village adults. This variable measured the percentage of people who lived in the participant's village, was at least 23 years of age, and had completed their upper-secondary education. The variable was also recoded into three levels: the low level of village adults completed upper-secondary school fell at least 1 SD below the mean on this measure (0.10), the average level of village adults completed upper-secondary school was within 1 SD on either side of the mean, and the high level village adults completed upper-secondary school fell at least 1 SD above the mean. To facilitate interpretation, this variable was recoded as a trichotomous variable: participants whose response was 1 standard deviation (SD) or less than the mean were interpreted as having a low level; participants whose response was within 1 standard deviation (SD) of the mean were interpreted as having an average level; and participants whose response was 1 standard deviation (SD) or greater than the mean were interpreted as having a high level.

3.4.3. Analytic Approach

To achieve the primary goal of understanding how ethnic minority students overcome challenges and achieve educational success by enrolling in an upper-secondary education school, I used a mixed-methods approach to explore FACT data with a triangulation design. Researchers employ a mixed methods approach when they want to use both quantitative and qualitative data to address the same research question (Suter, 2012). First, the FACT quantitative data was used to examine the relationship between upper-secondary school enrollment and

individual, family, school, peer, and community factors associated with Thai youths. Second, the FACT qualitative data was used to further understand these factors as well as the processes behind educational failures or success at the upper-secondary school level among Thai youths.

Quantitative analysis

The quantitative data were analyzed using the statistical software program, Stata 12. Logistic regression models were fit to explore the relationships between upper-secondary school enrollment and individual, family, school, and community variables. To build the model, I first used a Chi-Square test to determine whether there was a statistically significant bivariate association between an explanatory variable and upper-secondary school enrollment. Next, I used Pearson's correlation coefficient to examine the correlation among variables and determine any interaction needed for the model. Finally, I used stepwise modeling to select variables for the final logistic models of the analysis.

The logistic regressions were processed to predict upper-secondary school enrollment. I present the results from the model in three ways. First, I used odds ratios to reflect the extent to which an explanatory variable was associated with upper-secondary school enrollment. Second, I used Williams' (2012) average adjusted prediction approach to estimate predicted probabilities. The latter has the advantage of being easier to understand as well as making use of all of the data (Williams, 2012). Finally, I used average marginal effects to illustrate the effects of risk factors and promoting factors on upper-secondary school enrollment for the model (Mood, 2010).

Qualitative analysis

I used the data from the focus group discussions and intensive interviews to examine risk factors and protective factors that promote upper-secondary school enrollment and to understand

the factors that contribute to educational failures or success at the upper-secondary level among Thai youths. The analysis was conducted with Nvivo 11 software.

In this study, I adapted Creswell's (2014) eight steps for conducting a qualitative analysis.

Step 1: Organize and prepare the data by arranging the data by the different sources: group discussions and intensive interviews;

Step 2: Initially explore the data by reading the transcripts and writing memos.

Step 3: Develop the code structures by integrating and iterating between the deductive approach and the ground theory approach. The deductive approach or list start method uses the competence and resilience framework to organize the code structures. When researchers use the ground theory approach, they are in a position to account for participant experiences that are surprising or that were not anticipated as they develop (Bradley, Curry, & Devers, 2007);

Step 4: Use different coding methods to code the qualitative data to capture participants' realities and understand the schooling phenomenon among the Thai. These methods include attribute coding (features of participants), descriptive coding, evaluation coding, and theming data (Saldaña, 2015);

Step 5: Sort codes in order to develop themes that take into account the connections between codes and code frequencies;

Step 6: Connect interrelated themes and construct a narrative;

Step 7: Use tables, maps, and figures to present and visualize the results and to demonstrate the relationship between school enrollment and individual, family, school, peers, and community factors;

Step 8: Interpret the results with taking into account comments from researcher's understanding of Thai cultural and historical experiences and comparisons with literature and theories. Potential consultants are ethnographers from the Vietnam Ethnographic Museum.

Validity and reliability. To validate the findings, I used five of Crewell (2014)'s primary strategies: (1) triangulation – converging different sources of information including phone interviews with participants and public reports in the FACT field sites; (2) member checking – getting the feedback (via phone and email) from the participants on the accuracy of the identified categories, themes, cultural description and major findings; (3) providing rich, thick description to convey the findings; (4) clarity the bias the researcher brings to the study by comments from ethnographers who studied in the same fields; and (5) external audit – asking a person outside the project to conduct a thorough review of the study and report back (Creswell, 2014).

To assess reliability, I adapted Gibb (2007)'s suggestions: (1) checked transcripts to make sure that no mistakes had been introduced during the transcription and translation from Vietnamese to English; (2) checked the code structure and the definition of codes to make sure there was not a shift in the meaning during the coding process (Creswell, 2014).

3.5. Findings

Results of the quantitative analysis

I present the results of the quantitative analysis in three sections. First, I present the results of the univariate and bivariate analyses that describe associations between characteristics of Thai youths and characteristics of their upper-secondary school enrollment. Second, I present Pearson's correlation coefficients that describe the relationships between upper-secondary school

enrollment and various risk or supportive factors. Finally, I present the results of the logistic regression model.

Table 3-1 presents descriptive statistics associated with the primary study variables. Only 43% of the Thai youths between the ages of 15 and 23 had ever enrolled in an upper-secondary school. Compared to Thai youths who had never enrolled, the Thai youths who had enrolled differed on 6 characteristics, including child marriage, child perceptions of care from parents, household wealth, parents' completion of upper-secondary education, parental perceptions of upper-secondary school, and level of village peer dropouts from upper-secondary school.

Specifically, 86% of the youths who had married before age 18 had never enrolled in an upper-secondary school. Roughly 51% of the youths who reported having received a high level of parental care had enrolled in an upper-secondary school. Only about 27% of youths in the lowest household-wealth quintile had enrolled in an upper-secondary school, while roughly 53% from the highest household-wealth quintile had. Among children whose parents never completed an upper-secondary school, only about 37% had ever attended such a school themselves. And finally, among youths who lived in a village characterized by high level of peer dropout, only 36% had ever attended an upper-secondary school.

Table 3-2 presents Pearson correlation coefficients that describe the associations among all 15 study variables. Specifically, upper-secondary school enrollment negatively correlated with child marriage ($r = -0.33, p < 0.001$), level of village peer dropout ($r = -0.14, p < 0.001$), and age ($r = -0.32, p < 0.001$). Statistically significant positive correlations, meanwhile, were found between upper-secondary school enrollment and household wealth quintile ($r = 0.18, p < 0.001$), parents' completion of an upper-secondary education ($r = 0.20, p < 0.001$), parents' perceptions of upper-secondary education ($r = 0.13, p < 0.001$), child perceptions of parental

care ($r = 0.16, p < 0.001$), and the student's perceptions of teacher's care ($r = 0.09, p < 0.05$).

The table also shows that a positive correlation emerged between child marriage and being female ($r = 0.33, p < 0.001$); therefore, an interaction between child marriage and being female should be included in the logistic regression model.

In addition to these Pearson correlation coefficients, a preliminary, full, stepwise logistic regression model was also run, with the significance level set at $p = 0.2$, to determine which variables to remove or add (not presented in the table). This exploratory model, too, suggested that a logistic regression model for predicting upper-secondary school enrollment should include the following: individual variables such as child marriage, gender, age, a gender interaction with child marriage; family variables such as household-wealth quintile, youths' perceptions of care from their parents, parents' completion of upper-secondary school, parents' perceptions of upper-secondary education; and, as the community-level variable, village adults' completion of upper-secondary education.

Tables 3-3 present the results of the final logistic regression models predicting upper-secondary school enrollment among Thai youths. The table reports the results in three ways: the odds ratios, the predicted probabilities, and the average marginal effects. First, regarding the odds ratio outcomes, in general, a statistically significant negative association was found between upper-secondary school enrollment and the following three explanatory variables: child marriage, age, and level of village peer dropouts. A statistically significant positive association with upper-secondary school enrollment, on the other hand, was found for the following five explanatory variables: youths' perceptions of the parental care they received, being female, household-wealth quintile, parents' completion of upper-secondary school, and parents' perceptions of enrolling in upper-secondary school.

Exploring the negative correlations further, specifically, the adjusted odds ratio for female and child marriage (0.12) indicated that the odds of ever having enrolled in an upper-secondary school for a female who married before age 18 were 0.12 times lower than those for a counterpart — male *or* female — who had not married before that age (other variables held constant). Similarly, for the odds ratios associated with a youth enrolling in an upper-secondary school would decrease by age. Especially, the odds that a 20-year-old youth enrolling in upper-secondary school was 0.44 times smaller than that of a 15-year-old youth. For youths who lived in villages with an average level or a high level of peers who had dropped out, the youths' odds of enrolling in an upper-secondary school were 0.41 and 0.34 times lower, respectively, than the odds for youths in villages with the low level.

Regarding the positive correlations, odds ratios for child perceptions of parental care were 5.31 for those who perceived their parents' level of care for them as “average” and 7.58 for those who reported a “high” level, respectively. In other words, the odds of upper-secondary school enrollment for these children were 5 and 7 times greater than for those who (perceived themselves to have) received a low level of parental care, other variables held constant. With respect to gender (all else held constant), the odds of a female enrolling in upper-secondary school were 2.20 times greater than for a male. Thai youths whose household income fell in the 3rd, 4th, and 5th quintiles of the household income distribution (higher quintiles representing greater wealth), were 2.49 times, 2.63 times, and 2.46 times more likely to enroll in upper-secondary school than those in the 1st quintile. Parental educational attainment also emerged as supportive, as youths were 2.49 times more likely to have enrolled in an upper-secondary school if they lived with parents who had completed their upper-secondary education, compared to youths who lived with parents that had not. Finally, youths who lived with parents that reported

the most favorable perceptions of upper-secondary education had odds of enrolling in an upper-secondary school that was 3.65 times greater than did Thai youths who lived with parents that reported the least favorable perceptions of upper-secondary education.

Second, table 3-3 presents predicted probabilities that were estimated using Stata 12's average adjusted prediction approach, which allows researchers to interpret the findings from a logistic regression model in a manner that many find easier to comprehend, compared to logit coefficients or odds ratios. The predicted probabilities in this table suggest that, on average, a female who married before age 18 had the lowest probability of enrolling in an upper-secondary school (15%), whereas youths who were 17-years-old had the greatest probability of enrolling in an upper-secondary-school (61%). Other factors associated with a relatively low probability of upper-secondary school enrollment were being a child who perceived his/her parents to have exhibited a low level of care (16%) and being a youth whose parents held the least favorable perceptions of obtaining an upper-secondary education (24%). A youth who lived in a village with a high level of peers who had dropped out and a youth who lived with parents who did not complete their upper-secondary education had equal probabilities of enrolling in upper-secondary school (38%). Table 3-3 also shows that the probability that a youth enrolled in an upper-secondary school was 56% for youths who were 15-years old, it was 58% for 16-year-olds; and 57% for Thai youths who lived in a village with a low level of peers who had dropped out.

Finally, the results of the logistic regression analysis in terms of Stata's average marginal effects. In general, negative associations were found between upper-secondary school enrollment and age, child marriage (especially females who married before age 18), and rates of village peers who had dropped out. Specifically, on average, the probability that a Thai youth had

enrolled in an upper-secondary school was diminished for those between the ages of 19 and 23. Compared to Thai youths who were 15-years-old at the time of the survey, those aged 21, 22, and 23 were less likely to enroll in an upper-secondary school; the latter's estimated marginal effects, expressed in terms of percentages, were 25%, 24%, and 32%, respectively. Compared to any youth, of any gender, who had not married early, the probability of enrolling in an upper-secondary school was 36% smaller for a female who had married before the age of 18. Compared to youths who lived in a village with a high level of peers who had dropped out, the probability of enrolling in an upper-secondary school was 19% lower than it was for youths who lived in a village with a low level of peers who had dropped out.

Positive average marginal effects were displayed for the following variables: child perceptions of parental care, household-wealth quintile, parents' perceptions of the value of upper-secondary education, and parents' completion of upper-secondary education. As this table shows, the probability of enrolling in an upper-secondary school among Thai youths who reported having received a high level of parental care was 31% greater than that estimated for those who reported having received a low level of parental care. With respect to household wealth, the probability of enrolling in an upper-secondary school was 15% greater for Thai youths whose household fell in the highest wealth quintile than for Thai youths whose household fell in the lowest. Moreover, if a Thai youth's parents had completed their upper-secondary education, his/her probability of enrolling in an upper-secondary school was 16% greater than for a youth whose parents had not.

Figures 3-1 and 3-2 display the relationships between the predicted probabilities of upper-secondary school enrollment and the aforementioned factors.

The FACT quantitative data suggest a few precise, potential reasons why Thai youths may drop out of upper-secondary school (see Figure 3-3). First of all, participants reported that the family's need for their child's labor was the main reason for their child to have left upper-secondary school. Indeed, roughly 60% of Thai youths who were dropouts contributed to the family in monetary and non-monetary ways. For example, some youths earned income by working outside of the home; some worked on the family's farm; and some cared for siblings and elderly family members. The second-most common reason for dropping out of upper-secondary school was a dislike for school (about 15% of dropout sample). Respondents reporting an inability to afford school fees or who reported a child marriage as reasons for dropping out accounted for 9% and 7% of the dropout sample, respectively. Other reasons, such as poor school performance, distance to school, and having a peer or peers who had dropped out all totaled less than 10%.

In sum, the results of the quantitative analysis showed that many factors were significantly correlated with Thai youths' attrition or continued enrollment in upper-secondary school. On the one hand, a youth's high perceived level of parental care and parents' own strong appreciation for an upper-secondary education both promoted upper-secondary enrollment. On the other hand, various "risk" factors emerged in this study, including marriage before age 18, growing up in a low-wealth household, parents' having not completed an upper-secondary education, and a high level of peers who had dropped out in the youth's village. These factors all seemed to prevent the Thai youth from enrolling.

Furthermore, the results indicated that, among Thai youths, upper-secondary school enrollment favored females, but females who married before 18-years-old were the most at risk

for school dropout. Initial observations in the quantitative study also revealed that child labor was the most common reason for school dropout among Thai youths. These findings guided the qualitative analysis, which was designed to explore and understand some of the challenges and protective factors affecting Thai youths ethnic minorities' upper-secondary educational success.

Findings from the qualitative analysis

The main purpose of the study's qualitative component is to find explanations regarding the paths by which significant factors identified in the quantitative analysis contributed to Thai youths' ability (or inability) to enroll in upper-secondary school. To accomplish this research goal, the qualitative findings are presented along two themes: risks for educational failure on the one hand and factors that promote Thai youths' success at the upper-secondary school level on the other. In addition, the qualitative component of this study yielded insights into the process used by Thai youths in their decision-making with respect to enrolling in upper-secondary education. Before presenting these findings, however, this chapter discusses the demographic characteristics of the Thai youths who participated in the focus groups and the intensive interviews.

Descriptive statistics

The present study used two types of qualitative data: focus group discussions and intensive interviews. Table 3-4 displays the main characteristics of the 42 focus group participants. Of these 42 Thai youths, half were enrolled in school, and half were not. Of the 21 youths who were in school, 8 were attending 10th grade, 5 were attending 11th grade, and 8 were attending 12th grade. Of the 21 who were not currently in school, one female had dropped out after she completed 5th grade; one male had dropped out after he completed 11th, and 11 males and 8 females had dropped out after completing 9th.

Intensive interview participants, meanwhile, included 17 Thai youths, 17 of their parents, and 4 teachers. These interviews concentrated on understanding a) the challenges that Thai youths confronted in attending an upper-secondary school and b) how Thai youths overcame these barriers. Table 3-5, Table 3-6, and Table 3-7 uses pseudonyms to identify the interview participants and presents selected sociodemographic characteristics. Student participants in these interviews included 9 youths who had dropped out: 6 male and 3 female. All youths who had dropped out had completed grade 9. Among the 8 in-school youths (4 females and 4 males) who were currently attending upper-secondary schools, 3 participants were in the 12th grade, 3 were in 11th, and 2 were in 10th.

There were 9 male parents and 8 female parents. None of the parents had ever attended an upper-secondary school education. Instead, only 3 parents had ever attended a lower-secondary school, and 4 never attended a primary school; the remaining 10 had attended no further than primary school.

Two (2) lower-secondary school teachers and 2 upper-secondary teachers participated in the intensive interviews. All of them had bachelor degrees in education and had taught Thai students for more than 8 years. Three (3) teachers were themselves Thai.

Challenges to upper-secondary school enrollment

Thai youths who had dropped out, as well as their parents, mentioned some of the challenges that prevent them from attending an upper-secondary school; the students' reasons for dropping out reflected these challenges. Participants in both the focus group discussions and the intensive interviews gave the following reasons for leaving school: could not afford schooling costs, have to work for the family, don't live close to school, early marriage, poor school performance, and parents' believing that education is of low value. In addition to these stated

reasons for dropping out of school, youths who remained in school, as well as their parents and teachers, also reported some challenges to school enrollment. This latter group pointed to school distance, bullying, teasing, and inducing to dropouts as issues they confronted when trying to enroll in an upper-secondary school.

Could not afford schooling costs

Participants in the qualitative data collection component reported an inability to afford school costs as the most common reason for their leaving school. Costs included housing, meals, transportation, school supplies, and school fees.

The parents and teachers of Thai youths who did remain in school, however, reported that according to the government's subsidy program, ethnic minority students receive a monthly stipend of 575,000 VND (approximately 26 USD) and 15 kg of rice. Additionally, if ethnic minority students live in the school dormitory, they do not have to pay rent, although they do have to pay utility bills. At the same time, informants also reported that families could only receive this financial support at the end of each semester or at the end of each school year. Meanwhile, most of the parents of youths who had dropped out stated that they were not aware of that kind of support, and even if they had known, they would not have had enough cash on hand to cover school costs without it.

Child 7, a youth who dropped out of school and has a twin brother, reported that during the registration period for an upper-secondary school, his father, who worked outside the home, and his mother did not have enough money — 200,000 VND (about 8 USD) for the registration fee. By the time his dad returned home, they had missed the registration deadline. As a result, he and his twin brother could not enroll in their upper-secondary school. Their father said:

My children told me when I got home that “We wanted to take the entrance exam, but we didn’t have enough money for registration.” I asked their mother why she didn’t get a loan. She said she didn’t know where to get a loan, and when I returned home, the exam was over. That’s why my children couldn’t attend the 10th grade. Sometimes I feel sorry for the kids.

This explanation illustrates the important role that insufficient financial support — in particular, lacking sufficient cash on hand for requisite fees before receiving government subsidies — played in posing challenges to upper-secondary school enrollment for Thai youths. Namely, it was one of the biggest upper-secondary educational obstacles they faced.

Have to work for family

The second-most common explanation participants gave as to why the youths dropped out of an upper-secondary school was: “have to work for the family.” The work that participants mentioned included both household chores and paid work. Child 10, the fourth child of five who all lived with their single mother, remembered when he was notified that he had passed the entrance examination for upper-secondary school; he remembers being happy when he told his mother. To his surprise, though, she asked him to stop continuing beyond the lower-secondary school. His mother affirmed:

There is only me raising this family. I am often sick, and no one helps me with taking care of my family, which is a lot of work. I work in the rice fields and do whatever I need to raise my children: for example, gathering bamboo shoots and working as short-term hired labor. If he [informant’s son] goes away, no one will help me to do household work.

Child 9, the oldest child in a two-child family, decided to drop out of school in order to reduce his family's financial burden by working to contribute extra money. His parents tried to convince him to focus his attention on his schoolwork. He said:

My dad said, "Just focus on your studies; don't worry too much." But I couldn't concentrate on my studies. I could only think about the work I should be doing to reduce his workload. Then I dropped out of school, even though my parents encouraged me to keep going with it. I was distracted by the money I could potentially earn to help my parents.

The above stories indicate that pressures to work — be that inside or outside of the household — contributed to many 15-year-old Thai youths dropping out of upper-secondary school.

Dislike of school or Being too lazy to attend

Thai youths additionally gave the following two reasons for their leaving school: "don't like school" or "too lazy to attend school." Some participants who did not consider their family to be having financial difficulties stated that they, or their children, did not attend upper-secondary school for laziness or for a dislike of school. Child 16, the second child of a two-child family, said:

My family doesn't have any difficulties. I didn't enroll in the upper-secondary school just because I don't like school, and I'm too lazy to study.

Child 16's statement suggests that lacking sufficient motivation to attend one's upper-secondary education represents a risk (for poor academic performance) for Thai youths.

Child marriage

Child marriage, typically the result of minority cultural norms in Vietnam and of insufficient parental control, also contributed to school dropout among Thai youths. Participants in the focus group discussions and the intensive interviews mentioned that early marriage persisted as a reason for school dropout, especially for girls. Teacher 1, a Thai lower-secondary school teacher with 8 years of experience in teaching Thai students, affirmed that child marriage, even “wife kidnapping” — a courtship ritual occasionally still practiced among the Thai people — still threatens girls’ schooling. As an example, he told the story of a female, 9th-grade Thai student who was kidnapped in order to become a wife. Another example of early marriage’s disruptive impact on schooling was the story of Child 8, a grade 9 female student who left school to be with her lover. While she claimed that she had dropped out of school in order to hang out with her friends, her mother stated:

We wanted her to finish the 9th grade no matter what. But then her lover came to ask for marriage, so she stopped schooling. We wanted her to finish the upper-secondary school, but she didn’t listen.

These stories imply that child marriage remains a common practice among Thais, a practice that continues to threaten enrollment in, and completion of, upper-secondary education among Thai youths.

Low school performance.

Although Thai youths who had dropped out of school did not report poor academic performance as a reason for having done so, their parents and teachers did. Child 11, the oldest child of a two-child family, had dropped out after completing the 9th grade. He stated that he had

decided to drop out because the 9th grade felt like enough for him; however, his mother said that he decided to drop out because he had poor study habits and did not do well in school. He did not want to continue to study, she claimed, despite the fact that she and her husband encouraged him to try. Teacher 4, a Thai upper-secondary teacher with 14 years of teaching experience, affirmed that:

Children dropped out of upper-secondary schools because they could not follow lessons and found school boring before leaving the school.

Low parental engagement in the child's education

Teachers reported that the parents of the Thai youths participating in the qualitative study were not engaged in their child(ren)'s education. In particular, the parents purportedly exhibited little interest in deciding up to what level of school their child(ren) would attend, or in encouraging them to attend school at all. Specifically, low parental engagement in child education was mentioned through the school decision-making process and in the way that parents encouraged their children's schooling. Most of the participants in the qualitative component reported that the decision to enroll in or drop out of an upper-secondary school was left up to the youth themselves. For the most part, the parents just followed their child's decision.

Indeed, none of the youths who had dropped out of school reported that their parents had forced them to attend an upper-secondary school; instead, most of them reported that they had made the decision to leave school on their own. Although some were able to convince their child to return to school, some were not. For example, despite the fact that Child 9's parents reported that they could find a way to financially support their son's schooling, he still chose to drop out. Child 11, meanwhile, said that he did not like school, so, after completing 9th grade, he told his parents that he had decided to drop out. They responded with, "It is up to you."

In contrast, Thai youths who did remain in school reported that their parents had encouraged but had not forced them to attend their upper-secondary school. In some cases, even though parents asked their child to *stop* attending, the child decided to continue, and the parents, in turn, had to figure out a way to support the child through this choice. For example, when the parents of Child 6 asked her to stop going to school, she decided to remain enrolled, thus prompting her mother to find a paying job in order to earn a living and support her child's education.

Child 14's story was quite different. After her father passed away, her step-mother told her that she had to stop going to school and must prepare to get married. Instead, Child 14 decided that she would live with her grandfather and continue her upper-secondary education as a member of his household.

Thai youths' role in the family's decision-making about their own schooling extended even to decisions about whether to reside on or off campus when attending a school away from home. Interviewed parents reported that living in the school dormitory was more expensive and that the rules there were much stricter than the rules that came with living off-campus. However, in general, youths' decisions on this matter were heavily influenced by their personal living preferences and not by housing costs, and their preferences could be a determining factor even among families with limited financial resources.

Child 4 and his brother, for example, attended the same upper-secondary school away from home. Although Child 4 lived in the dormitory, his brother lived off campus. Their parents reported that since his brother did not like to live under the strict rules that came with dormitory life, he stayed in a rental room. Similarly, Child 5 and his sister also attended the same school as

one another; he lived off campus, while she lived on campus.

Teacher 3, an upper-secondary school teacher with 14 years of experience, explained:

Living on campus is more guaranteed and stable. While living off campus, students have to cook for themselves; we cook for students on campus and offer free extra classes.

However, children feel not as free [living on campus] as living outside. Their parents want them to live on campus, but some children don't like to. Parents have to follow their children, and that way they spoil their children.

The above reports indicate that lack of strong parental engagement in one's child's education was a contributing factor in poorer upper-secondary school attendance by Thai youths.

School distance

Having to travel significant distances between home and school posed a significant barrier for many Thai youths. In addition to the physical and logistical hardships posed by the journey itself, the family had to pay whatever travel costs there were, and the child(ren) and the family had to endure the hardships associated with the child's living away from home. In order to attend their upper-secondary school, all of the youths who participated in the qualitative component of this study had to travel at least 20km to the district center, where their upper-secondary school was located. Many of youths participating in the qualitative study reported that long and difficult distances prevented them from attending. Child 1, who was a 10th-grade student, lived 47km away from the district center, and his older brother was the only available family member who could take him to school on his motorbike. Child 1 dropped out after attending just the first two weeks of the school year. His father reported that this was because he (the child) had become sick; however, traveling and living away from home posed the greatest challenges. As his father explained:

He often got sick when he studied there, so we had to take him home two or three times during the first two weeks of the school year. It was hard because he lived far away. We tried convincing him to return to school, but he didn't listen. We even tried convincing him to try for vocations, but he didn't listen, so we let him be.

Because most schools were located at great distances from where the Thai youths lived with their families, the families had to find their enrolled child(ren) housing that was close to the upper-secondary school. In fact, *all* of the participating parents reported that they had to find on- or off-campus housing for their child(ren) who attended upper-secondary school. Although housing on campus was free, students still had to pay for their meals and utilities. Many parents reported that the school costs associated with living off campus were roughly the same as those associated with living on campus, if the students brought food such as rice from home and cooked for themselves. Ultimately, most of the in-school children reported that their decision regarding whether to live on or off campus depended on lifestyle preferences. Child 6, an 11th-grade student who lived on campus, stated:

I like living in the dormitory because it is more enjoyable and secure. Students on campus often hang out when they have free time. We help each other and also had a teacher to supervise and support after school hours.

Child 13, another 11th-grade student, lived off campus and reported:

It is about 700,000 VND per month to live off campus, and the cost for on campus is 800,000 VND per month. So I can save some money each month. It was also noisy and crowded on campus, so that it was hard for me to focus on studying.

For these families and their children, there are challenges to be faced beyond simply securing housing for the enrolled student, such as those that arise when youths live apart from the family. All of the youths who had moved away from home to live near or on the school grounds reported that homesickness was the greatest challenge they faced during the first weeks.

Bullying, teasing, and inducing to school dropout

Being bullied and/or teased also contributes to Thai youths' decision to drop out of upper-secondary school. Both teachers and youths reported these behaviors when they were interviewed. Thai boys and girls who were enrolled in an upper-secondary school at the time of the intensive interviews or focus groups reported that they had been bullied and teased both when they were on and off campus. Freshmen were the students most likely to report having been bullied and teased, often by juniors and/or by former local students who had already dropped out.

Child 14, a currently-enrolled female freshman who had experienced both bullying and teasing, said:

Students in 12th grade used to tease me when I was studying. They even threatened to hit or to slap me. They threatened us all. They just wanted to bully freshman students. I also saw they fought other freshmen.

Thai youths who reported that they experienced bullying and teasing gave several reasons that they believed lay behind the behavior. Child 15, a 12th-grade student who had experienced bullying, mused, "I was bullied maybe because I was unwelcome in this place." Child 13, an 11th- grade student, said he was teased because he spoke in a thick Vietnamese accent. Child 1, who reported that he was teased about his poor academic performance, mentioned that, before he had dropped out of his upper-secondary school, the biggest challenge that he faced there was

overcoming his sense of shame over the fact that he had taken supplemental courses at a continuing education center, as opposed to taking the regular upper-secondary school courses.

Although teachers stated that language exclusion was a big problem for students at the primary and the lower-secondary school levels, they seemed to feel it was not such a problem in upper-secondary school.

Moreover, some Thai youths dropped out when they saw that their friends did, and vice versa. Child 1, for instance, reported that when he decided to quit school, his roommate — also from his village — dropped out of school on the same day. His friend had said, “I won’t study if you don’t.” In contrast, Child 9 was encouraged by his friends to follow suit as they dropped out of school and joined the labor force so that they could earn an income. Finally, some other Thai students succumbed to the siren call to enjoy a life of leisure, free of the normal age-related responsibilities. Teacher 1 said:

The 9th-grade students are just uncontrollable. They won’t go to school even if they are told. They prefer wandering on the street rather than going to school. Although we don’t have electricity, school truancy due to billiards and gambling still a big problem.

What all of these examples suggest, taken together, is that while Thai youths sometimes experience bullying and teasing by their classmates, this is not the only factor in their decision to drop out; they also face more “friendly” pressure to drop out of upper-secondary school, and this tends to come from village peers who have dropped out earlier.

In summary, Thai youths experience diverse challenges to their beginning and continued enrollment in upper-secondary education. These challenges come from multiple levels, including

individual, family, peer, and school. At the individual level, Thai youths may drop out of upper-secondary school because they do not personally place much value on obtaining an upper-secondary education; because they underperform with respect to their academic goals; and/or because they enter into a child marriage that results in their staying home instead to perform the duties expected of a spouse. Family-level obstacles seem largely economic: Thai youths may drop out of upper-secondary school because their families cannot afford to send them, or even because their families need the additional labor the child contributes to the household. Family disregard for or inexperience with education would be a subtle family-level obstacle too. At the peer level, Thai youths may quit school because of bullying and/or teasing, but also because their friends (less maliciously) encourage them to drop out. Finally, at the school level, Thai youths might drop out because they have to travel great distances to attend; because they struggle to secure the funding needed to travel these distances and live away from home; and because they grow homesick after moving away from their families. However, it should be noted that, even for Thai youths who did not speak fluent Vietnamese, this language barrier was *not* among their reasons for dropping out.

Factors promoting upper-secondary school attendance

Thai youths, their parents, and their teachers who participated in the focus group discussions and in the intensive interviews identified factors that promoted the youths' attendance at an upper-secondary school. These factors included the individual student's positive attitude toward education, parental support for obtaining an upper-secondary education, and student relatives' support.

Positive attitude toward education

Thai youths with a positive attitude toward education generally believe that education can secure their future success. Despite the significant difficulties they faced, those who were still enrolled reported that they continued to attend because they believed that education would allow them to escape hunger and poverty and could help them have a better life than the life their parents lived. The following situation illustrates these points:

Child 14 was a grade 10 student and the third sister in a four-child family. Her mother passed away when Child 14 was in 3rd grade. Her dad re-married, to a widow who had 2 children of her own. Child 14 decided to drop out of school when she completed 9th grade to work in a shop in order to earn money to support her older sister, who wanted to continue her college education. Unfortunately, Child 14's father died one year after she dropped out. After his death, Child 14 was sent to live with her grandfather. She asked him if she could continue her schooling. With his support, two years later, she passed the upper-secondary school entrance exam and enrolled. She said: "My circumstances have been my motivation to return to school. I need to have the education to have a better life than my parents."

Child 6, an 11th-grade student, faced different circumstances and made different decisions. Due to the construction of a hydroelectric dam, her family was relocated to Quy Chau. Her father was a drug user, and her mother left the family to work in a garment factory in the south. With her job, the mother was able to earn a living and pay for her daughter's schooling. Her mother reported that she had asked the child to leave school because many other people had stopped their education to work. Child 6, however, was not persuaded by her mother's argument. She said: "I wanted to complete my upper-secondary school so that I can find a good job and change my life."

Parental support

Parents reported that they provided significant support to their children that enabled the latter to attend school. This support included encouraging their child to attend, reducing the workload that their child was expected to manage, and securing the financial resources necessary for the child's attendance. Most of the children who attended school reported that their parents convinced them to attend by telling them that education is the only way they could escape a life filled with economic hardship and that they would not be able to find a job if they had not completed their upper-secondary education. Their parents also convinced them that they did not have to worry about doing household work or earning money for the family, reassuring them that they — the parents — could afford all of the school expenses that might be incurred.

Indeed, most of the participants in the focus groups and in the intensive interviews reported that the provision of parental financial support played an important role in determining whether the child enrolled in an upper-secondary school. Parents, furthermore, reported that the families of ethnic minority students could receive educational subsidies for the children's attendance in upper-secondary school; however, these subsidies were insufficient and available only at the end of each semester or even only at the end of each school year. To secure sufficient funding, then — especially cash funds — for their child(ren) to attend an upper-secondary school, many parents had to work multiple jobs. Some of the parents even chose to move away from their families to work in the south in order to earn higher wages that could support the child(ren)'s schooling. For example, to support Child 6's education, her mother left the family, leaving her 10-year-old son with neighbors, in order to work in the south for a garment factory. She said: "I knew I should not leave my son alone, but if I stay home, I could not afford for my daughter's schooling."

Other parents remained where they were living. Most of the fathers took any job that they could find, such as construction and legal or illegal wood gathering. Meanwhile, most of the mothers earned money by harvesting bamboo or rattan from forests or making crafts. Parent 4, a mother of two children who were enrolled in school, said:

“To have about 1,600,000 VND (about 73 USD) for two children per month for my children attending upper-secondary school, I collected anything from the forests that can be sold. Recently, it was bamboo. If there is no rain, I can gather about 100 kg of fresh bamboo, equivalent to 10 kg of dried bamboo, and that can be sold for 2,000,000 VND (90 USD).

Relatives' support

In addition to parents, Thai youths received significant support from their relatives. According to parents and the youths themselves, was the emotional and other support provided by relatives (who were also their neighbors). When Child 14's parents passed away, for instance, her grandfather — a veteran and a former local authority — not only looked after her; he also supported her desire to return to upper-secondary school and gave her the educational orientation that she needed to succeed in school. And when Child 6's mother left home to work in the south, neighbors took care of her younger brother, and the children's aunt who is living in town agree to look after and provide meals for Child 6 while the girl attended the upper-secondary school.

Some family members even served as educational role models as well; Thai youths who were enrolled in school reported that their relatives, especially those who were highly educated and/or highly respected in the community, had a positive influence on the youth's desire to succeed in school. Both Child 14 and Child 15 (siblings) claimed that they were encouraged and motivated by the example of their uncle, who was the vice president of the Commune People's

Committee. Child 4 reported that his grandfather, who worked in the district police department, had the greatest influence on his motivation in upper-secondary education. And Child 3 cited her uncle, who worked in the Commune People's Committee, as the person with the greatest influence on her educational aspirations.

School-level supportive factors

Schools also provided Thai students with additional resources. The qualitative component participants reported that the school gave the family its government subsidies and provided free lodging when the student's home was a great distance away. Schools also assigned teachers who would provide supervision and support after regular school hours for the students who were living in the dormitories, and some students reported that their grades improved as a result of these resources. Other students said they preferred to have more freedom, so they eventually moved off campus.

Thai youths and their parents claimed that the bonds between the youths and their upper-secondary school teachers were not as close as the bonds that the youths shared with their lower-secondary school teachers. In fact, most of the youths reported that their *lower*-secondary school teachers had the greatest influence on their school performance. Parents' remarks echoed this: they reported that they often met and talked with lower-secondary school teachers about their child's learning but that they only met with the upper-secondary teachers during regular parent-teacher conferences.

Peer support

Thai youths who were still enrolled in school often mentioned that they had frequently received support from their schoolmates as well. Moreover, the students who lived on campus

reported that they often gave or received support from their roommates. This support included helping with homework, sharing class notes, sharing food, and taking care of one another when one of them got sick.

In summary, in addition to supporting the validity of some of the quantitative findings, the findings from the qualitative analyses also revealed low school performance; dislike of school; low parental engagement in the child's education; school distance; the experience of being bullied or teased; and encouragement from friends to drop out as further challenges to the Thai youths' upper-secondary school enrollment. The qualitative research also uncovered that the Thai students who overcame the challenges so common to their same-ethnic peers in pursuing an education shared many characteristics with one another. These included 1) a positive attitude toward schooling and 2) effective support from parents, other relatives, the school itself, and in-school peers.

All in all, what the qualitative research conversations made clear was that although a positive personal attitude toward education plays an important role in a child's school outcomes, parents, other relatives, the school itself, and peers offer the economic and social resources that enable the child to achieve academically.

3.6. Discussion

The present study sought to understand how some Thai ethnic minority students overcome obstacles and achieve success in their upper-secondary education. Using quantitative and qualitative data from the 2015 FACT, the present study showed that the educational success or failure of Thai ethnic minority students was influenced by broad-ranging factors, including individual, family, school, peer, and community.

At the individual level, child marriage among Thai youths threatens upper-secondary school enrollment. Previous studies have consistently shown that marriage before age 18 is particularly prevalent among ethnic minority females (Baulch et al., 2010; UNFPA Vietnam, 2016), and Phuong (2013) has indicated that child marriages are often motivated by traditional methods of supplementing the family's labor. However, the current study also highlighted that the customs of forced marriage and "wife-kidnapping" among Thai youths, coupled with situations wherein teenagers conduct romantic relationships amidst low parental control, increase a child's risk of entering an early marriage. While female youths were more likely than their male counterparts to remain enrolled in school, girls who married before age 18 were the group most vulnerable to drop out. This paradox can be explained rather simply: once a girl or young woman is married, her first priorities are expected to be household work and giving birth — not schooling. As child marriage is already illegal in Vietnam, these findings suggest that it is necessary to expand awareness of child marriage laws and the drawbacks of child marriage, with such messages particularly targeted toward ethnic minority youths and their parents and communities (among whom child marriage is more prevalent).

In addition to child marriage, poor academic performance also prevents ethnic minority students from enrolling in upper-secondary education. Since students have to pass an entrance exam to be eligible to advance to upper-secondary school, those who have been poor academic achievers may fail to pass this pivotal exam. The current study also reveals that children who fail the entrance exam must take supplemental courses to compensate for their educational deficits and eventually reach upper-secondary education; however, paradoxically, the shame students might feel for attending supplemental courses also can encourage them to give up their schooling. Furthermore, regardless of their path to upper-secondary school, if the youth performs

poorly academically while there, schoolmates might tease them — and teasing and bullying represent additional disincentives for some students to continue with their studies. Thus, replacing the entrance exam with a mechanism of school-oriented admissions in which based on student's interests and their academic achievements, they can apply either upper-secondary school or vocational training school. Additionally, paired with efforts focused on creating a friendlier school environment, might promote ethnic minority enrollment in upper-secondary education.

Findings from the present study's qualitative component are consistent with earlier studies, which suggested that a positive attitude toward pursuing one's education can help a youth achieve academic success (Abukari & Laser, 2013; Lesser & Oscós-Sánchez, 2007). The current qualitative findings indicate that for children who are reared by poorly educated or neglectful parents, personal educational attitudes played a key role in determining whether he/she enrolled or remained enrolled in an upper-secondary school. Essentially, youths who believe that education can bring them a better future are more likely to make great efforts to enroll in and complete an upper-secondary education. Such a finding suggests that efforts to increase awareness regarding education's benefits and educational orientation can promote school enrollment among ethnic minorities.

Similar to earlier studies (Baulch et al., 2010; World Bank, 2011), the current study finds that residing in a household with limited financial means poses a significant challenge for ethnic minority youths with regards to enrolling in an upper-secondary school. Two explanations for this phenomenon emerge from the current study's focus groups and interviews:

First, schools require students to pay school expenses (e.g., housing, meals, other fees) up front, and while the government subsidies for ethnic minorities are mostly sufficient for covering

these expenses, they are often not disbursed until after each term. Therefore, impoverished ethnic minority families who lack the requisite cash cannot send their children to school. In this case, the results of this study suggest that disbursement of the educational subsidies at the beginning of the academic term rather than at the end might promote upper-secondary school enrollment and reduce school dropout among ethnic minority youths. Making registration and the attendant paperwork cost-free might also promote ethnic minority enrollment and attendance rates.

Second, residing in an impoverished household puts pressure on ethnic minority youths to help their families, both in the form of chores and in the form of additional income. These families sometimes must choose between enrolling a child in upper-secondary school or sending the child into the workforce. Therefore, when the benefits of schooling are unclear to a family and are instead only realized at some unknown future time, the ethnic minority student may decide to drop out in pursuit of a more immediately tangible outcome.

Rearing by poorly educated parents poses another challenge to ethnic minority youths who might consider enrolling in upper-secondary school. Previous studies have suggested that parents with limited educations may not be able to help their children in school or serve as educational role models (Chudgar & Shafiq, 2010; Tran, 2016). The present study has shown, furthermore, that parents who have little-to-no formal education also have less influence on their children's educational choices. Additionally, the ethnic minority parents in this study who were not highly educated often exhibited low engagement in their child's education, or even neglectful parenting which had been shown in prior research to be associated with adverse academic outcomes for the child (Blondal & Adalbjarnardottir, 2009).

Despite the fact that ethnic minority parents were sometimes limited in the contributions they could make to their children's educational success by their own (i.e., the parents') low

educations, they still seemed to have their own ways to support their children's schooling. The current study has shown that some of these poorly educated parents hold a high appreciation for the benefits of education, which seems to motivate them to find (or create) their own ways to offer significant support. For instance, in addition to offering strong encouragement to their child to attend school, some of these parents also reduced their child's household workload or went to great lengths (e.g., moved out of town, arranged long-term childcare) in order to secure the financial resources needed for their child's school attendance. This finding suggests that interventions that enhance parents' awareness of the very real benefits of upper-secondary education can encourage them to support their children's attendance.

With respect to school factors, consistent with earlier studies, findings from the present study indicate that a great distance between home and the upper-secondary school represents a significant barrier to enrollment for ethnic minority students (Baulch et al., 2010; World Bank, 2011). This barrier manifests itself in three different concerns: living expenses, living conditions, and security. The present study found that the decision to seek on- or off-campus housing depended more on the student's housing preferences (mainly about living conditions) than it did on costs. Hence, the fact that various students in the current study expressed disinterest in the on-campus housing suggests that the free housing offered by schools is not necessarily attractive to all students. Improvements in housing may result in larger numbers of ethnic minority students interested in taking advantage of the free housing, which in turn can promote their attendance at the upper-secondary school level.

Peers, meanwhile, pose both risks and protective factors for ethnic minority students attending (or thinking of attending) upper-secondary school. On the one hand, the present study has shown that bullying and teasing on the part of schoolmates have a negative impact on ethnic

minority youths' decision to remain in an upper-secondary school. The presence of dropouts who live in the youths' villages also exerts a negative impact on their decisions about upper-secondary education. On the other hand, socioemotional support given by one's schoolmates (and relatives) can facilitate educational success among ethnic minority youths in upper-secondary school. In addition to Wang et al.'s (1998) finding that friends offered a sense of being cared for and loved, the present study finds that ethnic minority students frequently share food and money with each other, especially with roommates.

Highly educated relatives also emerged in this study as playing an important role in promoting the education of ethnic minority students. These relatives can serve as an additional safety net (besides the parent) for the child's educational endeavors. They also can be educational role models.

3.7. Conclusion

This paper has found supporting evidence for the argument that although most ethnic minorities retain several features associated with poor academic attainment, some do possess a few characteristics that support their upper-secondary education.

Early marriage; poverty; low-educated parents; low parental engagement in the child's education; a long distance to school; being bullied or teased; being encouraged to drop out by friends; and the presence of a high number of peer dropouts in one's own village all pose risks for the ethnic minority youths studied here. Namely, these factors have all been identified as contributors to dropout among this population.

Having highly supportive parents, prestigious or highly-educated relatives, highly-educated peers, and a positive personal attitude toward education, meanwhile, all promote ethnic minority youths' enrollment in and completion of upper-secondary education.

To reduce and eliminate risks to upper-secondary school dropout and thereby promote ethnic minorities' educational success, these findings suggest, the Vietnamese government can do several things.

First, with respect to school access, it can expand networks of upper-secondary schools into remote and rural areas. It must also improve the effectiveness of education-related programs geared toward ethnic minorities: particularly, the educational-benefit application process needs to be simplified, so that poor and low-educated parents are able to access these benefits for their families. Furthermore, while it is wonderful that the government offers subsidies for ethnic minorities' schooling and it should continue to do so, these financial subsidies should be disbursed at the beginning of, instead of after, each semester. The entrance examination for upper-secondary school should be replaced with school-oriented admission.

Finally, a few cultural shift efforts are imperative. The performance of marriage law should be strictly enforced to reduce and eliminate marriages before age 18. A stronger appreciation for education should also be fostered across society; the government must find ways to cultivate a stronger awareness of the benefits of education, particularly among ethnic minority students, their parents, and their communities. Enacting these changes will require schools and educators to take an active role, working together with students, parents, and communities, to create better learning conditions and environments for ethnic minority students.

Table 3-1. Descriptive statistics from univariate and bivariate analysis with 15 – 23-year-old Thai youths in 2015

Variables	Total (N= 682)	Never enrolled (N = 388)	Ever enrolled (N = 294)	Pearson Chi- Square
<i>Dependent variable</i>				
Upper-secondary school enrollment	0.43			
<u><i>Explanatory variables:</i></u>				
Child marriage				
<i>Child marriage =0</i>	0.77	48.08	51.92	72.80***
<i>Child marriage =1</i>	0.23	86.25	13.75	
Optimism				
<i>Low</i>	0.10	59.78	40.22	0.56
<i>Average</i>	0.61	58.33	41.67	
<i>High</i>	0.29	56.05	43.95	
Attitude to the upper-secondary education				
<i>Low</i>	0.13	58.21	41.79	2.89
<i>Neutral</i>	0.21	59.23	40.77	
<i>High</i>	0.65	52.02	47.98	
Student perceptions about village's safety				
<i>Low</i>	0.20	52.9	47.1	2.72
<i>Average</i>	0.65	56.82	43.18	
<i>High</i>	0.15	63.46	36.54	
Child perceptions about parental care				
<i>Low</i>	0.04	87.5	12.5	18.39***
<i>Average</i>	0.55	60.96	39.04	
<i>High</i>	0.42	49.3	50.7	
Student perceptions about teacher's care				
<i>Low</i>	0.04	64.29	35.71	6.33
<i>Average</i>	0.22	65.13	34.87	
<i>High</i>	0.74	54.18	45.82	
<u><i>Family variables</i></u>				
Household wealth quintile				
1 st	0.18	73.17	26.83	

2 nd	0.19	63.28	36.72	23.69***
3 rd	0.23	52.56	47.44	
4 th	0.22	52.03	47.97	
5 th	0.19	46.46	53.54	
Parents completing upper-secondary education				
<i>Completed=0</i>	0.72	63.21	36.79	27.46***
<i>Completed=1</i>	0.28	41.05	58.95	
Parent perceptions about upper-secondary education benefit				
<i>Low</i>	0.04	82.76	17.24	11.52**
<i>Average</i>	0.20	62.77	37.23	
<i>High</i>	0.76	54.07	45.93	
<u>Peer and community variables:</u>				
Village peer dropouts				
<i>Low</i>	0.12	34.94	65.06	19.47***
<i>Average</i>	0.74	59.41	40.59	
<i>High</i>	0.14	63.83	36.17	
Village poverty				
<i>Low</i>	0.20	63.91	36.09	6.08
<i>Average</i>	0.58	53.15	46.85	
<i>High</i>	0.22	61.18	38.82	
Village adult's upper-secondary				
<i>Low</i>	0.21	63.12	36.88	2.96
<i>Average</i>	0.63	56.02	43.98	
<i>High</i>	0.16	53.21	46.79	

(Note: *** p<0.001, ** p<0.01, * p<0.05.)

Table 3-2. Inter-correlations among explanatory variables and upper-secondary school enrollment: 15 – 23-year-old Thai Youths in 2015

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Upper-secondary school enrollment	-														
2 Child marriage	-0.33***	-													
3 Optimism	0.03	-0.07	-												
4 Attitude to the upper-secondary education	0.05	-0.06	0.02	-											
5 Household wealth quintile	0.18***	-0.13***	0.01	0.05	-										
6 Parents completing upper-secondary education	0.20***	-0.07***	0.03	0.01	0.08*	-									
7 Parent perceptions about upper-secondary education	0.13***	-0.02	0.15***	0.09*	0.07	0.06	-								
8 Child perceptions about parental care	0.16***	-0.06	0.05	0.03	0.13***	0.06	0.11**	-							
9 Student perceptions about teacher's care	0.09*	-0.03	0.33**	0.06	0.01	0.04	0.23***	0.15***	-						
10 Student perceptions about village's safety	-0.06	0.05	0.11**	0.01	-0.08*	0.01	0.02	0.04	0.10**	-					
11 Village poverty	0.01	0.05	-0.07	-0.02	0.13***	-0.04	-0.05	0.02	-0.09*	-0.03	-				
12 Upper-secondary educational level of village 's adults	0.06	-0.04	-0.03	0.03	0.05	0.03	0.02	-0.06	0.01	-0.07	-	-			
13 Village peer dropouts	-0.14***	0.12**	0.01	-0.03	0.01	-0.15***	-0.02	0.00	0.00	0.03	0.11**	-	-		
14 Female	0.01	0.33***	-0.09	-0.05	0.01	-0.09*	0.05	0.02	0.04	-0.07	0.01	0.00	0.01	-	
15 Age	-0.32***	0.18***	0.01	-0.06	0.03	-0.05	-0.02	-0.06	-0.04	0.04	-0.03	0.03	0.03	-0.06	-

(Note: *** p<0.001, ** p<0.01, * p<0.05.)

Table 3-3. Logistic regression models predicting upper-secondary school enrollment among 15 – 23-year-old Thai youths in 2015 (N=682)

Variables	Odds ratios	Predicted Probabilities	Average marginal effects
<i>Individual variables:</i>			
Child perceptions about parental care			
<i>Low</i>	(.)	0.16* (0.08)	(.)
<i>Average</i>	5.31* (3.65)	0.41*** (0.02)	0.25** (0.08)
<i>High</i>	7.58** (5.25)	0.47*** (0.03)	0.31*** (0.08)
Child marriage			
<i>Child marriage =0</i>	(.)	0.51*** (0.02)	(.)
<i>Child marriage =1</i>	0.68 (0.32)	0.25*** (0.05)	-0.07 (0.08)
Female			
<i>Female=0</i>	(.)	0.42*** (0.03)	(.)
<i>Female=1</i>	2.20*** (0.46)	0.49*** (0.02)	0.14*** (0.03)
Age			
<i>15.age</i>	(.)	0.56*** (0.05)	(.)
<i>16.age</i>	1.12 (0.45)	0.58*** (0.06)	0.02 (0.07)
<i>17.age</i>	1.36 (0.54)	0.61*** (0.05)	0.06 (0.07)
<i>18.age</i>	0.67 (0.25)	0.48*** (0.05)	-0.07 (0.07)
<i>19.age</i>	0.52 (0.22)	0.43*** (0.06)	-0.12 (0.08)
<i>20.age</i>	0.44* (0.16)	0.40*** (0.05)	-0.15* (0.07)
<i>21.age</i>	0.26*** (0.10)	0.31*** (0.05)	-0.25*** (0.07)
<i>22.age</i>	0.28***	0.32***	-0.24***

	(0.10)	(0.05)	(0.07)
<i>23.age</i>	0.17***	0.24***	-0.32***
	(0.07)	(0.04)	(0.07)
Female & child marriage			
<i>Female=0 & child marriage=0</i>	(.)	0.43***	(.)
		(0.03)	
<i>Female=0&child marriage=1</i>	(.)	0.35***	(.)
		(0.09)	
<i>Female=1&child marriage=0</i>	(.)	0.59***	(.)
		(0.03)	
<i>Female=1&child marriage=1</i>	0.12***	0.15***	-0.36***
	(0.07)	(0.03)	(0.10)
<u>Family variables:</u>			
Household wealth quintile			
<i>1st</i>	(.)	0.31***	(.)
		(0.04)	
<i>2nd</i>	1.50	0.38***	0.06
	(0.49)	(0.04)	(0.05)
<i>3rd</i>	2.49**	0.47***	0.16**
	(0.78)	(0.03)	(0.05)
<i>4th</i>	2.63**	0.48***	0.16**
	(0.83)	(0.03)	(0.05)
<i>5th</i>	2.46**	0.47***	0.15**
	(0.81)	(0.04)	(0.06)
Parents completing upper-secondary education			
<i>Completed=0</i>	(.)	0.38***	(.)
		(0.02)	
<i>Completed=1</i>	2.49***	0.55***	0.16***
	(0.53)	(0.03)	(0.04)
Parent perceptions about upper-secondary education			
<i>Low</i>	(.)	0.24**	(.)
		(0.08)	
<i>Average</i>	2.79	0.39***	0.16
	(1.74)	(0.04)	(0.09)
<i>High</i>	3.65*	0.45***	0.21*
	(2.17)	(0.02)	(0.08)
<u>School, peer, and community variables:</u>			
Village peer dropouts			
<i>Low</i>	(.)	0.57***	(.)

			(0.05)	
	<i>Average</i>	0.41**	0.42***	-0.15**
		(0.12)	(0.02)	(0.05)
	<i>High</i>	0.34**	0.38***	-0.19**
		(0.13)	(0.04)	(0.06)
Constant		0.07**		
		(0.07)		

(Note: Standard errors in parentheses. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.)

Figure 3-1. Predicted marginal probability of upper-secondary school enrollment by student perceptions about parental care, child marriage status, gender and age

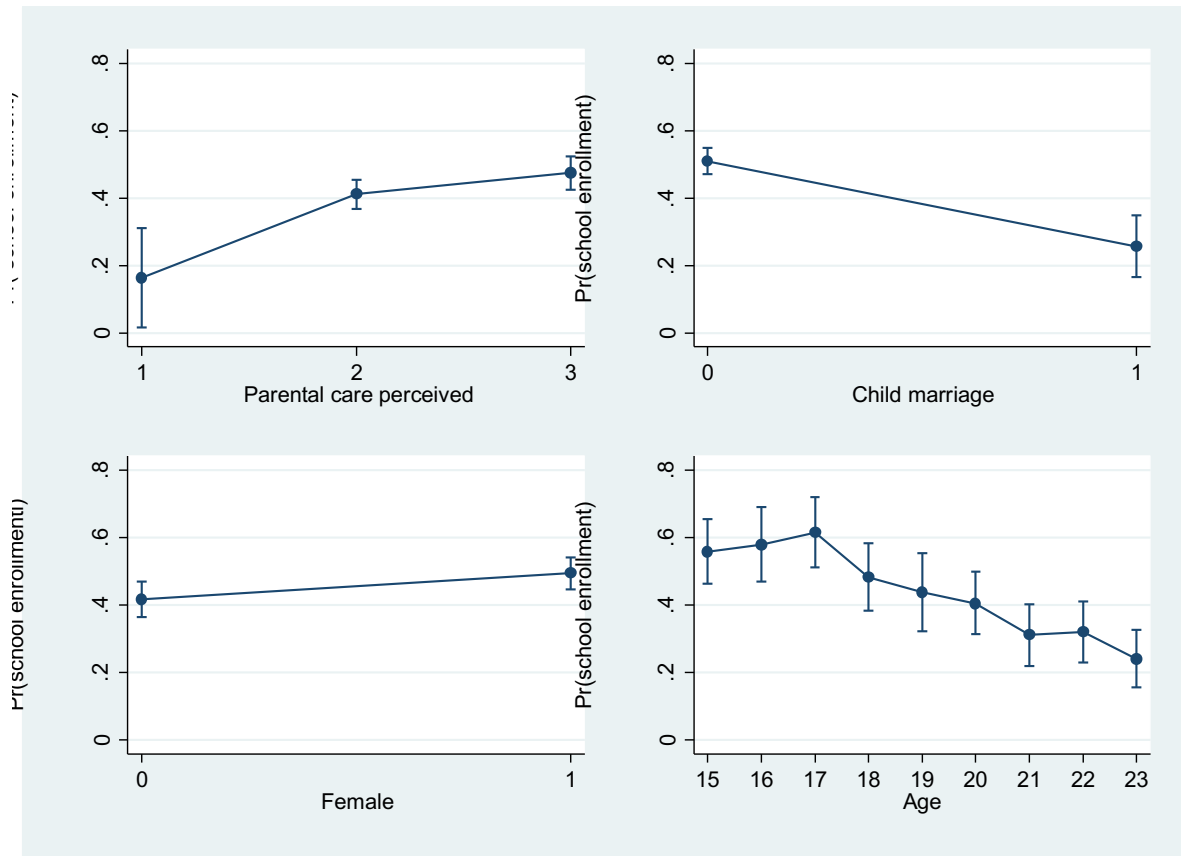


Figure 3-2. Predicted marginal probability of upper-secondary school enrollment by household wealth quintile, parental education, parent perceptions about upper-secondary education, and the level of village peer dropouts

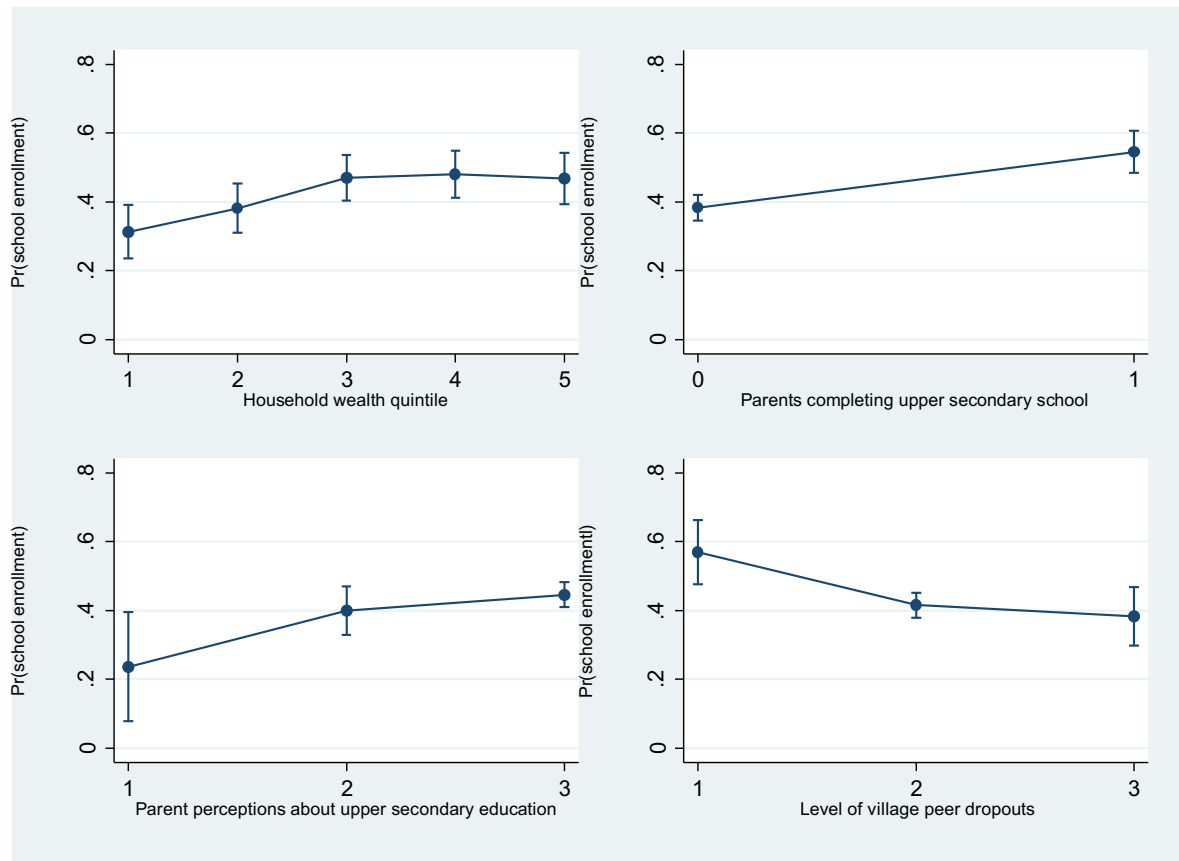


Figure 3-3. Sample distribution of reasons given for leaving school (N=378)

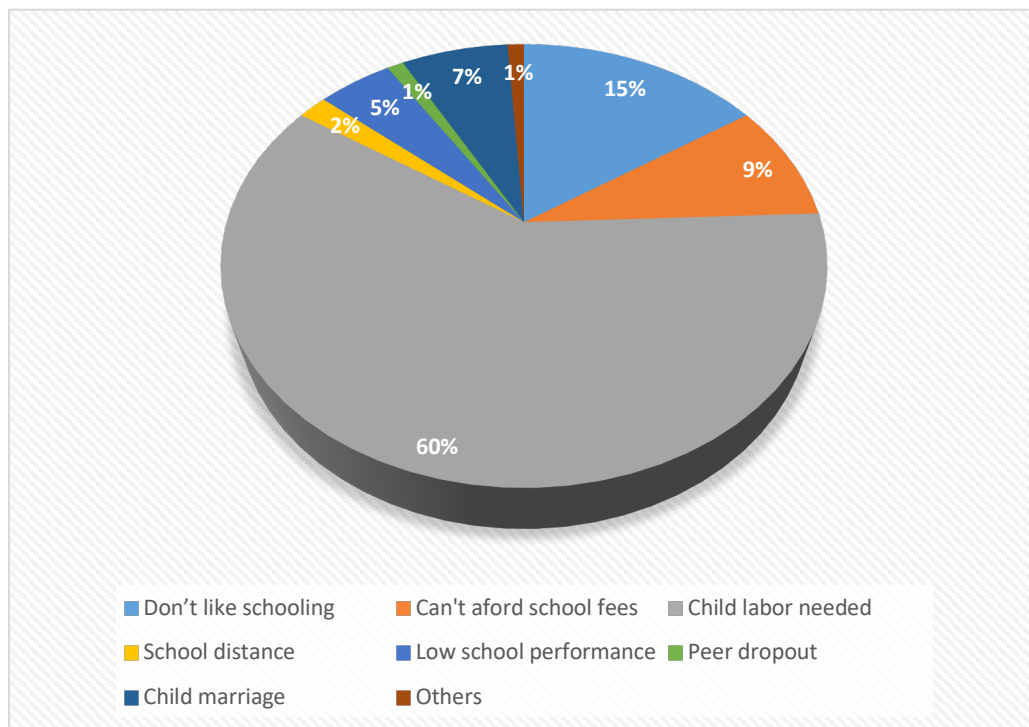


Table 3-4. Characteristics of the 42 focus group participants

Groups	School Status	Gender	No. Participant	Grades				
				5	9	10	11	12
Group 1	In-school	F	4	0	0	0	1	3
Group 2	In-school	M	5	0	0	4	0	1
Group 3	In-school	F	7	0	0	3	2	2
Group 4	In-school	M	5	0	0	1	2	2
Group 5	Dropouts	F/M	5	0	9	0	0	0
Group 6	Dropouts	F/M	6	0	5	0	1	0
Group 7	Dropouts	F/M	6	1	5	0	0	0
Group 8	Dropouts	F/M	4	0	4	0	0	0

Table 3-5. Characteristics of the Thai youths participating in the intensive interview

Participants	School Status	Gender	YOB	Grades
Child 1	Drop out	M	1998	Grade 9
Child 2	Drop out	F	1999	Grade 9
Child 3	In school	F	1998	Grade 12
Child 4	In school	M	2000	Grade 10
Child 5	In school	M	1998	Grade 12
Child 6	In school	F	1999	Grade 11
Child 7	Drop out	M	1999	Grade 9
Child 8	Drop out	F	2000	Grade 9
Child 9	Drop out	M	1998	Grade 9
Child 10	Drop out	M	1999	Grade 9
Child 11	Drop out	M	1998	Grade 9
Child 12	In school	F	1999	Grade 11
Child 13	In school	M	1999	Grade 11
Child 14	In school	F	1999	Grade 10
Child 15	In school	M	1998	Grade 12
Child 16	Drop out	M	2000	Grade 9
Child 17	Drop out	F	1998	Grade 9

Table 3-6. Characteristics of the Thai youth's parents participating in the intensive interview

Participants	Gender	YOB	Grades
Parent 1	M	1975	Grade 3
Parent 2	F	1979	Grade 3
Parent 3	F	1975	None
Parent 4	M	1977	Grade 1
Parent 5	M	1966	Grade 7
Parent 6	F	1980	Grade 9
Parent 7	M	1975	Grade 5
Parent 8	F	1977	None
Parent 9	F	1981	None
Parent 10	F	1972	None
Parent 11	M	1973	Grade 3
Parent 12	M	1977	None
Parent 13	F	1977	Grade 4
Parent 14	M	1953	Grade 9
Parent 15	M	1968	Grade 5
Parent 16	M	1971	Grade 5
Parent 17	F	1965	Grade 5

Table 3-7. Characteristics of teachers participating in the intensive interview

Participants	School	Gender	YOB	Ethnicity	Education level	Teaching experiences
Teacher 1	Lower-secondary	M	1982	Thai	Bachelor	8 years
Teacher 2	Upper-secondary	F	1974	Thai	Bachelor	18 years
Teacher 3	Lower-secondary	M	1980	Thai	Bachelor	10 years
Teacher 4	Upper-secondary	M	1976	Kinh	Bachelor	14 years

Chapter 4. Conclusion and Recommendations

4.1. Conclusion

For over three decades, while transforming itself from a centrally planned to a market-driven economy, Vietnam has achieved significant progress in many aspects of development. This includes economic growth, poverty reduction, and education achievements. However, ethnic inequality not only persists but has increased (World Bank, 2012). Education is considered one of the key ways of breaking intergenerational chains of poverty and promoting socio-economic development. However ethnic disparities increased at the upper-secondary education despite the government's significant efforts. While many studies have explored attributes to children's educational outcomes (Baulch et al., 2010; Tran, 2016; World Bank, 2011), little is known about factors behind the increases in Vietnam's ethnic educational disparities after the country's socioeconomic transformations.

This dissertation has attempted to illuminate ethnic disparities in upper-secondary education in Vietnam over the 20 years since its market-based transformation. My second chapter on “Ethnic Disparities in Education after Vietnam’s Socioeconomic Transformations: Family Background and Residential Differences,” used data from a set of nationally representative surveys, the Vietnam Household Living Standard Surveys, including 9 waves of data collected between 1992 and 2014. I used mediation analysis to examine factors contributing to increases in ethnic educational disparities at the upper-secondary level. The findings confirmed that the ethnic disparities in three outcomes — upper-secondary enrollment, attendance, and completion — continue increasing. While residential differences slightly contributed to these disparities, differences in family background, especially parental education and the rise in ethnic-based income inequality at the household level, explained these growing

ethnic-based education disparities. In addition, the study found that while household income contributions to the ethnic educational disparities tended to decrease, the role of parental education concerning the ethnic-based educational disparities increased.

In my third chapter, “Ethnic Minority Educational Success: Understanding Accomplishments in Challenging Settings,” I used a mixed-methods approach. My goal was to illuminate various risks and protective factors in ethnic minorities’ upper-secondary education and to show how these factors operate. Drawing from qualitative and quantitative data of the *Families and Communities in Transition* study, the study focuses on factors shaping the upper-secondary education of youth from the Thai ethnic group, the second-largest ethnic minority group in Vietnam. The study found several challenges to ethnic minorities’ upper-secondary school enrollment and retention. Such challenges included. early marriage, poverty, uneducated parents, low parental engagement in the child's education, school distance, being bullied or teased, and being encouraged by friends to drop. More importantly, the study provided evidence that holding a positive attitude toward schooling oneself, and enjoying effective support from parents, relatives, and peers, can prevent ethnic minority students from dropping out of school and promote their educational success.

My overall message calls attention that Vietnam needs a broad education development consisting of economic, social, and cultural dimensions at both the macro- and micro-levels. This will be necessary to reduce ethnic educational disparities. That does not mean recent educational programs have been a failure in serving ethnic minorities. In fact, thanks to the government’s efforts, ethnic minority students living in remote, rural and mountainous areas now are more able to attend schools than they could in 20 years ago. Ethnic educational disparities due to geographic difference have been reduced significantly. However, ethnic disparities in upper-

secondary education have increased despite several programs implemented to promote ethnic minorities. More schools have been built, and minority students can get tuition exemptions, stay in free dormitories, receive money and rice for their school attendance, and get a “bonus score” in the national entrance exam to colleges. However, school attendance rates at upper-secondary education among ethnic minorities nevertheless decreased. Unless Vietnam enacts a broader education development plan, which is involved the government, families, schools, and communities, ethnic minorities will continue to lag significantly behind the majority.

4.2. Policy Recommendations

This thesis has revealed Vietnam’s ethnic disparities at the upper-secondary education over the last two decades, as well as the risks contributing to the disparity, and the factors promoting ethnic minority’s educational success. Building on these findings, my dissertation can be used to formulate policy recommendations across all levels and that can change the factors influencing educational outcomes. At the macro-level, my policy recommendations are to promote both educational opportunities and the demand for education at the upper-secondary level. At the micro-level, my recommendations emphasize improved school access and school quality, education resources and their accessibility, in order to increase motivation for schooling among ethnic minority students.

Macro-policy

Expanding the system of upper-secondary school to communes.

My dissertation reveals that the role of geographic factors contributing to ethnic, educational disparities has decreased for over two decades. Nevertheless, school distance remains one of the barriers to ethnic minority’s school attendance at the upper-secondary

education. Ethnic minorities mainly reside in rural communes, while upper-secondary schools are only available in district towns. Thus, it is necessary to expand these schools to the commune level to promote school attendance among ethnic minority students. Vietnam has already demonstrated that expanding primary schools to villages can lead to the universalization of primary education. However, due to low profitability, expanding schools in ethnic minority areas have not attracted much investment from the private sector.

A potential solution for attracting private investment to expand educational system is to use public-private partnership infrastructure projects, such as the Built-Transfer- Lease (BTL) and Built – Transfer (BT) projects. In these projects, based on the demand of schools, the government first calls for investments from the private sector and private investors build schools. After schools are built, the government can take it over a lease to operate (BTL) or just operate (BT) by giving the investors other preferential investment opportunities. BTL projects have been implemented in the Republic of Korea to improve educational facilities in the 2000s. Introduced in 2005 to meet the high demand for education in Korean, there were 137 BTL projects for building elementary, middle, and high school facilities across the entire the Republic of Korea (Kim, Kim, Shin, & Lee, 2011). Given that the state budget for educational infrastructure is limited, especially in rural and remote areas in Vietnam, BTL and BT can be an appropriate solution to expand the system of upper-secondary school to communes. In both models, the government needs not only to encourage the private sector to invest in upper-secondary schools in rural and remote areas by an appropriate incentive mechanism but also to consider educational infrastructure investments as private sector's social responsibility.

Increasing employment opportunities for ethnic minorities.

Parents and students themselves often consider the economic returns expected on education in order to make a rational decision about schooling. Thus, the more job opportunities there are, with higher income for people who complete the upper-secondary education and above, the more students will attend upper-secondary schools. Studies showed that, compared to the majority, Vietnam's ethnic minorities are more likely work in informal work and receive lower economic returns to their education (Baulch et al., 2010; OECD Development Centre, 2017). My dissertation also showed that low economic returns discourage ethnic minority from attending upper-secondary schools. Therefore, enhancing ethnic minority employment is necessary to promote their upper-secondary education.

In order to enhance employment for ethnic minorities, equal opportunity legislation and affirmative actions programs are often needed. First, equal opportunity legislation is to prevent discrimination due to ethnic ethnicity. Successful lessons from Cuba and Ecuador (Baulch et al., 2010) suggest that equal opportunity legislation can eliminate the ethnic gap in employment. Second, affirmative action programs which give favored treatment to ethnic minority populations in employment also can promote ethnic minority's schooling. Vietnam currently ensures a percentage of ethnic minority in government jobs. However, employment of ethnic minorities in the business sector, especially in private segment, is still low. Therefore, affirmative action programs, in which the government requires businesses to employ a certain percentage of ethnic minority employees, are necessary for some areas that highly ethnic minority residents. The government can also encourage businesses to hire ethnic minority by giving them preferential loans or lower interest if they employ a certain percentage of ethnic minority employees.

In addition to equal opportunity legislation and affirmative actions programs, improving integrated rural development programs also can enhance ethnic minority employment. These mainly focus on infrastructure provision and economic development within Vietnam's poorest areas. Current programs supplement the social and economic shortage and are based on needs of the ethnic minority community. However, experiences in Central Asia and Latin America suggest that local ethnic minorities must have true ownership over the program process with the capacity to sustain and manage new infrastructure investment. Community development should be based on local resources and capabilities rather than the deficiencies (Gershberg, 2014). Therefore, the government should provide support for local capabilities, and empower minority leaders to develop their development programs based on their social, economic, cultural, human capital capacities. For example, instead of investments in new factories which are not able to recruit local labors, the government provided support to expand local businesses. Doing this not only can attract more local people as project participants, but also can sustain their development.

Policy targeting school factors

Simplifying the upper-secondary school registration.

School registration process also signals mass educational opportunity. In Vietnam, to be able to enroll upper secondary school, most students first have to register for an entrance exam in a school and pass that exam. For someone does not pass the entrance exam, his or her alternative path to the upper-secondary education is to go from lower-secondary into either the vocational education or private schools by registration without any additional exam. The entrance exam score accepted by upper-secondary schools varies, especially between rural schools and urban schools. Given economic disadvantage, ethnic minority students often have two choices: regular public school or vocational education.

My dissertation showed that, because of low rates of student enrollment, the vocational education was not often available at the district level. Regarding the regular upper-secondary schools, the study also found that ethnic minority students faced difficulties even before they get the admission to upper-secondary schools. Although ethnic minority students can get financial subsidies for schooling, they still have to pay the registration fee. In addition, they have to travel to the district center where upper-secondary schools are located to attend the exam. That is also costly. Furthermore, while most of the majority students often attend extra-classes for the entrance exam preparation, many ethnic minorities are not able to do so. It thus is understandable when many ethnic minority students decide to drop out before registering for the entrance exam despite they all know that they can get certain “bonus score” for their exam and subsidies for the upper-secondary education.

Therefore, to promote the upper-secondary school enrollment, the registration process should be simplified. First, registration fees should be waived for ethnic minority students who would like to go to school beyond lower-secondary school. Second, even though there has been no study examining the entrance exam on Vietnam's ethnic educational disparities, experiences in China, a country that applies a very similar entrance exam system, showed that entrance exam might bias against ethnic minority students (Loyalka et al., 2014). Thus, the entrance exam should be redesigned by taking into account ethnic minority's cultural values or replaced by a school-oriented admission mechanism which gives a chance to educators, teachers, parents working together to help students decide whether regular education or vocational education is appropriate for them. If the replacement is not possible, an alternative path would be to shift the entrance exam to the lower-secondary school, where most ethnic minority students attend, and schools also should provide free and high-quality exam preparation.

Improving the quality of boarding schools at the district level.

Since most of the ethnic minority students reside away from school and have to attend boarding upper-secondary schools, the quality of boarding schools plays an important role in attracting ethnic minority students and keeping them until the graduation. At the upper-secondary education, Vietnam's boarding school system for ethnic minorities exists mainly at two administrative levels: the provincial boarding school, and the district boarding school. The provincial boarding school often offers good quality teachers and educational facilities, but they only accept a small number of ethnic minority students who achieve the best performance at the lower-secondary education. The district boarding school, where most ethnic minority students enroll, has lower quality compared to the provincial boarding school. My dissertation showed that the dormitory of district boarding schools often did not provide enough housing for students and low-quality food services. Ethnic minority students living on campus also faced bullying and robbery. Lack educational facilities such as library and educational tools are also common in the district boarding school. These challenges have become more serious to ethnic minority students when the government decided to close district boarding schools at upper-secondary education in 2013.

In the short-run, before provincial boarding schools are able to carry all ethnic minority students, improving the quality of district boarding schools is critical to ensure schooling opportunities for ethnic minorities students. First, in addition to improving existing dormitories, local authorities should work with schools and housing providers to create housing services which provide good quality and secure housing for ethnic minority students who are not able to stay in the school dormitories. Second, educational facilities such as the library, educational technology should be more available. School facility enhancement not only helps students to

improve their academic achievement but also reduce stress and depression due to living apart from their family.

Improving cultural inclusive development in education.

Cultural inclusive development refers to the development recognize and support the existing cultural differences and make special efforts to be inclusive of all ethnic minorities, especially those who are most marginalized (World Bank, 2009). Although language differences were less important to schooling at the upper-secondary education than at the primary and the lower-secondary education, they still influence ethnic minority student's self-efficacy and their participation in school activities. Cultural differences may become more important at the upper-secondary education since students have to leave their family and community to stay in the district centers to attend upper-secondary school. Cultural differences challenge ethnic minority students to enjoy their school lives, particularly when they lack the sense of belonging to school even feel of unwelcome to schools.

Therefore, to improve culturally inclusive development in education, it is necessary to expand bilingual education, especially at the primary education in ethnic minority areas. In addition, despite the fact that education policy should highly centralized, schools should give some space for local and ethnic minority culture in determining the school curriculum, especially extra-curriculum of the boarding schools. The presence of ethnic minority cultures in school curriculum can create student's sense of belonging. Moreover, since teachers who are ethnic minorities understand language and local culture, more ethnic minority teachers need to be trained and effectively used.

Creating an effective transition period for ethnic minority students moving from lower-secondary schools to upper-secondary schools.

While the transition period from one school to other is very important and receives attention from parents and educators in many countries, this issue has received little consideration in Vietnam. It is common that ethnic minority students are placed in upper-secondary schools which are far away from home and they must start a new life without any serious preparation. Reports also show that the highest rate of school dropout among ethnic minority students occurs in the transition from lower-secondary schools to upper secondary schools (Baulch et al., 2010; World Bank, 2011). Thus, an effective transition period needs to be considered to support ethnic minority students.

To have an effective transition period, schools and families need to work together to help ethnic minority students who are living apart from their family to have their best preparation. Students should have a period before a new school year officially starts to get to know the schools, friends, and living environment either on campus or off campus. Students should also be provided some basic living-skills training. Schooling counseling services need to play an active role in providing support to students during the transition.

Policy aimed at family factors of dropping out

Enhancing law enforcement against early marriage.

Child marriage causes several problems to health, and it limits educational and economic opportunities especially for girls. Although Vietnam's Law on Marriage and the Family sets the minimum age of marriage for men at 20 and women at 18, child marriage in practice persists among ethnic minorities (UNFPA Vietnam, 2016). The original and common causes of this

problem result from the traditional cultural norm of early marriage as supplementing the family's labor and maintaining the family line. In addition to that, a romantic relationship without effective parental control recently also challenged the law enforcement against child marriage.

To resolve this problem, first, it is necessary to improve the public awareness of child marriage, especially in ethnic minority areas. Media campaigns should focus on the consequences of child marriage and use vernacular ethnic minority languages. The campaigns also need to take place seriously in secondary schools via extra curriculum and in ethnic minority communities through diversity means such as local radio and television broadcasts, posters, and community meetings.

Second, enhancing law enforcement against child marriage need both incentive and better monitoring mechanism. Incentives such as wedding preparation support or health consultant should be given to couples with legal marriage. The current monitoring mechanism of *Law on Marriage and Family* is implemented through issuing the marriage certificate. This mechanism could not effectively prevent child marriage because young couples can avoid detection of their illegal marriage by waiting until they reach the legal age to apply the marriage certificate. Therefore, a better mechanism should allow monitoring the law enforcement at the village basis. Educational fines should be made to young couples with illegal marriage and their parents. Since young couples traditionally move to live with the husband's parents after their marriage, this would provide a strong control over their children under age 18.

Improving the effectiveness of the government subsidies through disturbing financial support beginning of, instead of after, each semester.

Schooling costs are the most common challenges to ethnic minority families to send their children to upper-secondary schools. To promote ethnic minority's education, the government

provides a subsidy package including 575,000 VND (approximately 26 USD) and 15 kg of rice each month. However, it is the fact that the subsidy package is often delivered at the end of each semester or even at the end of each school year. That causes two major problems. First, impoverished ethnic minority families who lack the requisite cash cannot send their children to school. Second, when ethnic minority students receive money and rice for the whole semester, they were not able to effectively store the rice and put money in a safe place. Some can send the rice and money back to their parents, many often end up with bring the rice to market to sell and spend the money out of their education expenses such as playing games, entertains or parties. Both of the ways are not efficient and fitted well with the purposes of the government support.

To improve the effectiveness of the government subsidies, first, the subsidies should be disturbed at the beginning of each month so that the subsidy not only possibly cover monthly schooling costs of ethnic minority students but also play the role of the incentives encouraging them attending school. Second, if the delay due to the processing time of financial support that is not able to change, the local authority and the school should work together with a local bank to create a loan for the school to be able to provide the subsidy package to students in advance before the actual government support arrived. Finally, technical assistance for ethnic minority students and their parents is necessary to help them accessing effectively to all available resources for education.

Encouraging ethnic minority students attending upper-secondary through financial incentives for the family.

Despite the tuition waiver and stipend subsidies from the government, many ethnic minority students still are not able to attend upper-secondary school. One of the most common reasons is they children help their family both in the form of household chores and in the form of

additional income. Therefore, financial incentives for their families may encourage parents sending their children attending upper-secondary education. Experiences in developing countries, such as Mexico, Colombia, Ecuador, Costa Rica, Jamaica, Pakistan, and Kenya, suggest that Cash Conditional Transfer (CCTs) programs may promote ethnic minority's schooling (De Brauw & Hoddinott, 2011; Heinrich, 2007; Robertson et al., 2012; Slavin, 2010). CCTs refer to giving cash transfers to the family that meets specific conditions or undertake certain actions such as ensuring school-aged children go to school. Studies on CCTs have shown that these programs were effective to children in rural areas when they more efficiently targeted the early secondary years, where many disadvantaged students begin to leave school, often to take very low-paying jobs. At that point, the incentives effectively make school a financially attractive alternative to work. Consequently, students chose to attend school rather than to work (Slavin, 2010).

Adapting the CCTs model can encourage ethnic minority students attending upper-secondary education. Vietnam can run a program that provides ethnic minority parents a monthly incentive. A part of the incentive can be sent to parents each month. The rest of the incentive is saved in an account managed by CCTs. The savings are only given to the parent when their child graduates. This mechanism causes parents to have more commitment to their child's studies until graduation. Also, students and their families have a small fund after completing upper-secondary school.

Enhancing ethnic minority parents' awareness about benefits of upper-secondary education.

In addition to providing financial resources, parents contribute to children's education through helping children with their homework and serving as education role model. These attributes are not advantages of ethnic minority parents, who are often poorly educated.

However, parents can also influence their children's education through raising their children's education motivation by often discussing benefits of education. The higher attitude toward to education parents have, the higher probability of upper-secondary school enrollment their children gain. Therefore, enhancing ethnic minority parent's awareness about benefits of education can improve children's education aspiration.

To enhance the parent's awareness about education benefits, first, it is necessary to improve quality of the Parents-Teacher Organization meetings. In addition to its current function that parents got informed about their children's school performance and family obligations of contribution to schools, it is very important to attend these meeting because of the chances to raise parents awareness about education benefits. Parents should be provided information about benefits that families and students receive if their children attend upper-secondary schools, resources that they may access to be able to support their children's schooling, higher education and future job opportunities that their children can reach after completing upper-secondary education. Since ethnic minority parents may not be able to read, information needs to be delivered via parents – teacher communication and all documents should be provided for the references.

Second, since cell-phones are now widely available in ethnic minority areas, a telephone helpline connecting the school and parents should be created. Via this form of communication, parents and other family members are enable to have instant updates about children's schooling, especially during the transition from lower-secondary to upper-secondary school, in which school dropout often occurs.

Third, a media campaign targeting ethnic minority parents is needed. Similar to the media campaign against child marriage, the campaign must use effectively ethnic minority languages

considering local cultural values. The messages should be sent via mass media including posters, and local radio and television broadcasts, and community meetings. Among parents, mothers should be a priority target given that studies showed mothers often have more influence on children's education than father (Chudgar & Shafiq, 2010).

Policies targeting students

Improving ethnic minority students' attitude toward upper-secondary education.

Support from the government, the family, and the school are prerequisites for students to be able to attend schools. Other crucial factors are student's academic performance and their attitude toward education. In Vietnam's ethnic minority context, student attitude toward education plays an important role in whether they attend the school given that students, not their parents, are often the ones making school decisions at the upper-secondary education. Therefore, improving students' attitude to education is necessary in order to promote ethnic minority's upper-secondary schooling.

Student attitudes toward education can be improved through two different ways: Raising student's awareness of education benefits and an appropriate reward mechanism to upper-secondary school attendance. First, the success of the "Benefits of Staying in School" program implemented in Brazil (Graeff-Martins et al., 2006) suggests ethnic minority student's attitude to education can be raised through several educational activities at upper-secondary schools, especially grade 10th in which most school dropout occurs. Particularly, it is useful to have some juniors, seniors, and college students who are ethnic minorities, come to share with freshman upper-secondary schools about their personal life experiences relating schooling and how they overcome challenges in schooling and help students visualize benefits of education. Such sharing is very important because they share similar cultures and values and may have experienced

similarly in schooling. Using a similar approach, it is also necessary that upper-secondary students motivate 9th graders, who are in the transition from the lower-secondary education to the upper-secondary education, through meetings before they complete the lower-secondary school and register for the entrance exam.

Second, student's attitude also can be improved through an appropriate reward mechanism. Since there is a large dropout rate among ethnic minority students at the upper-secondary level, attendance incentives should be used to promote their schooling. Attendance incentives should be simple rewards such as recognition through certificates, letters sent to the home and community highlighting the student's achievement.

To conclude, by examining ethnic disparities in education in Vietnam over two recent decades, the dissertation reveals that ethnic educational disparities increased at the upper secondary education level. Factors contributing to the growing gap include: early marriage, poverty, low-educated parents, low parental engagement in the child's education, school distance, being bullied or teased, and being encouraged by friends to drop out. The dissertation also confirms that holding a positive attitude toward schooling and enjoying effective support from parents, relatives, and peers can prevent ethnic minority students from dropping out of school and promote their educational success.

In order to reduce ethnic educational disparities and promote ethnic minorities' educational success, broad policies consisting of economic, social, and cultural dimensions at both macro- and micro-levels are needed. At the macro-level, policies should focus on expanding the upper secondary school to communes. Also, Vietnam should promote employment for ethnic minority completing the upper secondary education through equal opportunity legislation and

affirmative actions. At the micro-level, policies should aim to simplify school registration process, improve quality of boarding schools, emphasize cultural inclusive development in education and the transition period from lower-secondary to upper-secondary school. At the family level and individual level, there should be a campaign to promote greater awareness of education benefits. Finally, effective government subsidies and incentives should be priority policies to promote ethnic minority's education success at upper secondary level.

Appendix. Chapter 2 - Additional Tables on the KHB Decompositions

Table A-1. KHB Decomposition of the total effect of the minority on educational outcomes into the direct effect and the indirect effect via residential factors and family background, controlling for gender, age, and years of the survey.

	Upper-secondary school attendance		Upper-secondary school enrollment		Upper-secondary school completion	
	Model 1A	Model 1B	Model 2A	Model 2B	Model 3A	Model 3B
<u>Coefficients</u>						
Total effect	-0.82*** (0.04)	-0.89*** (0.04)	-1.30*** (0.04)	-1.42*** (0.04)	-1.53*** (0.05)	-1.71*** (0.06)
Direct effect	-0.77*** (0.04)	0.13* (0.05)	-1.21*** (0.05)	-0.35*** (0.05)	-1.43*** (0.06)	-0.53*** (0.07)
Indirect effect	-0.05* (0.02)	-1.02*** (0.04)	-0.10*** (0.02)	-1.07*** (0.04)	-0.11*** (0.03)	-1.18*** (0.05)
Indirect effect via:						
Region						
<i>Northern Midlands and Mountains</i>	-0.06 (0.02)	0.05 (0.02)	-0.12 (0.02)	-0.04 (0.02)	-0.19 (0.03)	-0.11(0.03)
<i>North-Central Coast and South-Central</i>	0.03(0.00)	-0.02 (0.00)	0.04 (0.00)	0.00(0.00)	0.05(0.01)	0.01 (0.00)
<i>Central Highlands</i>	-0.06 (0.01)	0.00 (0.00)	-0.08(0.01)	-0.04 (0.01)	-0.11(0.01)	-0.06 (0.01)
<i>Southeast</i>	0.08(0.01)	0.01(0.00)	0.09((0.01)	0.03(0.01)	0.14(0.01)	0.05(0.01)
<i>Mekong River Delta</i>	0.13 (0.01)	0.03 (0.00)	0.15(0.01)	0.05 (0.01)	0.20(0.02)	0.08(0.01)
Urban	-0.16(0.01)	-0.06 (0.01)	-0.18(0.01)	-0.07(0.01)	-0.19(0.02)	-0.08(0.01)

Household income		-0.26 (0.01)		-0.26 (0.02)		-0.25 (0.02)
Father education		-0.32 (0.01)		-0.32 (0.02)		-0.34(0.02)
Mother education		-0.34 (0.01)		-0.31 (0.02)		-0.34(0.02)
Nuclear family		0.00(0.00)		0.01 (0.00)		-0.02 (0.01)
Dependency ratio		-0.03 (0.00)		-0.01 (0.00)		-0.03 (0.01)
Sibling		-0.07 (0.01)		-0.11(0.00)		-0.10(0.01)

*Note: Standard errors in parentheses, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.*

Table A-2. KHB Decomposition of the total effect of the minority on upper-secondary school attendance into direct effect and an indirect effect via residential factors and family background, controlling for gender, age, and years of the survey (1992 – 2014)

	1992	1998	2002	2004	2006	2008	2010	2012	2014
Coefficients									
Total effect	-0.74*** (0.21)	-0.26 (0.15)	-0.60*** (0.08)	-0.35** (0.11)	-0.67*** (0.11)	-1.01*** (0.11)	-1.49*** (0.12)	-1.42*** (0.13)	-1.57*** (0.14)
Direct effect	0.13 (0.22)	0.67*** (0.17)	0.62*** (0.10)	0.49** (0.16)	0.32* (0.17)	0.21 (0.15)	-0.37* (0.17)	-0.60** (0.18)	-0.40* (0.20)
Indirect effect	-0.87*** (0.11)	-0.93*** (0.10)	-1.21*** (0.07)	-0.83*** (0.11)	-0.98*** (0.12)	-1.22*** (0.12)	-1.12*** (0.12)	-0.82*** (0.14)	-1.17*** (0.15)
Indirect effect via:									
Region									
<i>Northern Midlands and Mountains</i>	-0.11 (0.06)	0.04 (0.08)	0.09 (0.05)	0.24 (0.09)	0.11 (0.09)	-0.10 (0.10)	0.00(0.08)	0.12 (0.11)	0.08 (0.10)
<i>North-Central Coast and South-Central</i>	0.01 (0.02)	-0.05 (0.02)	-0.09 (0.01)	-0.06 (0.02)	-0.03 (0.02)	-0.03 (0.02)	0.00 (0.00)	0.01 (0.01)	0.00 (0.00)
<i>Central Highlands</i>	-0.06 (0.06)	0.05 (0.05)	0.05 (0.02)	0.04 (0.01)	0.00 (0.02)	0.00 (0.01)	0.00 (0.01)	-0.03 (0.02)	-0.06 (0.02)
<i>Southeast</i>	0.02 (0.02)	0.03 (0.02)	-0.01 (0.01)	-0.01 (0.01)	0.02 (0.02)	0.01 (0.02)	0.01 (0.02)	0.03 (0.02)	0.06 (0.04)
<i>Mekong River Delta</i>	0.03 (0.02)	0.03 (0.01)	0.01 (0.01)	0.00 (0.01)	0.05 (0.01)	0.03 (0.01)	0.01 (0.02)	0.09 (0.02)	0.07 (0.03)
Urban	-0.10 (0.02)	-0.07 (0.03)	-0.03 (0.01)	-0.03 (0.02)	-0.04 (0.02)	-0.10 (0.02)	-0.02 (0.03)	0.01 (0.03)	0.02 (0.04)
Household income	-0.40 (0.06)	-0.66 (0.07)	-0.34 (0.03)	-0.25 (0.04)	-0.19 (0.04)	-0.12 (0.03)	-0.01 (0.06)	-0.12 (0.06)	-0.22 (0.08)
Father education	-0.10 (0.02)	-0.09 (0.03)	-0.30 (0.03)	-0.26 (0.04)	-0.40 (0.05)	-0.47 (0.05)	-0.09 (0.06)	-0.41 (0.07)	-0.42 (0.08)

Mother education	-0.10 (0.02)	-0.21 (0.04)	-0.34 (0.03)	-0.31 (0.05)	-0.31 (0.01)	-0.30 (0.05)	-0.06 (0.06)	-0.46 (0.01)	-0.63 (0.09)
Nuclear family	0.00 (0.00)	0.03 (0.01)	-0.02 (0.01)	-0.01 (0.02)	0.01 (0.01)	0.01 (0.01)	0.00 (0.01)	0.01 (0.01)	-0.04 (0.02)
Dependency ratio	-0.05 (0.02)	-0.02 (0.01)	-0.09 (0.02)	-0.06 (0.02)	-0.04 (0.01)	-0.04 (0.01)	0.01 (0.02)	0.02 (0.02)	0.08 (0.02)
Sibling	0.00 (0.01)	0.01 (0.01)	-0.13 (0.02)	-0.12 (0.03)	-0.15 (0.03)	-0.09 (0.02)	-0.01 (0.03)	-0.09 (0.03)	-0.11 (0.05)

*Note: Standard errors in parentheses, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.*

Table A-3. KHB Decomposition of the total effect of the minority on upper-secondary school enrollment into direct effect and an indirect effect via residential factors and family background, controlling for gender, age, and years of the survey (1992 – 2014)

	1992	1998	2002	2004	2006	2008	2010	2012	2014
Coefficients									
Total effect	-2.54*** (0.39)	-1.72*** (0.19)	-1.59*** (0.10)	-1.26*** (0.12)	-1.38*** (0.11)	-1.34*** (0.12)	-1.56*** (0.12)	-1.54*** (0.13)	-1.56*** (0.14)
Direct effect	-1.36*** (0.39)	-0.61** (0.21)	-0.30** (0.11)	-0.31* (0.15)	-0.25 (0.15)	-0.17 (0.15)	-0.55*** (0.16)	-0.73*** (0.18)	-0.51** (0.19)
Indirect effect	-1.18*** (0.19)	-1.11*** (0.11)	-1.28*** (0.08)	-0.95*** (0.10)	-1.13*** (0.11)	-1.18*** (0.12)	-1.01*** (0.12)	-0.81*** (0.13)	-1.05*** (0.14)
Indirect effect via:									
Region									
<i>Northern Midlands and Mountains</i>	-0.27 (0.07)	-0.11 (0.08)	0.01 (0.05)	0.07 (0.07)	-0.06 (0.08)	-0.12 (0.09)	0.07 (0.08)	0.07 (0.10)	-0.05 (0.09)
<i>North-Central Coast and South-Central</i>	0.13 (0.03)	-0.02 (0.01)	-0.01 (0.01)	-0.04 (0.01)	0.01 (0.01)	-0.01 (0.02)	0.00 (0.00)	0.01 (0.01)	0.00 (0.00)
<i>Central Highlands</i>	-0.28 (0.15)	0.01 (0.01)	-0.03 (0.01)	0.00 (0.01)	-0.04 (0.01)	-0.01 (0.01)	-0.03 (0.01)	-0.05 (0.02)	-0.06 (0.02)
<i>Southeast</i>	0.16 (0.03)	0.05 (0.02)	0.01 (0.01)	0.00 (0.01)	0.03 (0.01)	0.02 (0.02)	0.01 (0.02)	0.04 (0.02)	0.08 (0.03)
<i>Mekong River Delta</i>	0.11 (0.03)	0.05 (0.02)	0.02 (0.01)	0.04 (0.02)	0.08 (0.02)	0.02 (0.01)	0.06 (0.02)	0.09 (0.02)	0.10 (0.02)
Urban	-0.14 (0.03)	-0.09 (0.02)	-0.03 (0.01)	-0.05 (0.02)	-0.03 (0.01)	-0.06 (0.02)	-0.12 (0.03)	0.01 (0.03)	-0.01 (0.04)
Household income	-0.55 (0.08)	-0.64 (0.07)	-0.36 (0.03)	-0.22 (0.03)	-0.22 (0.03)	-0.13 (0.03)	-0.09 (0.05)	-0.13 (0.06)	-0.18 (0.07)
Father education	-0.14 (0.03)	-0.11 (0.02)	-0.34 (0.03)	-0.29 (0.04)	-0.39 (0.05)	-0.45 (0.05)	-0.50 (0.06)	-0.41 (0.06)	-0.34 (0.07)

Mother education	-0.16 (0.03)	-0.23 (0.03)	-0.32 (0.03)	-0.29 (0.01)	-0.31 (0.04)	-0.29 (0.05)	-0.33 (0.06)	-0.38 (0.06)	-0.54 (0.09)
Nuclear family	0.00 (0.00)	0.04 (0.01)	-0.01 (0.01)	0.00 (0.01)	0.01 (0.01)	0.00 (0.01)	-0.02 (0.01)	0.02 (0.01)	-0.01 (0.02)
Dependency ratio	-0.05 (0.02)	-0.02 (0.01)	-0.03 (0.02)	-0.06 (0.02)	-0.03 (0.01)	-0.02 (0.01)	0.04 (0.02)	0.02 (0.01)	0.07 (0.02)
Sibling	-0.01 (0.03)	-0.03 (0.01)	-0.19 (0.02)	-0.12 (0.02)	-0.17 (0.03)	-0.13 (0.03)	-0.11 (0.03)	-0.10 (0.03)	-0.13 (0.05)

*Note: Standard errors in parentheses, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.*

Table A-4. KHB Decomposition of the total effect of the minority on upper-secondary school completion into direct effect and an indirect effect via residential factors and family background, controlling for gender, age, and years of the survey (1992 – 2014)

	1992	1998	2002	2004	2006	2008	2010	2012	2014
<u>Coefficients</u>									
Total effect	-1.83*** (0.55)	-1.49*** (0.33)	-1.91*** (0.15)	-1.55*** (0.17)	-1.85*** (0.16)	-1.83*** (0.16)	-1.93*** (0.17)	-1.92*** (0.16)	-1.81*** (0.16)
Direct effect	-1.29* (0.57)	-0.32 (0.36)	-0.38* (0.16)	-0.50* (0.21)	-0.62** (0.20)	-0.79*** (0.20)	-0.61** (0.22)	-0.63** (0.22)	-0.51* (0.21)
Indirect effect	-0.54*** (0.14)	-1.16*** (0.19)	-1.53*** (0.10)	-1.04*** (0.15)	-1.22*** (0.15)	-1.03*** (0.15)	-1.33*** (0.16)	-1.29*** (0.18)	-1.30*** (0.17)
Indirect effect via:									
Region									
<i>Northern Midlands and Mountains</i>	-0.24 (0.10)	-1.49 (0.12)	-0.06 (0.06)	0.14 (0.09)	0.01 (0.10)	-0.12 (0.11)	-0.18 (0.11)	-0.27 (0.12)	-0.19 (0.13)
<i>North-Central Coast and South-Central</i>	0.09 (0.04)	-0.32 (0.02)	-0.01 (0.01)	-0.02 (0.01)	-0.02 (0.01)	0.01 (0.01)	0.00 (0.00)	0.03 (0.02)	0.02 (0.02)
<i>Central Highlands</i>	– ³	-1.16 (0.04)	-0.02 (0.02)	-0.02 (0.02)	-0.01 (0.02)	-0.02 (0.02)	-0.04 (0.02)	-0.10 (0.03)	-0.10 (0.03)
<i>Southeast</i>	0.26 (0.05)	-1.49 (0.04)	0.02 (0.01)	0.04 (0.02)	0.00 (0.02)	0.07 (0.03)	0.07 (0.03)	0.05 (0.03)	0.10 (0.03)
<i>Mekong River Delta</i>	0.09 (0.07)	-0.32 (0.04)	0.04 (0.01)	0.03 (0.02)	0.07 (0.02)	0.10 (0.03)	0.08 (0.02)	0.10 (0.03)	0.07 (0.02)
Urban	-0.08 (0.04)	-1.16 (0.03)	-0.03 (0.01)	-0.09 (0.02)	-0.04 (0.02)	-0.09 (0.03)	-0.11 (0.03)	-0.04 (0.03)	-0.01 (0.04)
Household income	-0.50 (0.10)	-1.49 (0.12)	-0.50 (0.04)	-0.32 (0.05)	-0.21 (0.05)	-0.13 (0.05)	-0.06 (0.06)	0.00 (0.07)	-0.22 (0.08)

³ Since small sample in Central Highlands (2.3% of the total sample) causes convergence not achieved by Stata, Central Highlands was eliminated in the analysis.

Father education	-0.11 (0.04)	-0.32 (0.04)	-0.37 (0.04)	-0.24 (0.04)	-0.40 (0.06)	-0.38 (0.06)	-0.48 (0.07)	-0.53 (0.07)	-0.33 (0.08)
Mother education	-0.17 (0.04)	-1.16 (0.04)	-0.32 (0.03)	-0.30 (0.05)	-0.37 (0.06)	-0.26 (0.05)	-0.44 (0.07)	-0.43 (0.07)	-0.55 (0.10)
Nuclear family	-0.00 (0.00)	-1.49 (0.03)	-0.03 (0.02)	-0.06 (0.02)	-0.03 (0.01)	-0.02 (0.02)	-0.05 (0.02)	0.00 (0.02)	-0.06 (0.03)
Dependency ratio	-0.01 (0.01)	-0.32 (0.03)	-0.05 (0.03)	-0.07 (0.03)	-0.07 (0.03)	-0.02 (0.02)	-0.04 (0.02)	0.00 (0.02)	0.06 (0.02)
Sibling	0.12 (0.06)	-1.16 (0.01)	-0.20 (0.03)	-0.14 (0.04)	-0.16 (0.05)	-0.17 (0.04)	-0.08 (0.04)	-0.10 (0.04)	-0.10 (0.03)

*Note: Standard errors in parentheses, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.*

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VITA

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Outstanding Student Award, University of Social Science and Humanities, Vietnam National University	1999