

Ensuring basic education for ethnic minority groups in Vietnam

Ha Thi Hai Do^{a*}, Nui Dang Nguyen^a, Anh Ngoc Mai^a, Duc Minh Phung^a, Nguyen Duy Vu^b, Hung Dinh Nguyen^a, Dung Manh Tran^a and Thuy Minh Thu Phung^a

^aNational Economics University, Hanoi, Vietnam

^bAcademy of Finance, Hanoi, Vietnam

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ABSTRACT

This research is conducted to review the current national policies updated basic education for the ethnic minorities and the status of basic education provided to the ethnic minorities in Vietnam, to evaluate the impact of basic education on education quality provided to ethnic minorities; and to discuss the future policy directions of Vietnam to ensure basic education for the ethnic minorities. The primary methods employed were systematic review of literature, emic knowledge and quantitative method. The results show that ensuring basic education for ethnic minorities is a meaningful and practical activity. It plays an important role in improving the quality of ethnic minority education in Vietnam today as well. Through the investigation of the research topic, we point some limitations of ensuring basic education and solutions to overcome those in the coming time.

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1. Introduction

Ethnic minorities living habitats and mountainous areas of Vietnam account for two thirds of the country's natural area, resided by 53 ethnic minorities with nearly 12.3 million people, accounting for 14.2% of the country population (Phung et al., 2017). This is an area with a particularly important strategic position in terms of national defense and security, with potential for natural resources. However, this is also a complex area with incomplete infrastructure and often affected by natural disasters especially flash floods; it has a low socio-economic starting point, a high rate of poor households, and a low educational level.

Following the goal of poverty reduction, in recent years the Party and Government of Vietnam have issued many policies to develop socio-economic in ethnic minority areas. Policies have a direct impact on the socio-economic life of ethnic minorities. Local infrastructure is gradually improved; reduce the percentage of poor and near poor households; the material and spiritual life of the people is gradually enhanced. Therefore, the appearance of ethnic minorities, especially in remote, isolated and extremely difficult areas, has undergone fundamental changes, leading to constant improvement in the lives of ethnic minorities. However, up to now, ethnic minority and mountainous areas remain the most difficult areas in the country due to the fact that people's access to education is still limited. 304 extremely difficult communes do not have enough solid classrooms. 15,930 villages yet have no kindergartens and preschools; The quality of education and human resources is still low: Up to 21% of ethnic minorities (in the school age and older) cannot read and write common words, the number of working-age people in the region has not yet been trained accounts for 89.5%; particularly in which untrained ethnic minorities account for 94.2% (the highest is Mang with 98.7%, La Hu with 97.7%, Xinh Mun with 94.6%, Lot Lo with 93.3%) (Phung et al., 2017). Government policies have covered all areas of basic education, but implementation results are limited, and the poor and re-poor status of this group of people is always the highest in the country, potentially bringing about security risks and political

* Corresponding author.

E-mail address: hadh@neu.edu.vn (H. T. H. Do)

instability.

To provide the international community with a broader picture about key policies and basic education for the ethnic minorities in Vietnam, in the dimension of this research we review the current national policies ensuring basic education for the ethnic minorities, review the status of basic education provided to the ethnic minorities in Vietnam, evaluate the impact of ensuring basic education on education quality provided to ethnic minorities; and discuss the future policy directions of Vietnam to ensure basic education for the ethnic minorities.

The primary methods used in this study were systematic review of literature, emic knowledge as policymakers and researchers of ethnic minorities and basic social services as well as quantitative method. For the literature review, we collected two primary sources of data: (i) major policy documents related to ethnic minorities and basic education issued in Vietnam in the last few decades, especially those issued by the central government or Committee for Ethnic Minority Affairs and Ministry of Education and Training, and (ii) research papers and reports analyzing these policies and the implementation of these policies. For the emic knowledge, we employed insights as insiders in the process of developing and implementing policies ensuring basic education for the ethnic minorities in Vietnam, which was built through decades of providing inputs, drafting, revising and implementing policies related to the ethnic minorities and basic education in Vietnam. This emic knowledge was also built through extensive field observations and communications with staff and minority groups in Vietnam over the years. In addition, the role of ensuring basic social services in education quality in Vietnam is also considered by quantitative method, with a fractional logistic regression model.

2. Literature review

Education is a process of conveying and acquiring historical - social experiences of generations. The previous generation passed on historical and social experiences to whom later on absorbed these knowledge to participate in social life, productive labor and other activities (Pham, 2014). Mehrotra et al. (2000) affirmed that basic education helps people achieve solid development. From this research point of view, basic education is considered within primary education as an important component of basic social services that creates the opportunity for those whose desire to escape poverty and move towards a better life. As Rong (2009) points out in modern society, all levels of education provide formal education where people learn systematic knowledge and skills and are an important channel for providing social standards. It helps people become "socialized" and develops their ranks in the social hierarchy.

The ministers of countries attended Incheon Global Education Forum 2015, unanimously pledged the goals and orientations of the millennium education policy and education policy for everyone (UNESCO, 2015). Highlights of commitment on educational policy are reflected in (i) universal and compulsory policies on education; (ii) equality and inclusion; (iii) policy and legal framework to promote transparency and accountability; (iv) State budget funding for education.

Lu et al. (2016) confirmed that ensuring universal access to basic education is a millennial goal by 2015, however, this is still a major obstacle for developing countries. After Africa, Asia is the region with the largest proportion of children at primary school age who are not attending school. Yang (2009) stated that since the People's Republic of China was established in late 1949, education for ethnic minority groups has been promoted based on the analysis of natural conditions, history and society, through policies on privileges and perks in admission, tuition, boarding schools and improvement programs. Central and local administrative agencies have been created to implement policies, goals and address education issues for ethnic minority groups. For many years, financial funds have been set aside to meet the financial needs for ethnic minority education.

In Vietnam, education has been identified as a leading national priority, aiming to achieve the goal to fully educate people (Central Committee of the Communist Party of Vietnam, 2016). This goal can be achieved through the national education system, the most important of which is general education, including primary education, secondary education (basic education phase) and high school education (career-oriented education phase) (Prime Minister, 2016).

Prior studies showed that basic education is an important content of minimum services necessary for human development, however, the consensus among researchers on this concept is yet not consistent. Nguyen (2013) believes that basic education includes schools, training classes, life skills training, forms of inclusive, integrated and specialized education, etc. FitzGerald (2011) mentioned in his study, basic education was one of two important contents of basic social services for human development in Vietnam besides health. Nguyen (2012) and Nguyen (2013) proposed a basic education delivering model and applied it to vulnerable groups living in mountainous areas. They concluded that ensuring basic education for disadvantaged groups should depend on policies and its implementation for basic education service provision. Chi (2011) had a research and assessment on educational policy for ethnic minorities in Vietnam focusing on basic education which is preschool education for 5-year-old children and primary school children under 12-year-olds at Lao Cai and Phu Yen provinces. Her study identifies three main factors that come from the policies of Vietnamese Government namely, investment in building schools, school infrastructure as well as roads and electricity for mountainous people; scholarships and financial assistance, free tuition for ethnic students; and the ethnic language teaching and learning program at schools.

Basic education is carried out at an early stage, in order to help people reach a certain level of understanding so that they can realize whether a problem is wrong or right, should or should not be done, from there it could help to build the ideology of an individual. Basic education could provide training to help people learn how to read, write, do math, and have basic life skills.

The level of basic education is evaluated based on the criteria of universal education. The National Assembly (2009) regulates the universalization of education in Vietnam, including universal preschool education for five-year-old children, universal primary education and universal secondary education; In addition, there is an education program for literacy (Government, 2014). From the implications of basic education and universal education, it can be concluded that ensuring basic education includes: (i) preschool education for children aged five, (ii) primary education, (iii) secondary education, (iv) literacy programs.

3. Key policies on ensuring basic education for ethnic minorities in Vietnam

After renovation “Doi Moi”, the policy of developing ethnic minority and mountainous areas, the Law on universalization of primary education and documents from the Council of Ministers (now the Government) covers the improvement solutions on basic education for ethnic minorities: (i) solutions to literacy; (ii) solutions for school and class organization, infrastructure construction, equipment investment; (iii) solutions to support cadres and teachers (The Council of Ministers, 1989; The Council of Ministers, 1990; National Assembly, 1991).

Up till now, policies ensuring basic education for ethnic minorities have been expressed through programs, strategic plans and projects in various written forms, including resolutions, decrees and decisions. The content of basic education can be integrated in general policies such as Program 135, Program 30a, National target program on sustainable poverty reduction, or specific policies for education, for ethnic minority areas, and ethnic minority people.

The current policies to ensure basic education for ethnic minorities are implemented through 30 basic policy documents, focusing on four major components including infrastructure; supporting students; supporting teachers and educational administrators; eradicating illiteracy, supporting consolidation of educational universalization results. Among those, there are a number of specific policies created for ethnic minorities, others are integrated into a common program. The Ministry of Education and Training (MoET) is responsible for implementing the majority of policies to ensure basic education needs are met for ethnic minority people. The various specific policies for ethnic minority are chaired by the Committee for Ethnic Minorities, other general policies are implemented by the Ministry of Planning and Investment, the Ministry of Labor, Invalids and Social Affairs, and the Ministry of Home Affairs, the Ministry of Agriculture and Rural Development, the Ministry of Information and Communications and the Ministry of Health (see Table 1, below).

Generally, policies that ensure basic education for ethnic minorities have been issued comprehensively and increasingly. The government has implemented many programs and projects that enable children and ethnic minorities to have access to basic education, mobilize most school-aged children and ethnic minority pupils to learn Vietnamese, ethnic languages, basic social and science subjects, as well as exchange and have access to information, science and technology.

However, policies to ensure basic education services for ethnic minorities is still scattered, overlapping, yet not integrated and linked to the ability to access resources. Hence, desired results has not been achieved and the gap between ethnic minorities and the Kinh has not been shortened as expected. Moreover, the demand for education infrastructure is large while the capital allocation for implementation is inadequate. There are various policy documents implemented by many units leading to overlap in management; lack of close coordination among relevant agencies and organizations and lack of focal points of responsibility. Irrational decentralization or no decentralization may create difficulties for local governments to be proactive. Process and procedures for public investment are not suitable with specific conditions of ethnic minority and mountainous areas. Mechanism for monitoring and evaluating policies is not effective. In addition, the role of state management agencies for ethnic affairs has not been promoted strongly.

Table 1

Central level policy documents issued on ensuring basic education for ethnic minorities valid in 2019

No	Organization in charge of implementing the policy	No. of policy documents	In which		Impact fields			
			Policies for Ethnic Minorities	General policies	Infrastructure	Supporting Students	Supporting teachers and administrators	Eradicating illiteracy, Consolidation of educational universalization results
1	Ministry of Education and Training	12	6	6	√	√	√	√
2	Ministry of Planning and Investment	1	1		√			
3	Ministry of Labor, Invalids and Social Affairs	3		3	√	√	√	
4	Ministry of Home Affairs	1		1			√	
5	Ministry of Agriculture and Rural Development	4		4	√	√		
6	Ministry of Information and Communications	1		1	√			
7	Ministry of Health	1		1		√	√	
8	Committee for Ethnic Minorities	8	5	3	√	√	√	
Total		31	12	19				

4. Status of ensuring basic education for ethnic minorities in Vietnam

There have been some improvements in accessing basic education for ethnic minorities, this helps narrow down the gap with the Kinh people. The difference in access between ethnic minorities and the Kinh is negligible at primary school or preschool education amongst five year old children by 2018. Even the proportion attending preschool at the age of five for ethnic minorities are nearly 2 percent higher than that of the Kinh. Illiteracy eradicated for ethnic minorities has also made great progress. After 10 years, the proportion of ethnic minority illiterates decreased from 25.6% in 2008 to 6.24% in 2018. However, the gap between illiteracy rate and the enrollment rate at the right age at secondary school level compared to that group of Kinh people are still quite large (see Table 2).

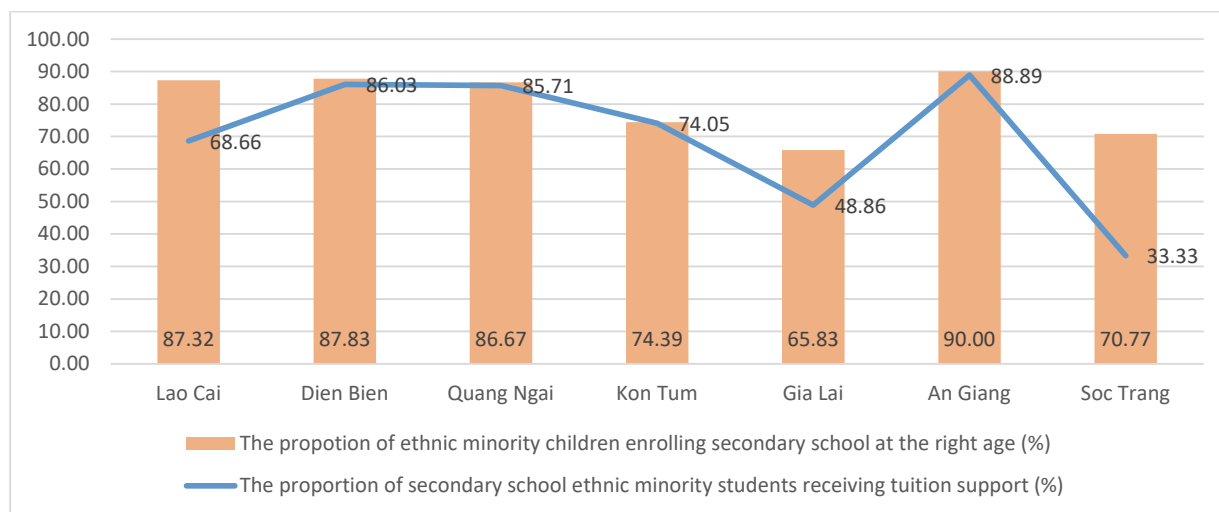
Table 2

Proportion of people accessing basic education, 2008 - 2018,%

Items	2008		2018	
	Kinh	Ethnic minorities	Kinh	Ethnic minorities
The rate of going to preschool at five years old	66.58	55.08	81.86	83.31
The rate of going to primary school at the right age	94.93	87.78	96.69	95.41
The enrollment rate at the right age for secondary school	89.48	73.81	92.83	82.74
Illiteracy rate	5.36	25.60	2.49	6.24

Source: VHLSS 2018, General Statistics Office

For ethnic minorities themselves, the gap in access to basic education is still very large. The attendance rate for preschool level at 5 years old, is very low in Xtieng ethnic groups (49.87%), Brau (66.67%), Cham (68.09%), Khmer (69.06%), Gia Rai (72.34%), while the Bo Y, Si La, Ro Mam, O Du, Khang, San Giay, San Diu and Ta Oi ethnic groups have reached a high rate (over 98%). The primary school enrollment rate is still low among Lo Lo, Brau, Ro Mam, Khmer, Pa Then and Raglay ethnic groups (under 83%). On the other hand, the top five ethnic groups that have reached the millennium target for ethnic minorities (over 94 percent of children attending primary school at the right age) are: Si La, O Du, Lao, Ha Nhi and Lu. For secondary school, many ethnic groups have the attendance rate of less than 50%, such as Xtieng, La Hu, Gia Rai, Mnong, Ra Glai; but there are also ethnic groups such as San Diu, Pu Peo, Muong, Co and Tay have reached the rate of over 85%. Despite that fact, the rate is considered quite far from the target of 95% of secondary school age pupils attending school¹. Illiteracy is more pronounced among ethnic minorities. Only 34.4% of La Hu ethnic group can read and write in Vietnamese, contrasting to over 94% among the Muong, Tay, Tho, and San Diu ethnic groups². Remarkably, most ethnic minorities with high illiteracy rates do not fall into the ethnic groups with low school attendance rates at the right age. There is a very high proportion of ethnic minority people at working age who are illiterate in some provinces, such as Binh Thuan, Gia Lai and An Giang. This shows that eradicating adult illiteracy is a huge challenge for ethnic minorities.



¹ The millennium goal for ethnic minorities

² Source: Survey of 53 ethnic minorities in 2015 by GSO

Fig. 1. Relationship between enrollment at the right age and support for secondary school fees, 2018,%

Differences in access to basic social services are also evident by geographic region. A study in seven provinces representing the four major ethnic minority areas in Vietnam showed that there is a disparity in the proportion of ethnic minority children enrolling secondary school at the right age. This disparity is in positive correlation with the proportion of secondary school ethnic minority students receiving tuition support (Fig. 1). It reflects the differences in the aims of policy and its outcomes of ensuring basic education for ethnic minorities. Hence, despite several progress, there has been no access similarities to basic education between ethnic minorities and the Kinh, among ethnic minorities or among localities. The issue of eradicating illiteracy for adults becomes a barrier for ethnic minority workers to integrate into the general labor market. Beside factors about natural, economic and social conditions, characteristics and perceptions of ethnic minorities, the limitations of the policy itself has made a difference in the results of ensuring basic education.

5. Assessment of the impact of ensuring basic education on the quality of education for ethnic minorities in Vietnam

Data description

The data in this empirical model is aggregated at provincial level from two sources: (i) Vietnam Household Living Standards Survey (VHLSS) in 2016; and (ii) the socio-economic situation of 53 ethnic minorities in Vietnam Survey in 2015. Specifically, the VHLSS data are used to calculate the education quality index of ethnic minorities, while 53 ethnic minorities data are used to calculate variables representing basic social service elements. The total data used in the analysis has a total of 48 observations taken place in 48 provinces/cities inhabited by ethnic minorities.

Model and Variables

The model used to assess the impact of ensuring basic social services on the quality of education for ethnic minorities in this study is presented below:

$$EQI_dts_i = \beta_0 + \beta_1 Truonghoc_i + \beta_2 Truonghoc * KBTN_i + \beta_3 EQI_kinh_i + \beta_4 Thunhap_i + \beta_5 CSHT_i + u_i \quad (1)$$

In which:

i is province index,

u_i is random error.

EQI: Educational quality index. It is calculated by the principal component analysis (PCA) method. The idea of PCA method is to extract principal components from the data set with k variables ($p < k$), in which these components did not correlate with each other and still retained most of the information from the whole data. In this study, PCA is used to calculate EQI from 4 component indexes including: (i) education of household heads; (ii) the proportion of people from the age of 11 and older having a primary school diploma; (iii) the proportion of people from the age of 15 and older having a secondary school diploma; and (iv) the proportion of people from the age of 18 and older having a high school diploma (Check appendix 1).

In Model (1), *EQI_dts* measures educational quality of ethnic minorities, used as a dependent variable in the regression model; *EQI_kinh* measures the educational quality of the Kinh people in the same area, used to control the spillover effects of the Kinh group, in comparison against the education quality of the ethnic minority group. *EQI_dts* and *EQI_kinh* have the value in the range of (0;1).

Truonghoc: Percentage of primary schools in the area accredited with national standard. This variable represents the quality of local education, in which localities with a higher percentage are expected to have higher quality of education. Unit: %

Truonghoc variable reflects the role of ensuring basic social services in the field of education are met to improve the quality of education in the general population area. In order to add the difference between ethnic minorities and Kinh people in the same locality is to enjoy these common conditions, when we add a variable difference in income (KBTN) among ethnic minorities and Kinh people, measured by quartiles of the difference by per capita income between Kinh people and ethnic minorities from each province. In the model, *truonghoc* × *KBTN* is an interaction variable between *truonghoc* and *KBTN*, showing the difference between ethnic minorities and Kinh people in the same area. In the same environment, the greater the difference in income represents the lower ability to "utilize" the environment and turn it into the quality of life for ethnic minorities.

Thunhap: Income per capita of ethnic minorities in each province, unit: million VND/person/year. The variable *thunhap* is included in the model to control the impact of income for educational quality. As incomes improve, people tend to spend more on education, therefore the quality of education may be better. In model (1), *thunhap_bp* is the square of the *thunhap* variable, to evaluate the marginal impact of income it has on the dependent variable.

CSHT: Infrastructure quality in localities is represented by the proportion of villages with hard roads, unit: %. In Vietnam

today, ethnic minorities are more concentrated in remote areas. In general, the transportation infrastructure in these places is underdeveloped, so it may affect the lives of people, especially for the ethnic minority people who participate in educational activities.

Basic statistics of the variables in the proposed regression model are shown in Table 3.

Table 3
Statistics description of variables in the regression model

Variables	n	Mean	Std. Dev.	Min	Max
<i>EQI dtts</i>	48	0.372	0.143	0.096	0.794
<i>EQI kinh</i>	48	0.601	0.135	0.330	0.875
<i>Truonghoc</i>	48	40.783	19.413	12.400	93.443
<i>Thunhap</i>	48	21.308	11.761	7.190	51.782
<i>CSHT</i>	48	98.616	1.741	92.573	100.252
<i>KBTN</i>	48			1	4

In Table 3, the dispersion of the variable *EQI_dtts* is quite large (0.143) compared to the average (0.372). In addition, the variation range of *EQI_dtts* variable is also very large (from 0.096 to 0.783), indicating a significant difference in the educational quality of ethnic minorities among localities across the country. Similarly, the range of variation of *EQI_kinh* is also quite large, so it may have a pervasive effect on education to the Kinh group and the ethnic minority group living in the same area. The variable *truonghoc* has quite a large dispersion (19.413) compared to the average (40.783). It means that the ability to provide quality education may be an affecting factor to the ethnic minorities.

Estimation method

Because the dependent variable receives values in the range (0-1), hence Model (1) will be estimated by a model which is proportional to the logistic distribution.

Estimated results

After performing the necessary tests (Appendix 2), estimated results of model 1 following the scale regression method are reported in Table 4.

Table 4
Estimated Results

Variables	Estimated coefficient	Variables	Estimated coefficient
<i>Truonghoc</i>	0.024*** (0.010)	<i>Thunhap</i>	0.058** (0.028)
<i>Truonghoc</i> × <i>KBTN_2</i>	-0.013* (0.007)	<i>Thunhap_bp</i>	-1.32e ⁻⁰⁹ *** (4.79e ⁻¹⁰)
<i>Truonghoc</i> × <i>KBTN_3</i>	-0.023*** (0.007)	<i>Csht</i>	4.676** (2.336)
<i>Truonghoc</i> × <i>KBTN_4</i>	-0.030*** (0.010)	<i>Csht_bp</i>	-0.024** (0.012)
<i>EQI_kinh</i>	2.165*** (0.498)	<i>_cons</i>	-226.747** (112.453)
<i>N</i>	48		

Note: Numbers in parentheses are standard errors; The symbols *, ** and *** denote the significance levels at 10%, 5% and 1%, respectively.

The estimated results in Table 4 show that the estimated coefficients are consistent with expectation and have statistical significance. As details:

The coefficient of *truonghoc* variable is positive with 1% significance level, indicating: When the standard school rate increases by one percentage point, the educational quality index will increase by 0.024 units. This is in line with the expectation that when the basic education sector is good, the quality of education for the people will be higher. Because education is an important factor that affects the quality of life, for example, the higher the level of education, the more people know how to improve labor productivity and raise incomes, so the quality of basic education services is a factor that need special attention to help improve the living standards of ethnic minorities in Vietnam.

Regarding the ability to utilize basic education services of ethnic minorities, as expected, the interaction variables between *truonghoc* and *KBTN* are negative, decreasing and statistically significant. This implies that the greater the gap between the income of Kinh people and ethnic minorities, the lower their ability to utilize basic social services, such as educational services that will improve ethnic minorities' quality of life. Therefore, it is necessary to encourage people to become more involved in social services in order to improve their income and ability to utilize in the long term.

The coefficients of the *EQI_kinh* variable are positive and statistically significant at 1%, showing evidence of the positive spread of Kinh people to ethnic minorities in the same area in terms of educational quality.

Regarding income factors, the coefficient of *thunhap* is positive and statistically significant. It implies that when the income increases, ethnic minorities also pay more attention to education, so the educational quality is gradually improved. The coefficient of *thunhap_bp* is negative and statistically significant, showing the impact of income on the educational quality decreases with scale.

Finally, the coefficient of the infrastructure variable *CSHT* is positive and statistically significant, showing that infrastructure plays an important role in the educational quality of the people. Accordingly, the localities with the higher percentage of roads that are paved or concreted have higher chances to go to school and show improved educational quality of ethnic minority children. The coefficient of *CSHT_bp* is negative and statistically significant, showing that the impact of this factor on the dependent variable also decreases with scale.

6. Future policy directions of Vietnam to ensure basic education for the ethnic minorities

The paper has reviewed policies that ensure basic education for ethnic minorities as well as provide an empirical study, evaluating the impact of ensuring basic education for ethnic minorities and educational quality. The research results show that the policies on basic education have brought about positive effects, the educational quality of ethnic minorities were improved over time, contributing to improving the quality of human resources force of ethnic minorities in Vietnam today.

The findings of the study suggest some of the following policy recommendations:

Firstly, it is necessary to review, amend, supplement, integrate current policies to complete the system that ensure basic education for ethnic minorities. Strengthening decentralization, and clearly defining responsibilities of the Central Government and localities in the direction that the Central Government issues framework policies, orientations of policy objectives and objectives that provide basic education for ethnic minority people; the Central government should assign autonomy to provincial governments in implementing policies consistent with local budgets.

Secondly, strengthening the supervision, inspection, review, control and evaluation of the implementing policies will ensure basic education for ethnic minorities; reforming administrative procedures, applying information technology, building databases, information and reporting systems on ensuring basic education is to promote the leading and supervising role of agencies for national ethnic minorities.

Thirdly, the results show that basic education services play an important role in improving the educational quality of ethnic minorities. Therefore, more attention is required in improving the quality of basic education services, through improving the quality of educational institutions in ethnic minority areas, including: re-planning the grassroots of education network in accordance with the conditions of ethnic minority areas, increase investment in infrastructure for boarding and semi-boarding schools for ethnic minorities, expand ethnic minority semi-boarding schools in poor districts.

Fourthly, the study found that there are significant differences in the educational quality of ethnic minorities among localities across the country, and at the same time there is a diffuse influence on the educational factor by the Kinh to the ethnic minorities living in the same area. Therefore, in order to improve the quality of basic education for ethnic minorities, it is necessary to develop education programs suitable to the conditions of localities and local educational institutions, combining basic education with the reality of socio-economic development and local cultural characteristics. Along with increasing the number of Kinh pupils in ethnic boarding schools as well as increasing ethnic minority in public schools for mutual development.

Fifthly, the results also reveal that the educational quality depends on the utilization ability of ethnic minorities. Therefore, in addition to improving the quality of services, it is crucial to create a mechanism that will encourage people to use the service. For example, it is necessary to have better information and communication system for ethnic minorities to raise awareness about the role of education, as well as increasing tuition and credit support so that ethnic minorities can be able to use these services more.

Sixthly, the results show that the income and quality of local infrastructure are significant factors in improving the educational quality. Therefore, besides improving the quality of educational institutions, it is also important to create jobs for people, as well as improve transport, electricity and water infrastructure in the villages, thereby improves educational quality and living standards of ethnic minorities in Vietnam.

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Appendix 1

Variables used in calculating educational quality index of people

Variables	Definition
Education of the household head	Education head of household, dummy variable with 4 categories: 1- high school; 2-from secondary school to high school; 3-from elementary to professional college; 4-university and above
Primary School	Proportion of people aged 11 and older having a primary school diploma (unit: %)
Secondary School	Proportion of people aged 15 and older having a secondary school diploma (unit: %)
High School	Proportion of people aged 18 and older having a high school diplomas (unit: %)

Appendix 2

Testing Heteroskedasticity

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of giaeduc_dtts

chi2(1) = 0.02

Prob > chi2 = 0.9008

