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# **Ethnic Minority Children’s Access to Public Services in Vietnam**

**Nguyen Viet Cuong<sup>1</sup>**

## **Abstract**

This study provides an analysis of access to public services of ethnic minority children. The main data sets are from a Baseline Survey of the Program 135-II in 2007, Vietnam Household Living Standard Surveys 2004 and 2006, and the 15-percent sample of the Population and Housing Census 2009. It will provide analysis of ethnic minority children’s welfares including education, health care services, living conditions and labor, nutrition and leisure. We found that although ethnic minority children’s welfares improved overtime, their welfare remain very low compared with Kinh children.

**JEL Classifications: J13; O12; R20**

**Keywords: Children, Public Services, Household Survey, Development, Vietnam.**

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## 1. INTRODUCTION

Vietnam has achieved great success in economic growth and poverty reduction. Vietnam has achieved high economic growth with the annual GDP growth rate of around 6 percent during over the past 10 years. The poverty incidence has been reduced remarkably from 58 to 14 percent between 1993 and 2008. Welfare of people have improved with better assets and living conditions. Although children share the living conditions with adults, improvement of income and consumption does not necessarily implies better education and health for children. The government of Vietnam has maintained an extensive social security system. Although, this social protection system including social transfers and poverty alleviation programs are often mentioned as key contribution to poverty reduction by mass media, there has been no studies on whether these programs can benefit children.

As a result, there are a large number of studies on children poverty in addition to overall poverty. There are several studies on child poverty such as Howard and Edoardo (2002), Roelen(2010). Most studies discuss the measurement of children poverty. There are no thorough studies on the access of children to different public services, especially the ethnic minority children. Poverty in Vietnam is now a phenomenon of ethnic minorities. Although ethnic minorities account for 15% of the total population in 2008, they account for 66% of the poor. To reduce poverty for ethnic minorities sustainably, support programs such as education and health care should be provided for ethnic minority children from the beginning.

In this study, we examine the current access of ethnic minority children to basic public services and living conditions using most recent data from different sources. Especially the Baseline Survey Data of the program 135-II conducted in 2007 allow for a detailed analysis of different ethnic minority groups. Other data sets often have a small number of ethnic minority households in the sample, and does not allow for analysis of small ethnic minority groups.

The report is structured into 4 sections. Section 2 presents data sets used in this study. Sections 3 analyzes the access of children to basic needs including education and health care services, housing conditions and basis assets, child labors and other needs. Finally, section 4 concludes.

## 2. DATA SOURCE

The main data source that is used in this study is from The Baseline Survey of the Program 135-II. The Baseline Survey (abbreviated as BLS 2007) of the Program 135-II was conducted by the General Statistical Office (GSO) in 2007 with technical assistance from UNDP. This survey collect the baseline data of households and communes under the Program 135-II using household and commune questionnaires. The household and commune questionnaires are similar to questionnaires of the Vietnam Household Living Standard Surveys (VHLSS). Information on households includes basic demography, employment and labor force participation, education, health, income, housing, fixed assets and durable goods, and participation of households in poverty alleviation programs. However, unlike the VHLSSs, BLS 2007 did not contain information on household expenditure. The commune questionnaires were used to collect basic information on communes' living standard including economic, social issues, infrastructure, etc.

BLS 2007 covered 400 communes in the Program 135-II. In each commune, one village was randomly selected, and each selected village, 15 households were selected for interview. Thus the number of households covered in this survey 6,000. One important feature of this survey is that it is representative for the poor in the Program 135-II. There are a large proportion of ethnic minorities households surveyed. Thus BLS 2007 allows for analysis of small ethnic minorities, while VHLSSs do not.

In this study, we focus on the sample of children aged from 0 to 15. The number of children in BLS 2007 is 10,814. The analysis is disaggregated for different groups including ethnic minorities groups, children in different regions, children of different age groups, boys and girls, poor and non-poor children. Poor children are defined as those who living in a households with per capita income below the income poverty line. The official income poverty line is 200 thousand/person/month. The number of observations of children in each groups are presented in Table 1. It should be noted that for some groups which have the number of observations below 100, the interpretation of estimates should be cautious since the sampled data are not representative.

Table 1. Number of observations by different groups

	Age 0-5	Age 6-10	Age 11-15	Girls	Boys	Non- Poor	Poor	Total
Total	3,669	3,292	3,853	5,282	5,532	4,330	6,484	10,814
<i>Ethnic minorities</i>								
Kinh	455	432	574	703	758	916	545	1,461
Tay	278	318	441	495	542	502	535	1,037
Thai	318	286	411	507	508	512	503	1,015
Khmer	61	55	72	94	94	128	60	188
Muong	223	172	243	329	309	333	305	638
Nung	134	136	165	216	219	161	274	435
Hmong	924	789	692	1,109	1,296	502	1,903	2,405
Dao	385	352	458	608	587	461	734	1,195
Gia Rai	48	37	21	48	58	35	71	106
E De	17	21	28	38	28	28	38	66
Ba Na	92	79	65	110	126	53	183	236
Hre	57	43	67	88	79	61	106	167
Co Tu	68	80	74	109	113	79	143	222
Others in North	133	119	131	198	185	94	289	383
Other in Central	339	287	328	472	482	365	589	954
Others in South	137	86	83	158	148	100	206	306
<i>Regions</i>								
Red River Delta	19	14	33	34	32	38	28	66
North East	1,448	1,354	1,621	2,136	2,287	1,543	2,880	4,423
North West	860	760	857	1,197	1,280	1,041	1,436	2,477
North Central Coast	394	338	445	604	573	477	700	1,177
South Central Coast	270	237	302	402	407	314	495	809
Central Highlands	399	333	311	489	554	418	625	1,043
South East	89	92	95	144	132	146	130	276
Mekong River Delta	142	124	139	204	201	293	112	405

*Source: estimation from BLS 2007*

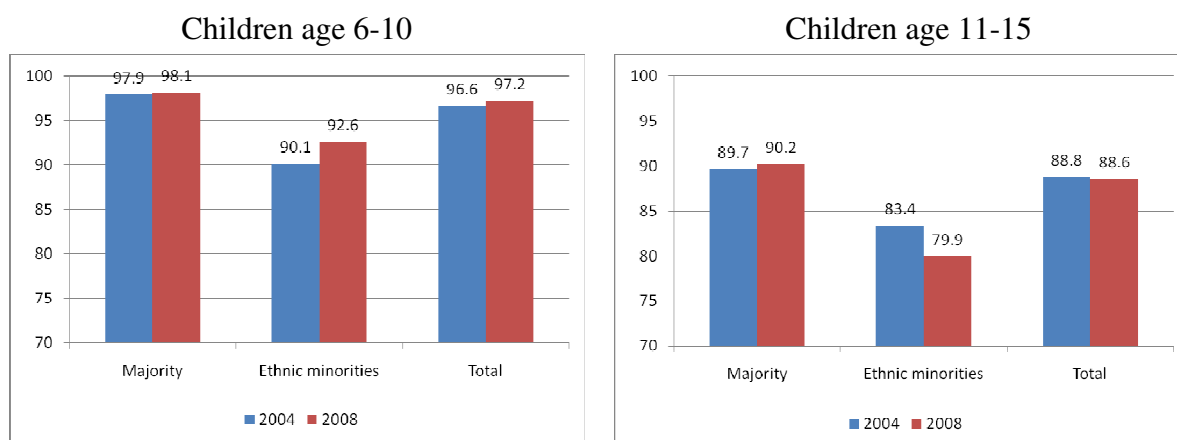
In addition, the study also uses on data from the two most recent Vietnam Household Living Standard Surveys (VHLSS), which were conducted by the General Statistical Office of Vietnam (GSO) with technical support from the World Bank (WB) in the years 2004 and 2006. The 2004 and 2006 VHLSSs cover 9188 and 9189 households, respectively. The samples are representative for the national, rural and urban, and regional levels. The survey also used the data from the 15% sample of the Population and Household Census in 2009 (PHC 2009).

### 3. CHILDREN'S ACCESS TO BASIC NEEDS

#### 3.1. Access to Education

Education is an important factor to increase income sustainable and get rid of poverty in all the countries and Vietnam in particular (Glewwe et al., 2004). Low education means poor human resource and low labour productivities. To increase education, the Government has committed to universal primary school. Vietnam has accomplished the Millennium Development Goal of universal primary education according to national standards since 2000.<sup>2</sup> Over the past decade, Vietnam has continued to promote universal primary education. All the poor areas have been provided with education support programs. All the provinces have achieved illiteracy eradication, universal primary education according to national standards (Government of Vietnam, 2010).

Figure 1. The schooling rate of children by ethnicity (%)



Note: Majority is Kinh children, which account 83% of children aged below 16 in 2008.

Source: estimation from VHLSSs 2004 and 2008

<sup>2</sup> According to Vietnam's national standards, communes, wards and towns can be recognized as achieving universal primary education if more than 80% of 14-year-old children have completed the primary curriculum. For mountainous and difficult areas, the standard is over 70%. Districts and provinces must have more than 90% of local facilities and institutions recognized as reaching the standards of universal primary education. For mountainous and difficult areas, the standard is over 80%.

Figure 1 shows that the schooling rate of children aged 6 to 10 is very high for the whole country, at around 97% in 2008. The gap of the primary schooling rate between ethnic minorities and Kinh (the majority group) was small and tended to decrease during 2004-2008. However, there is a large gap in the schooling rate at the lower-secondary level and the gap increased over 2004-2008.

Table 2 presents the schooling rate of children under the poorest communes. Children in these areas have a lower schooling rate than overall ethnic minorities in the country. There were around 92% of children aged 6-10 attending school in 2007. Seriously, for some ethnic minorities such as Hmong and E De this proportion was around 80%. For children from 11 to 15, the schooling rate is 78%. Children in several ethnic minorities such as Tay, Nung, Muong and Thai have quite high schooling rates. Children in Nung group had the schooling rate was 98% and 92% for children aged 6-10 and 11-15, respectively.

As expected children in poor households had a lower proportion of schooling than those in non-poor households. The poor children in several ethnic minorities have very low enrolment rate such as poor children of Khmer, Hmong, Gia Rai and Ede. However, it should be noted that in our data, the number of sampled poor individuals in Khmer, Gia Rai and Ede is less than 100.

Although, there is no gender gap in education at the national level (Government of Vietnam, 2010), there was still a large gender gap in education for ethnic minorities in the poor communes. The education enrolment differs across regions. The Red River Delta and Central Coast have higher schooling rates than other regions. The ethnic minorities in the North West and Mekong River Delta have the lowest schooling rate at both primary and secondary levels.

Table 2. The schooling rate of children

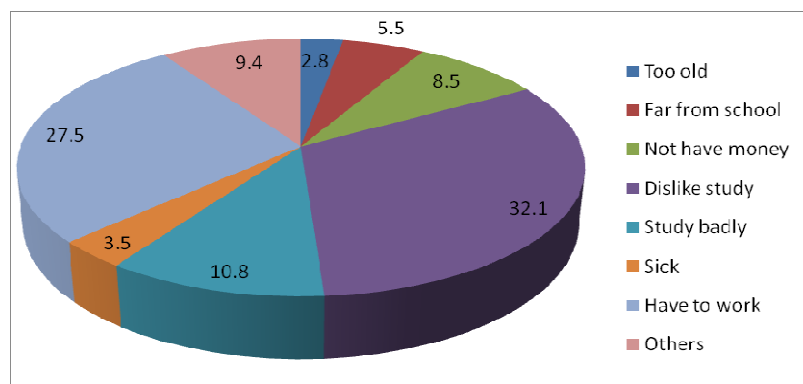
	Age 6-10	Age 11-15	Girls	Boys	Non-Poor	Poor	Total
Total	91.62	77.67	82.42	85.68	87.11	81.18	84.07
<i>Ethnic minorities</i>							
Kinh	95.19	84.05	90.98	87.42	89.75	87.77	89.19
Tay	97.19	88.68	90.47	93.96	97.47	87.68	92.33
Thai	96.23	85.13	90.34	88.99	90.22	89.19	89.69
Khmer	86.15	58.36	69.21	71.86	71.85	67.23	70.58
Muong	97.66	81.48	89.94	86.11	91.35	84.87	88.11
Nung	98.33	92.10	97.59	92.60	96.53	93.60	94.95
Hmong	80.11	63.87	61.79	80.76	82.75	69.57	72.26

	Age 6-10	Age 11-15	Girls	Boys	Non-Poor	Poor	Total
Dao	92.34	69.44	75.73	83.11	78.30	80.39	79.42
Gia Rai	89.30	65.34	78.96	79.06	97.47	69.71	79.02
E De	82.87	36.21	54.89	56.90	71.02	46.16	55.67
Ba Na	94.16	69.65	80.76	84.96	77.18	85.55	83.10
Hre	95.32	78.03	89.62	81.15	86.49	85.37	85.63
Co Tu	87.99	95.29	90.37	93.27	93.89	90.91	91.78
Others in North	88.91	82.29	81.68	89.61	92.67	81.88	85.38
Other in Central	94.70	77.47	80.97	90.62	85.03	85.93	85.57
Others in South	87.20	71.65	79.04	82.88	83.44	79.47	80.63
<i>Regions</i>							
Red River Delta	100.00	86.26	83.05	97.14	91.27	88.03	90.20
North East	90.52	77.76	80.49	86.21	89.14	79.60	83.46
North West	90.75	79.62	78.51	90.59	89.76	81.07	84.69
North Central Coast	93.19	81.45	91.07	81.72	88.43	85.01	86.49
South Central Coast	94.51	83.88	88.22	88.85	89.24	88.09	88.52
Central Highlands	95.94	77.87	87.39	87.59	90.49	84.72	87.49
South East	86.38	70.12	80.06	76.13	84.67	65.38	78.13
Mekong River Delta	91.77	70.21	81.45	80.00	81.31	78.99	80.73

Source: estimation from BLS 2007

In BLS 2007, there is a question on reason why a child was not attending school. The main reasons for not school are ‘not interested’ (32.1%) and ‘have to work’ (27.5%). Around 8.5% of respondents mentioned that lack of money is the main reason for not going to school.

Figure 2. Reasons for not attending school



Source: estimation from BLS 2007



An important indicator of education is the completion rate of primary education for children aged from 11 to 15. Table 3 shows a very low rate of primary completion. Although 92% of children from 6 to 10 years old attend school (Table 2), only 66% of children from 11 to 15 completed the primary school (Table 3). This rate is especially low for Ede and Gia Rai children, at 15% and 27%, respectively.

Table 3. The primary completion rate of children aged 11-15

	Girls	Boys	Non-Poor	Poor	Total
Total	66.01	65.21	71.50	59.61	65.61
<i>Ethnic minorities</i>					
Kinh	74.71	74.29	73.18	77.50	74.50
Tay	70.92	80.27	77.27	73.63	75.41
Thai	72.45	77.51	75.79	74.03	74.97
Khmer	75.68	40.84	61.35	54.93	59.15
Muong	77.39	70.18	77.62	69.12	73.74
Nung	79.09	74.89	75.31	78.32	76.74
Hmong	33.17	47.90	62.21	35.04	41.56
Dao	63.50	58.97	64.83	58.15	61.28
Gia Rai	18.93	29.71	57.80	15.85	26.51
E De	19.40	4.21	10.15	17.71	14.96
Ba Na	57.83	71.07	81.34	56.81	65.59
Hre	82.02	45.86	64.76	62.44	63.08
Co Tu	75.91	86.12	94.08	75.86	81.21
Others in North	45.42	61.75	71.15	41.88	53.37
Other in Central	66.49	64.79	74.60	59.72	65.75
Others in South	44.88	45.45	50.94	41.44	45.13
<i>Regions</i>					
Red River Delta	59.90	81.70	69.48	73.81	70.73
North East	64.50	65.31	72.86	58.60	64.91
North West	54.17	63.52	70.10	50.32	59.08
North Central Coast	76.70	78.59	77.95	77.42	77.69
South Central Coast	76.04	55.45	76.46	60.56	66.18
Central Highlands	62.87	62.18	72.54	52.85	62.52
South East	79.68	86.98	87.08	76.89	83.14
Mekong River Delta	71.73	53.02	63.22	61.78	62.82

Source: estimation from BLS 2007

To promote education in areas with special difficulties, children in communes under Programs are exempted from education tuition. Under National Targeted Programs on Education and NTP-PR II, children from poor households are exempted from school fees. Table 4 shows that 85% of the children received exemption or reduction of construction and tuition fees. The poor children and ethnic minorities are more likely to receive fee reduction and exemption than the non-poor and Kinh children. For some ethnic minorities such as Gia Rai, Ede, Hre and Hmong, more than 90% of schooled children had received reduction of tuition and contribution fees.

Table 4. Percentage of children receiving reduction of tuition and contribution fees

	Age 6-10	Age 11-15	Girls	Boys	Non-Poor	Poor	Total
Total	89.96	80.68	84.27	86.32	78.97	91.80	85.3
<i>Ethnic minorities</i>							
Kinh	72.44	51.56	61.25	62.45	57.69	72.48	61.84
Tay	94.35	79.53	84.02	88.11	81.34	91.17	86.24
Thai	92.41	88.29	88.44	91.96	90.06	90.16	90.11
Khmer	85.27	92.22	90.58	86.60	86.74	93.44	88.49
Muong	94.83	80.03	86.55	86.98	81.51	92.38	86.75
Nung	97.30	81.99	90.22	88.34	89.62	88.91	89.25
Hmong	99.60	99.08	99.61	99.23	98.46	99.65	99.38
Dao	92.87	93.23	91.77	94.22	92.62	93.41	93.05
Gia Rai	100.00	100.00	100.00	100.00	100.00	100.00	100.00
E De	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Ba Na	97.46	95.82	96.32	97.22	100.00	95.65	96.84
Hre	99.48	98.15	99.28	98.21	98.34	98.95	98.80
Co Tu	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Others in North	96.33	83.08	90.96	88.02	92.47	87.92	89.52
Other in Central	99.20	100.00	99.16	100.00	100.00	99.31	99.58
Others in South	100.00	97.72	99.82	98.24	99.65	98.93	99.15
<i>Regions</i>							
Red River Delta	71.45	35.74	36.18	56.13	40.03	61.88	47.08
North East	95.35	81.73	86.37	90.02	83.86	91.74	88.33
North West	97.97	93.12	94.98	95.91	93.19	97.31	95.49
North Central Coast	89.88	73.96	82.80	79.60	76.13	85.45	81.32
South Central Coast	99.88	95.36	97.14	97.83	95.57	98.65	97.47
Central Highlands	91.11	89.24	88.18	92.30	84.00	96.60	90.33
South East	81.89	56.36	78.23	61.58	63.47	87.44	70.27
Mekong River Delta	69.92	66.55	67.10	69.79	65.06	78.80	68.42

Source: estimation from BLS 2007

Under Programme 135-II, children of poor households are eligible to financial support. One interesting observation is the support for EMC by semi-boarding schools, which are supported by both the authorities and the households having their children studying in these schools. This type of boarding school is increasingly observed in many districts in the Northern Uplands. Although there is currently no statistics on these schools neither uniform way of support, we can have several statistics on the proportion of children receive scholarship in the 2007 BLS.

Tables 5 and 6 present the percentage of children receiving scholarship and amount of scholarship. These scholarships are provided mainly for children in poor areas and in policy households. The proportion of receiving scholarship is similar between the non-poor and poor children. However, ethnic minorities children are more likely to receive the scholarship than Kinh children. The average amount of scholarship is also higher for ethnic minorities, especially Khmer, Hmong, Dao, Gia Rai and E De.

Table 5. Percentage of pupil receives scholarship

	Age 6-10	Age 11-15	Girls	Boys	Non-Poor	Poor	Total
Total	56.69	52.71	55.16	54.27	55.37	54.02	54.70
<i>Ethnic minorities</i>							
Kinh	47.59	42.01	47.87	41.56	46.06	41.43	44.76
Tay	62.38	55.13	55.37	60.97	64.93	51.84	58.41
Thai	49.76	49.22	52.29	46.31	49.38	49.53	49.46
Khmer	88.48	69.32	78.72	80.40	81.80	73.39	79.60
Muong	44.12	35.66	41.75	36.96	35.49	43.82	39.50
Nung	72.37	60.49	71.42	61.16	65.99	66.24	66.12
Hmong	63.81	71.78	67.01	67.34	65.01	67.88	67.21
Dao	59.05	54.07	60.88	52.67	66.44	48.26	56.59
Gia Rai	52.80	65.74	47.56	62.51	19.85	83.90	57.39
E De	46.53	51.37	56.18	36.57	28.94	66.89	48.37
Ba Na	70.87	70.81	70.89	70.81	62.24	74.06	70.85
Hre	65.19	49.07	50.63	64.83	47.88	59.84	56.96
Co Tu	44.41	44.97	43.91	45.53	41.77	45.98	44.71
Others in North	27.89	47.77	35.94	40.37	39.11	37.56	38.11
Other in Central	59.28	60.14	60.76	58.64	66.50	55.11	59.69
Others in South	27.81	36.88	30.77	31.81	50.53	22.85	31.21
<i>Regions</i>							
Red River Delta	0.00	15.35	17.36	4.75	15.46	0.00	10.47
North East	66.30	58.27	61.62	62.63	65.76	59.42	62.16

	Age 6-10	Age 11-15	Girls	Boys	Non-Poor	Poor	Total
North West	39.26	47.37	41.76	44.77	44.41	42.62	43.41
North Central Coast	60.81	52.92	56.99	56.08	53.06	59.36	56.57
South Central Coast	41.71	36.26	37.05	40.68	43.80	35.71	38.80
Central Highlands	53.49	62.10	57.69	56.51	41.23	72.77	57.08
South East	9.66	15.74	18.48	5.82	12.44	12.39	12.43
Mekong River Delta	82.74	69.75	79.76	74.06	77.03	76.73	76.96

Source: estimation from BLS 2007

Table 6. Amount of scholarship per year per pupil (thousand VND)

	Age 6-10	Age 11-15	Girls	Boys	Non-Poor	Poor	Total
Total	47.2	91.7	81.5	58.3	79.7	59.1	69.5
<i>Ethnic minorities</i>							
Kinh	18.4	28.8	27.9	19.4	25.8	18.2	23.7
Tay	161.1	121.1	229.9	63.0	209.0	70.0	139.4
Thai	23.0	92.0	56.8	67.2	94.9	29.7	61.8
Khmer	29.7	27.6	33.6	24.4	26.6	34.8	28.8
Muong	75.6	41.5	73.8	37.8	78.3	33.0	56.7
Nung	37.4	57.2	43.0	52.2	40.4	54.3	47.8
Hmong	45.2	201.6	121.4	106.7	122.6	109.2	112.3
Dao	37.0	171.3	122.6	87.5	142.0	72.4	104.2
Gia Rai	23.1	123.5	26.6	75.5	16.7	88.4	58.7
E De	46.3	109.6	60.5	84.6	67.3	73.5	70.5
Ba Na	39.2	75.5	47.0	56.6	88.2	38.6	52.6
Hre	81.4	86.4	76.0	93.7	68.5	88.8	84.0
Co Tu	26.6	183.4	121.3	90.5	109.9	104.6	106.2
Others in North	19.4	78.7	37.3	64.0	70.9	39.1	50.3
Other in Central	53.7	118.4	104.9	64.8	124.9	57.5	84.7
Others in South	19.5	37.5	31.5	19.2	53.0	14.7	26.3
<i>Regions</i>							
Red River Delta	0.0	11.8	16.7	0.5	12.1	0.0	8.2
North East	84.4	113.6	135.0	68.9	133.1	74.2	99.5
North West	22.5	110.6	60.6	73.5	86.5	52.8	67.7
North Central Coast	36.9	76.1	61.8	54.0	77.3	43.0	58.1
South Central Coast	52.6	115.6	92.4	78.7	106.7	73.0	85.8
Central Highlands	40.5	109.3	81.2	58.3	66.1	72.2	69.2
South East	16.8	30.2	34.9	9.9	25.1	17.4	22.9
Mekong River Delta	23.3	32.1	33.7	20.5	28.3	23.6	27.2

Source: estimation from BLS 2007

Education quality is often lower in remote and mountainous areas than delta areas. To assess the education quality, a detailed survey on education is needed. VHLSSs as well as the 2005 BLS do not contain information on education. However, in BLS 2007, there was a question on difficulties faced by children in education. Although this question is subjective, it can provide some information on the view of children and their parents on education problems (Table 7). Overall, 68% of people said no problem in education. Other people mentioned ‘lack of educational materials’, ‘difficulties in speaking Kinh’, and ‘poor facilities in school’ as difficulties they were confronted. For some ethnic minorities such as Hmong, E De, Hre, study in Kinh (Vietnamese) is a big challenge for them. Lack education materials is also important difficulties for some ethnic minorities such as Khmer and Cotu.

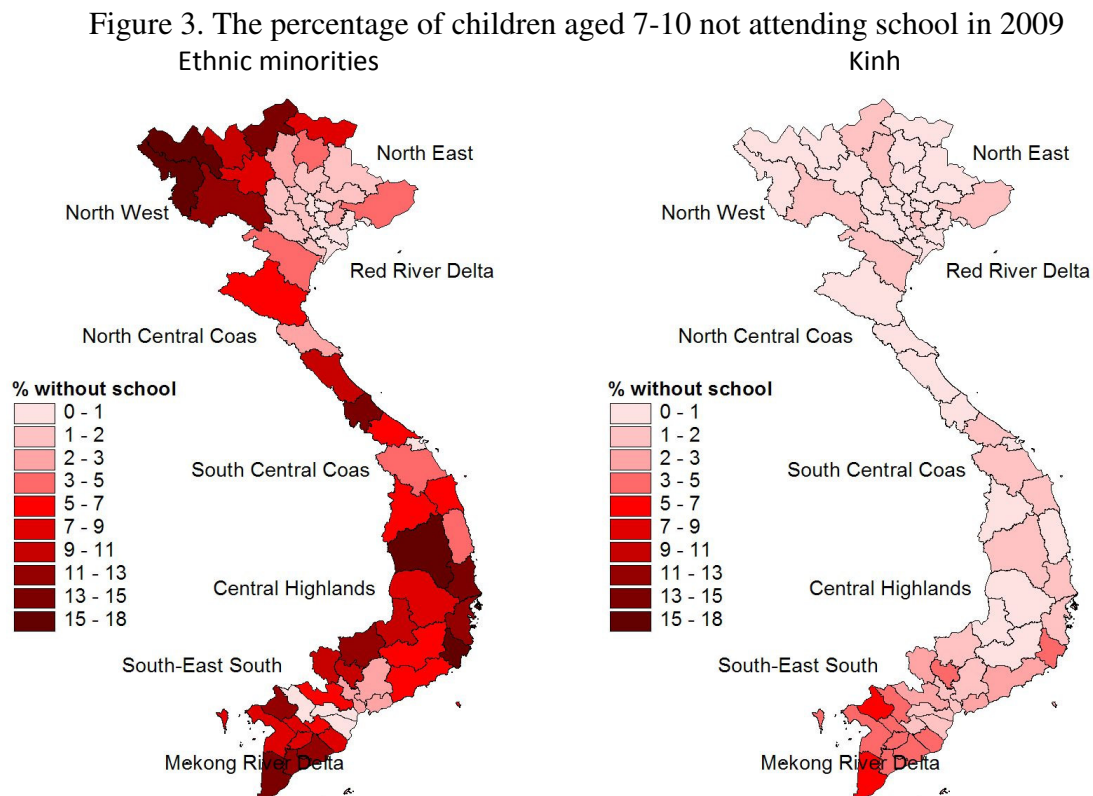
Table 7. Distribution of children by difficulties faced in education

	No difficulty	Lack education materials	Do not speak Kinh well	Poor facilities in school	Other difficulties	Total
Total	68.02	10.34	12.71	5.87	3.06	100
<i>Ethnic minorities</i>						
Kinh	77.19	11.91	0.00	4.93	5.98	100
Tay	79.35	7.48	3.83	8.41	0.94	100
Thai	69.32	10.28	11.84	6.47	2.10	100
Khmer	74.88	22.19	1.12	0.00	1.81	100
Muong	67.23	10.16	3.03	15.68	3.90	100
Nung	78.29	5.49	7.40	6.64	2.18	100
Hmong	47.36	5.58	40.60	4.83	1.62	100
Dao	65.92	5.89	17.83	7.89	2.48	100
Gia Rai	98.60	0.00	1.40	0.00	0.00	100
E De	22.76	0.00	77.24	0.00	0.00	100
Ba Na	78.02	0.00	21.89	0.08	0.00	100
Hre	11.29	0.00	85.90	0.29	2.52	100
Co Tu	46.26	39.55	11.50	0.00	2.68	100
Others in North	61.03	8.32	20.34	6.22	4.10	100
Other in Central	66.52	14.71	10.82	4.85	3.10	100
Others in South	41.54	14.54	28.81	6.61	8.50	100
<i>Regions</i>						
Red River Delta	56.20	35.28	2.54	2.30	3.68	100
North East	71.21	6.22	13.07	7.31	2.19	100
North West	59.95	6.15	25.30	6.55	2.05	100
North Central Coast	69.39	12.62	5.93	9.55	2.51	100

	No difficulty	Lack education materials	Do not speak Kinh well	Poor facilities in school	Other difficulties	Total
South Central Coast	37.77	23.29	32.20	4.33	2.41	100
Central Highlands	80.62	9.36	5.62	2.21	2.19	100
South East	97.27	2.73	0.00	0.00	0.00	100
Mekong River Delta	70.17	18.22	0.47	3.28	7.85	100

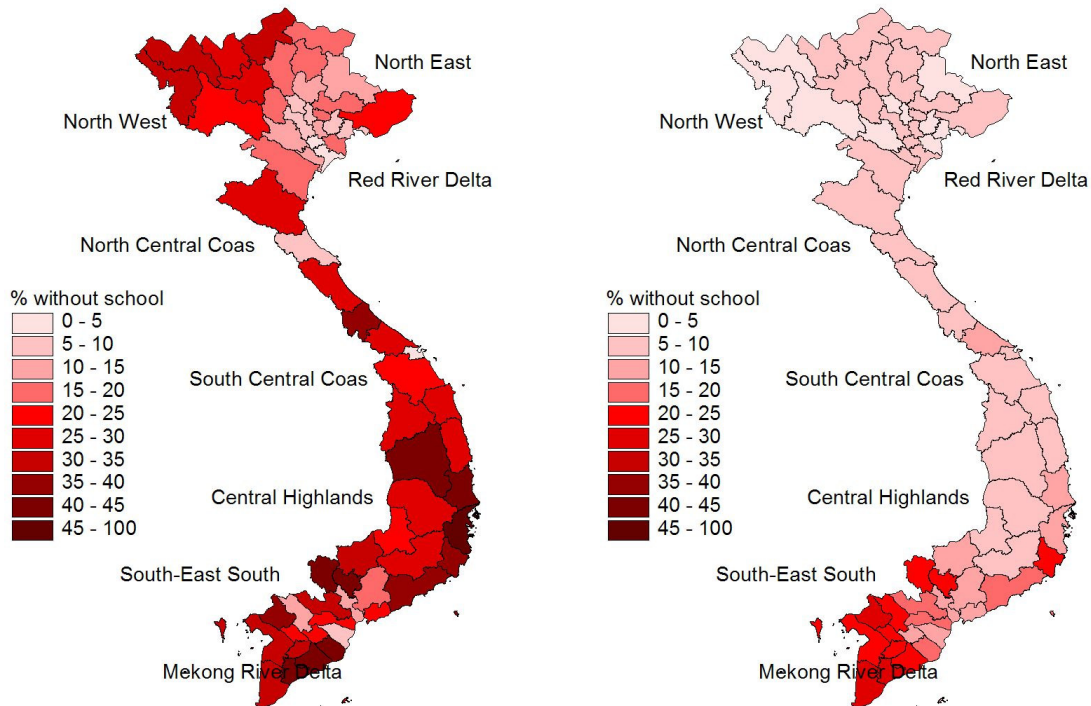
Source: estimation from BLS 2007

Finally, The 2009 PHC contains data school, and this large sample data allows for analysis at the province and district level. For targeted programs on education supports, it is necessary to identify small areas such as districts and communes in which there is a high proportion of children not attending school. Figure 3 and 4 show that there is a variation, albeit not a large one, in educational enrolment among provinces within a region. The estimates at the provincial level and the map of education enrolment at the district level are reported in Appendix.



Source: estimation from PHC 2009

Figure 4. The percentage of children aged 11-15 not attending school in 2009  
Ethnic minorities Kinh



Source: estimation from PHC 2009

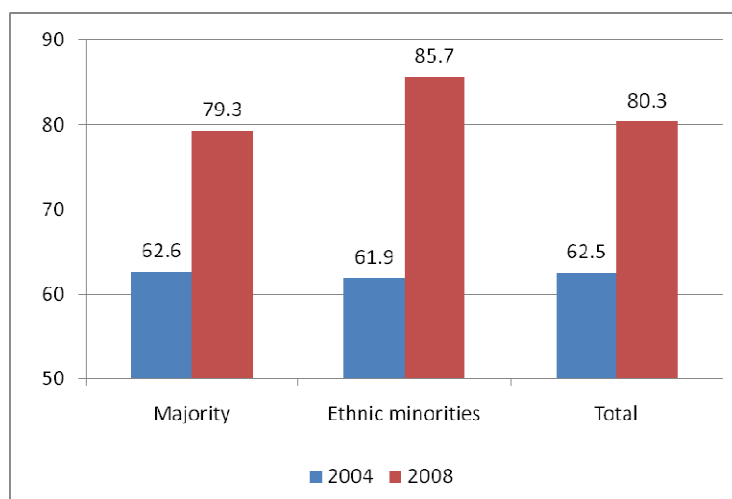
### 3.2. Access to Health Care Services

Health is also set up as important Millennium Development Goals (MDGs) that Vietnam commit to fulfillment. Among eight MDGs that Vietnam commits, there are three MDGs on health, i.e. reduce child mortality, improve maternal health and combat HIV, malaria and other diseases. Health of people has been increasingly improved. Vietnam have achieved better health indicators than countries with a similar development level, and Vietnam continues to improve at rates that equal or surpass those in most neighboring countries (Adams, 2005). The fraction of children with low weight at birth decreased from 7.3% in 2000 to 5.1% in 2005. The percentage of children under year olds with malnutrition was reduced from 33.8% in 2001 to 25.2% in 2005 (World Bank, 2007).

Vietnam has implemented a number of health programmes to improve the access of people to health care services. The national health support program for the poor have provided free health insurance and free health card for around 21% of the people above 5 years old. The National Strategy for People's Health Care 2001–2010 has been set and

implemented with objectives to improve health statuses of the people. As a result, the proportion of children with health insurance increased significantly during 2000s. The ethnic minority children are more likely to have health insurance than Kinh children (Figure 6).

Figure 5. Percentage of children having health insurance 2004-2008



Source: estimation from VHLSSs 2004 and 2008

Around 90% of children in communes under program 135-II had health insurance in 2007 (Table 8). For many ethnic minorities, the proportion of children with health insurance was very high, nearly 100% of children having health insurance. The poor children are more likely to have health insurance than the non-poor children.

Table 8. Percentage of children having health insurance

	Age 6-10	Age 11-15	Girls	Boys	Non-Poor	Poor	Total
<i>Total</i>	90.74	89.00	90.06	89.55	85.74	93.65	89.80
<i>Ethnic minorities</i>							
<i>Kinh</i>	80.11	76.34	78.74	77.43	74.23	87.73	78.08
<i>Tay</i>	91.62	95.89	94.21	93.92	91.17	96.66	94.05
<i>Thai</i>	89.55	95.17	94.51	91.05	92.00	93.68	92.86
<i>Khmer</i>	90.45	77.88	80.47	86.17	84.77	79.81	83.41
<i>Muong</i>	85.05	77.01	82.88	77.53	78.14	82.48	80.31
<i>Nung</i>	91.25	91.31	93.32	89.47	94.33	88.67	91.28
<i>Hmong</i>	96.85	98.27	98.17	97.03	97.99	97.42	97.54
<i>Dao</i>	92.95	92.89	92.23	93.61	93.99	91.98	92.91



	Age 6-10	Age 11-15	Girls	Boys	Non-Poor	Poor	Total
<i>Gia Rai</i>	100.00	100.00	100.00	100.00	100.00	100.00	100.00
<i>E De</i>	96.56	96.31	97.65	94.48	90.62	100.00	96.41
<i>Ba Na</i>	100.00	98.44	98.41	100.00	100.00	99.00	99.30
<i>Hre</i>	99.43	98.67	99.29	98.68	96.87	99.67	99.00
<i>Co Tu</i>	98.76	93.11	93.00	98.78	97.97	94.93	95.82
<i>Others in North</i>	98.20	98.74	98.77	98.16	100.00	97.74	98.48
<i>Other in Central</i>	100.00	97.88	98.76	99.02	97.89	99.56	98.89
<i>Others in South</i>	97.58	88.28	94.04	93.11	95.23	93.01	93.66
<i>Regions</i>							
<i>Red River Delta</i>	96.30	72.71	79.09	79.85	79.19	80.04	79.47
<i>North East</i>	95.27	94.59	94.68	95.10	93.53	95.83	94.90
<i>North West</i>	94.87	97.38	97.45	95.08	97.73	95.17	96.24
<i>North Central Coast</i>	89.02	90.11	91.33	87.89	85.89	92.51	89.64
<i>South Central Coast</i>	99.37	96.15	96.62	98.56	96.86	97.99	97.56
<i>Central Highlands</i>	98.85	93.17	94.69	97.58	93.30	98.88	96.19
<i>South East</i>	85.24	87.26	90.65	81.79	82.65	93.06	86.25
<i>Mekong River Delta</i>	73.92	64.52	68.02	70.21	67.00	75.42	69.11

Source: estimation from BLS 2007

Health status is an important indicator of health. It is a pity that both VHLSSs and the 2007 BLS do not contain information on weight or height. However, there is information on the number of sick days during the past 12 months. Table 9 shows that this indicator varies across ethnic minority groups. Some groups such as Khmer, Gia Rai and Ba Na had much longer sick time than other groups.

Table 9. The average number of sick days during the past 12 months

	Age 0-5	Age 6-10	Age 11-15	Girls	Boys	Non-Poor	Poor	Total
Total	9.41	6.93	7.77	8.49	7.86	8.57	7.77	8.16
<i>Ethnic minorities</i>								
Kinh	12.48	8.73	6.88	9.31	9.29	9.39	9.06	9.30
Tay	7.23	7.08	6.44	7.44	6.53	7.18	6.66	6.94
Thai	9.45	7.47	7.86	8.25	8.41	9.03	7.61	8.33
Khmer	15.66	5.65	15.81	12.99	10.35	11.11	13.03	11.68
Muong	10.99	7.09	10.65	10.36	9.26	10.82	8.84	9.88
Nung	8.68	6.63	5.64	5.79	7.77	6.51	7.25	6.91
Hmong	6.77	4.96	5.23	5.97	5.84	5.14	6.13	5.90
Dao	7.17	4.56	6.33	6.08	6.27	6.71	5.70	6.18

	Age 0-5	Age 6-10	Age 11-15	Girls	Boys	Non- Poor	Poor	Total
Gia Rai	19.07	22.63	5.00	18.35	20.16	18.46	19.93	19.14
E De	5.42	3.13	3.32	4.41	3.03	4.70	3.30	4.24
Ba Na	14.67	8.41	4.00	13.12	12.51	6.92	15.85	12.73
Hre	5.88	4.55	5.44	5.26	5.33	5.07	5.34	5.30
Co Tu	8.05	7.24	6.82	7.90	7.17	6.40	8.20	7.52
Others in North	7.04	12.59	14.93	15.13	5.43	4.87	13.21	10.82
Other in Central	7.91	6.20	8.18	7.87	7.02	7.28	7.57	7.46
Others in South	8.26	7.25	7.58	7.51	8.24	8.10	7.70	7.90
<i>Regions</i>								
Red River Delta	8.72	4.89	5.89	6.43	6.25	7.64	4.16	6.33
North East	7.51	5.97	7.18	7.40	6.55	7.07	6.84	6.93
North West	8.30	7.12	8.93	8.69	7.57	8.07	8.17	8.13
North Central Coast	9.99	7.93	7.82	9.10	8.19	9.29	8.05	8.66
South Central Coast	7.02	7.38	4.68	5.88	6.82	6.64	6.12	6.35
Central Highlands	9.99	6.13	5.29	6.79	8.23	7.98	7.03	7.56
South East	17.37	12.49	10.64	13.19	13.07	12.63	14.31	13.12
Mekong River Delta	15.13	5.33	12.67	12.89	9.63	10.58	12.62	11.09

Source: estimation from BLS 2007

The access to health care services is reflected by health care visits. Table 12 presents the average annual outpatient contacts. As expected, small children are more likely to use the health services. The non-poor children tends to visit the health centers more than the poor children.

Child in poor regions and ethnic minority groups remain have lower utilization rates than other children. It might be because these people tend to stay in areas with low-quality health facilities, thus they are less likely to visit the health stations. In addition, they have a lower number of sick days.

Table 10. The number of annual health care contacts

	Age 0-5	Age 6-10	Age 11-15	Girls	Boys	Non- Poor	Poor	Total
Total	2.13	1.33	1.08	1.47	1.54	1.88	1.18	1.51
<i>Ethnic minorities</i>								
Kinh	2.77	2.17	2.03	2.40	2.24	2.59	1.64	2.32
Tay	1.66	1.16	0.86	1.01	1.32	1.46	0.93	1.17
Thai	1.71	0.91	0.59	0.98	1.07	0.98	1.07	1.03

	Age 0-5	Age 6-10	Age 11-15	Girls	Boys	Non- Poor	Poor	Total
Khmer	7.13	3.54	1.80	3.29	4.41	3.23	5.36	3.87
Muong	2.05	1.18	1.08	1.50	1.37	1.46	1.42	1.44
Nung	1.86	1.36	1.19	1.36	1.52	1.57	1.35	1.44
Hmong	1.05	0.52	0.27	0.59	0.70	0.68	0.64	0.65
Dao	1.64	0.68	0.65	0.97	0.96	0.97	0.96	0.97
Gia Rai	1.31	0.61	0.07	0.80	0.71	1.25	0.48	0.75
E De	2.73	2.39	1.94	2.40	2.13	3.91	1.09	2.29
Ba Na	1.29	0.13	0.21	0.80	0.49	0.63	0.62	0.62
Hre	2.90	1.71	1.66	2.12	2.19	3.12	1.76	2.15
Co Tu	1.05	0.68	0.40	0.71	0.68	0.93	0.58	0.70
Others in North	1.49	0.50	0.39	0.89	0.70	1.04	0.69	0.79
Other in Central	1.73	0.95	1.06	1.26	1.24	1.31	1.21	1.25
Others in South	0.53	0.44	0.25	0.46	0.42	0.60	0.37	0.44
<i>Regions</i>								
Red River Delta	2.69	3.79	1.71	2.99	1.78	2.82	1.81	2.43
North East	1.42	0.86	0.64	0.91	1.00	1.12	0.86	0.96
North West	1.38	0.63	0.53	0.83	0.87	0.88	0.83	0.85
North Central Coast	1.52	1.07	0.95	1.23	1.13	1.31	1.08	1.18
South Central Coast	2.36	2.00	1.11	1.62	1.96	2.32	1.44	1.79
Central Highlands	2.07	1.20	0.94	1.35	1.53	1.96	1.02	1.45
South East	1.86	1.77	1.68	1.59	1.99	1.99	1.29	1.77
Mekong River Delta	4.97	2.80	2.64	3.39	3.52	3.37	3.70	3.46

*Source: estimation from BLS 2007*

Out-of-pocket expenses are examined in Table 11. The out-of-pocket expenses include all expenses related to each health care visit including treatment fees, drugs, and spending on bonus, tip for doctors, cost for travel, meal, accommodation. Overall, the poor, ethnic minorities, and children living in mountainous regions have much lower out-of-pocket spending than the non-poor, Kinh and children in delta regions. There might be three possible explanations for this. Firstly, poor and ethnic minority children are more likely to have health insurance, and health insurance can help them reduce out-of-pocket health spending. Secondly, health care services in rural and remote areas where the poor and ethnic minorities are mainly located can have lower quality and lower cost than health care in urban and rich regions. Thirdly, with limited budget, the poor tend to consume less on health care services.

Table 11. The annual health care spending (thousand VND)

	Age 0-5	Age 6-10	Age 11-15	Girls	Boys	Non- Poor	Poor	Total
Total	76.8	43.3	38.3	44.9	60.1	77.1	31.1	52.7
<i>Ethnic minorities</i>								
Kinh	179.7	91.0	77.6	95.7	136.0	130.2	80.1	116.0
Tay	31.1	53.4	14.2	25.1	36.6	33.1	29.4	31.1
Thai	43.1	31.5	25.1	28.1	36.8	52.5	15.1	32.4
Khmer	131.6	57.3	82.7	96.5	81.2	92.9	78.7	88.7
Muong	98.4	62.0	19.0	46.3	71.0	52.6	63.4	57.9
Nung	36.9	31.5	29.0	26.9	37.3	36.9	28.8	32.1
Hmong	17.6	8.1	2.3	6.2	13.4	10.5	10.0	10.1
Dao	60.8	18.0	51.8	18.7	71.3	63.1	29.4	44.4
Gia Rai	35.8	55.0	2.3	19.0	46.5	49.8	24.7	33.7
E De	12.7	1.8	4.0	8.7	1.3	10.3	2.3	5.7
Ba Na	22.0	0.1	0.0	5.5	11.4	5.0	10.8	8.9
Hre	62.3	28.2	55.3	51.5	49.8	104.3	28.9	50.6
Co Tu	36.0	6.3	19.4	26.5	15.1	35.7	13.1	20.5
Others in North	63.7	45.1	37.7	64.8	32.1	24.3	58.9	48.8
Other in Central	39.8	16.5	18.7	22.0	28.0	34.0	19.5	25.0
Others in South	18.6	5.2	11.8	8.3	18.2	31.5	4.9	12.9
<i>Regions</i>								
Red River Delta	79.1	136.3	52.3	43.7	116.1	84.1	66.4	77.2
North East	42.7	32.3	17.5	24.2	35.6	35.4	27.0	30.1
North West	51.5	21.3	28.9	33.0	35.5	50.3	23.4	34.3
North Central Coast	34.3	45.7	43.5	34.2	48.3	59.8	27.5	41.0
South Central Coast	63.3	63.4	26.8	32.5	66.3	94.6	19.5	49.8
Central Highlands	65.3	64.1	42.7	62.5	54.7	95.8	27.0	58.3
South East	44.2	59.5	15.7	33.1	47.9	44.1	30.4	39.8
Mekong River Delta	224.1	61.2	99.8	104.9	150.2	142.8	85.9	127.9

Source: estimation from BLS 2007

There is no data on health care quality. However, the 2007 BLS contain data on health care contacts by health care providers. Table 12 presents the health care contact and spending by health care service providers. Most of people used public services provided by commune health centers and hospitals. It is expected health care services provided by hospital have higher quality than those provided by commune health centers. Kinh children are more likely to have higher health care contact in hospitals than ethnic minority children. Some ethnic minorities such as Dao, Hmong, Ba Na and those located

in mountainous regions, the number of health care visits to hospitals was very low. This implies to limited access to high-quality health care services provided by hospitals.

Table 12. Health care contacts and spending by health care providers

	The number of annual health care contacts			The annual health care spending (thousand VND)		
	Commune health centers	Public hospitals	Private health centers	Commune health centers	Public hospitals	Private health centers
Total	0.78	0.16	0.57	5.86	29.77	17.03
<i>Ethnic minorities</i>						
Kinh	0.75	0.36	1.21	6.83	65.71	43.42
Tay	0.83	0.13	0.21	5.58	21.74	3.77
Thai	0.82	0.05	0.15	8.94	15.74	7.76
Khmer	1.02	0.31	2.54	1.25	54.84	32.58
Muong	1.04	0.13	0.28	19.38	27.77	10.70
Nung	1.09	0.21	0.14	4.82	19.40	7.90
Hmong	0.49	0.03	0.13	1.36	6.08	2.65
Dao	0.86	0.05	0.05	7.46	21.20	15.74
Gia Rai	0.32	0.06	0.38	0.51	16.63	16.60
E De	2.23	0.05	0.01	5.02	0.54	0.10
Ba Na	0.48	0.01	0.13	0.15	1.83	6.97
Hre	1.59	0.29	0.28	1.91	26.22	22.51
Co Tu	0.49	0.20	0.01	0.00	20.38	0.11
Others in North	0.50	0.14	0.15	9.75	33.16	5.85
Other in Central	0.95	0.09	0.21	5.55	12.48	6.98
Others in South	0.24	0.04	0.16	1.97	7.17	3.75
<i>Regions</i>						
Red River Delta	1.27	0.71	0.45	30.14	37.15	9.93
North East	0.74	0.10	0.12	5.36	21.07	3.67
North West	0.68	0.04	0.13	6.70	20.09	7.47
North Central Coast	0.67	0.09	0.42	9.89	14.89	16.27
South Central Coast	1.33	0.33	0.13	0.65	35.82	13.28
Central Highlands	0.77	0.12	0.55	5.17	24.56	28.53
South East	1.15	0.24	0.38	4.79	21.31	13.69
Mekong River Delta	0.68	0.39	2.39	2.07	72.17	53.65

Source: estimation from BLS 2007

A reason for low use of health care services in hospital for ethnic minorities is the poor infrastructure and large distance to hospital. There are regional programmes such as Programme 30A (Infrastructure component, Programme for Fast and Sustainable Poverty

Reduction in 62 poor districts according to Resolution 30A/2008/NQ-CP), aiming to improve healthcare access in the Central Highlands, Northern Mountainous areas, Central Coastal areas. Improving physical conditions of healthcare facilities in remote areas is a focus of the infrastructure components of some significant poverty reduction programmes such as Programme 135-II or Programme 30A. Distance to the nearest hospital is very long for communes under the Programme 135-II, around 21km. Ede and CoTu are those who have a very long distance to the nearest hospital, around 30 km.

Table 13. Distance (km) and travel time to health centers (minute)

	Distance (km)				Travel time (minute)			
	All	Com. health centers	Public hospitals	Private health centers	All	Com. health centers	Public hospitals	Private health centers
Total	6.41	3.43	21.24	7.00	34.33	27.68	56.40	39.07
<i>Ethnic minorities</i>								
Kinh	7.41	2.53	23.22	6.61	26.32	14.61	50.30	29.23
Tay	6.39	2.79	21.72	6.87	30.61	23.66	62.32	30.40
Thai	5.32	3.42	27.41	7.64	29.05	24.12	77.91	37.30
Khmer	3.80	3.48	9.95	2.23	17.59	18.07	27.32	14.16
Muong	5.29	2.71	26.62	4.07	22.41	16.81	56.38	24.17
Nung	5.27	3.20	9.81	10.79	42.49	35.90	59.64	55.88
Hmong	8.15	4.34	17.93	24.12	72.85	41.41	95.33	228.50
Dao	6.19	4.20	25.93	7.82	43.65	41.81	73.76	31.47
Gia Rai	6.46	3.01	21.28	9.38	19.70	14.16	38.43	27.22
E De	4.70	3.58	30.00	0.50	48.88	49.39	45.97	6.00
Ba Na	3.58	2.60	23.06	2.71	16.29	16.31	46.96	11.50
Hre	7.73	3.38	18.16	12.78	29.15	25.21	38.94	38.28
Co Tu	12.05	2.06	30.27	0.30	25.02	13.97	44.38	15.00
Others in North	7.25	3.95	28.86	6.90	51.50	36.41	138.87	33.00
Other in Central	5.88	4.32	22.30	7.19	39.52	40.26	48.79	29.69
Others in South	5.79	4.51	23.84	5.36	34.60	28.06	70.16	39.05
<i>Regions</i>								
Red River Delta	5.26	1.81	16.91	1.60	17.01	11.60	35.05	8.85
North East	6.44	3.43	20.21	9.14	41.03	31.81	69.40	62.38
North West	6.94	4.22	30.47	12.51	46.78	33.45	83.99	104.50
North Central Coast	6.12	3.81	21.42	7.96	29.50	23.51	59.78	34.82
South Central Coast	7.96	2.76	23.34	12.52	33.93	29.30	47.36	40.91
Central Highlands	6.63	3.02	24.50	9.40	27.59	24.45	57.54	24.91
South East	5.33	2.94	29.09	7.17	19.52	16.26	51.30	23.94
Mekong River Delta	5.88	2.84	16.08	3.98	26.26	18.38	36.12	25.68

Source: estimation from BLS 2007

About 42% of the health care contacts received fee reductions. The main reason for fee reduction is that children in poorest communes are allowed for fee reduction. In addition, a large proportion of children had health insurance. The poor children and children in poor ethnic minority groups are more likely to have fee reduction than the non-poor children and those in better-off ethnic minority groups. However, some poor ethnic minority groups including Khmer, Muong and Bana have quite low reduction rate compared with other ethnic minorities.

Table 14. Proportion of health care contacts with fee reduction (%)

	Age 0-5	Age 6-10	Age 11-15	Girls	Boys	Non- Poor	Poor	Total
Total	45.52	39.90	39.94	41.60	42.97	36.77	48.68	42.31
<i>Ethnic minorities</i>								
Kinh	27.39	20.73	27.25	23.37	27.10	22.72	33.13	25.28
Tay	56.40	52.53	37.85	50.92	48.55	44.65	54.82	49.60
Thai	53.80	51.03	64.02	54.47	57.62	54.06	57.81	56.09
Khmer	20.20	25.51	9.85	17.95	20.83	21.41	14.25	19.66
Muong	36.98	32.08	21.83	32.21	29.19	35.99	24.88	30.88
Nung	63.40	45.01	46.51	53.22	51.72	54.05	51.34	52.47
Hmong	54.95	53.52	59.80	56.70	54.21	67.07	51.83	55.30
Dao	58.75	54.23	54.28	52.70	60.13	61.05	52.45	56.42
Gia Rai	43.10	51.84	24.36	33.46	58.47	25.61	66.66	44.32
E De	64.96	41.91	44.03	58.64	36.02	44.72	62.03	51.00
Ba Na	40.51	53.06	45.30	47.42	37.90	58.86	33.69	42.09
Hre	45.45	51.88	46.49	47.17	47.33	39.00	51.74	47.24
Co Tu	66.31	77.13	79.28	71.78	75.16	69.38	75.74	73.43
Others in North	52.83	57.92	71.89	59.60	58.34	51.01	62.57	59.01
Other in Central	62.43	60.99	56.14	58.73	61.66	55.51	62.94	60.17
Others in South	66.48	49.33	14.79	52.63	55.83	56.74	52.16	54.00
<i>Regions</i>								
Red River Delta	38.18	19.27	24.16	21.32	35.45	17.44	43.70	27.76
North East	55.29	52.89	46.82	52.17	52.40	52.88	51.87	52.29
North West	54.35	53.36	59.08	53.15	57.32	58.49	52.85	55.27
North Central Coast	46.96	40.40	45.31	44.98	43.91	43.23	45.62	44.47
South Central Coast	51.84	50.79	57.79	51.73	55.21	46.72	58.88	53.47
Central Highlands	51.35	42.22	42.04	47.03	46.14	35.06	59.88	46.55
South East	42.50	38.85	41.53	42.78	39.09	40.63	41.54	40.86
Mekong River Delta	15.08	14.44	6.06	11.09	13.78	11.35	17.01	12.51

Source: estimation from BLS 2007

### 3.3. Access to Shelters

Important welfare indicators are access to assets and housing conditions. Ethnic minorities are often mentioned as lack of assets. Table 17 shows that there is a gap in asset ownership as well as housing condition between Kinh and ethnic minorities. However, this gap tended to decrease over the period 2004-2008.

Table 15. Percentage of children by asset and housing characteristics during 2004-2008

	2004			2008		
	Kinh	Ethnic minorities	Total	Kinh	Ethnic minorities	Total
Television	89.02	78.12	88.27	95.37	90.40	94.98
Motorbike	65.10	56.00	64.47	80.51	81.27	80.57
Telephone	27.58	6.93	26.15	57.11	34.68	55.38
Electricity	96.53	83.35	95.61	99.28	92.58	98.77
Solid house	84.22	71.37	83.33	90.65	77.08	89.60

*Source: estimation from VHLSSs 2004 and 2008*

Compared with overall ethnic minorities throughout the country, ethnic minority children in Program 135-II have much lower access to assets and housing condition. Television and telephone seems a luxury for poor children. Only 12% of children in Hmong households live in a house with a television. 95% of children live in a house with electricity throughout the country. Yet, in these Program 135-II areas, only 77% and 53% of the non-poor and poor children live in a house with electricity. Especially for Hmong and Dao, this proportion for the poor children is less than 30%. By regions, North West is the poorest areas with limited assets.

Figures 7 presents the geographic pattern of children's access to basic assets using the 2009 PHC. Children living in provinces which have dark colors are in shortage of basic assets. As expected, ethnic minority children provinces in Northern region and Central regions are more like to living in a house with very limited assets compared with other regions. The maps at the district level are presented in Appendix. It shows that within a region or a province, there is variation in the access to basic assets and housing conditions.

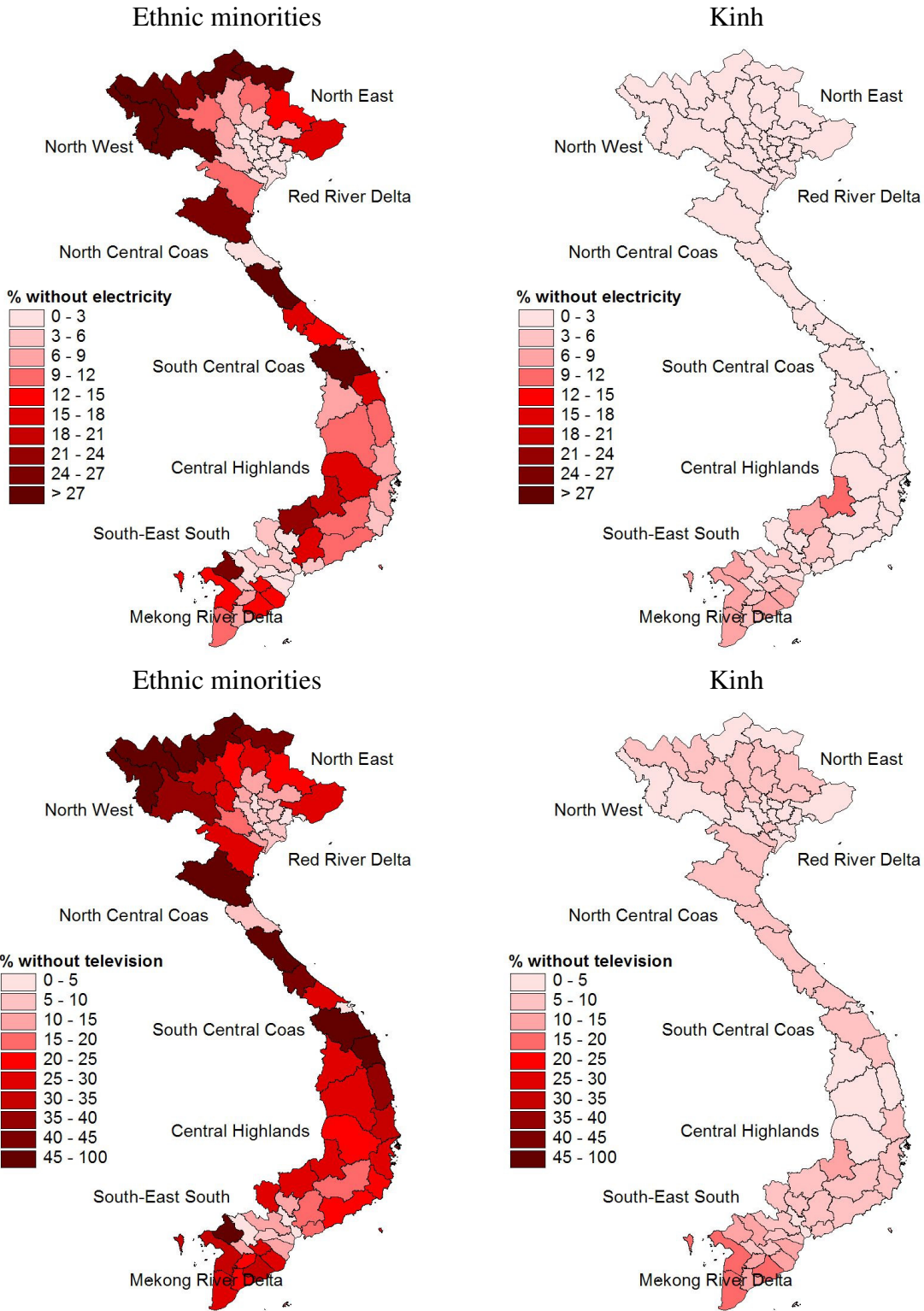


Table 16. Percentage of children by assets

	Non-Poor					Poor				
	Television	Motorbike	Telephone	Electricity	Solid house	Television	Motorbike	Telephone	Electricity	Solid house
Total	65.93	52.80	24.70	76.84	63.86	35.07	31.98	3.77	53.37	56.71
<i>Ethnic minorities</i>										
Kinh	81.15	53.52	46.30	93.76	58.67	57.16	34.93	14.79	79.38	48.75
Tay	79.80	63.80	21.24	89.08	68.38	53.01	41.61	4.26	68.66	53.07
Thai	58.84	60.95	5.05	52.55	82.25	33.82	30.30	2.10	52.09	63.64
Khmer	43.69	29.41	23.87	75.86	26.05	32.22	25.22	7.92	63.14	14.22
Muong	80.68	53.07	17.21	95.72	71.29	52.22	33.06	3.85	80.01	53.71
Nung	71.98	68.71	18.53	82.10	87.70	40.31	33.02	2.20	59.82	72.40
Hmong	38.42	46.08	6.38	54.45	73.58	12.08	20.46	0.64	26.54	63.67
Dao	55.06	57.63	7.38	39.84	82.11	33.21	38.62	1.55	27.65	53.51
Gia Rai	83.00	98.59	16.22	96.76	49.64	74.83	93.29	0.00	82.38	77.87
E De	61.21	84.57	5.46	90.58	85.03	47.83	75.62	3.91	74.16	85.50
Ba Na	42.25	89.74	0.50	100.00	82.98	41.71	53.48	0.00	97.37	45.51
Hre	45.94	59.96	0.00	70.01	95.34	43.74	38.74	0.00	64.90	74.34
Co Tu	56.13	21.27	9.63	56.47	61.96	25.10	6.19	0.00	70.80	61.06
Others in North	77.92	37.09	10.98	84.22	64.90	48.90	47.24	8.74	52.55	47.47
Other in Central	49.00	53.10	5.04	49.75	60.85	36.99	35.06	0.00	54.23	61.21
Others in South	35.62	24.35	2.13	72.30	80.23	23.63	24.74	0.00	68.79	49.72
<i>Regions</i>										
Red River Delta	94.10	37.32	39.04	100.00	97.41	87.42	49.13	14.93	100.00	93.51
North East	68.35	57.33	18.79	73.82	77.06	32.05	26.29	2.95	46.85	62.57
North West	59.73	70.18	10.13	53.11	75.33	23.68	41.91	1.27	33.42	55.95
North Central Coast	57.49	37.74	18.51	76.62	84.37	40.73	25.18	1.13	75.45	58.69
South Central Coast	66.12	57.51	24.86	74.43	88.53	34.79	23.81	1.22	66.02	78.24
Central Highlands	77.65	78.90	34.37	94.85	73.94	53.28	52.79	5.83	76.90	49.68
South East	84.74	80.14	40.11	88.57	70.46	68.70	37.74	1.87	81.09	64.40
Mekong River Delta	60.61	27.20	34.31	86.18	24.94	35.62	22.50	16.76	59.00	16.05

Source: estimation from BLS 2007

Figure 6. Percentage of children living in a house without electricity or a television



Source: estimation from PHC 2009

### 3.4. Access to Water and Sanitation

Access to clean water remains a big challenge for ethnic minorities. There is supports from the government on improvement of water quality for the poor and ethnic minorities such as Program 134 on supporting housing, land and drinking water for ethnic minorities (Decision 134/TTg). There is still a large gap in access to clean water between ethnic minorities and Kinh children. In 2008, the proportion of children who had access to clean water was 96% and 65% for the Kinh and ethnic minorities, respectively (Table 17). Lack of clean water can cause many problems to health. World Health Organization (2004) mentioned that contaminated water resulted in thousands of deaths every day, mostly in children under five years in developing countries. UNDP (2006) claimed that unsafe water and shortage of basic sanitation caused 80 percent of diseases and killed more people than all forms of violence, including wars. Thus improvement of water quality is an important measure to improve child health in the long run.

Sanitation is not well ensured for ethnic minorities. Flush and semi-flush toilet is rare for ethnic minorities. In 2008, around 5% of ethnic minority children below 16 years old lived in a house with flush and semi-flush toilet, while this figure for Kinh children is 43%. Table 17 show the percentage of children lives in a house with toilet. Although there is a gap between Kinh and ethnic minorities, this gap tends to decrease during 2004-2008.

Table 17. Percentage of children by sanitation during 2004-2008

	2004			2008		
	Kinh	Ethnic minorities	Total	Kinh	Ethnic minorities	Total
Having toilet	88.57	75.85	87.68	93.76	85.66	93.13
Having clean water	88.89	49.37	86.15	95.70	64.62	93.30

*Note:* The clean water is defined as tap water, water from deep well or solidly constructed well, or water from other sources but purified before using.

*Source:* estimation from VHLSSs 2004 and 2008

Table 18 examines the housing characteristics of children in the Program 135-II communes. The proportion of poor children living in a household with toilet or clean water is 39% and 33%, respectively. This proportion is very small compared with the non-poor children in the same areas as well as the national level. Most the poor do not have clean water and toilet. Several ethnic minorities such as Gia Rai, Ba Na, E De have a extremely low access to clean water and they do not often boil water before drinking. As

mentioned, this can cause health problems for children who are more vulnerable to health shocks than adults.

Table 18. Percentage of children by housing conditions

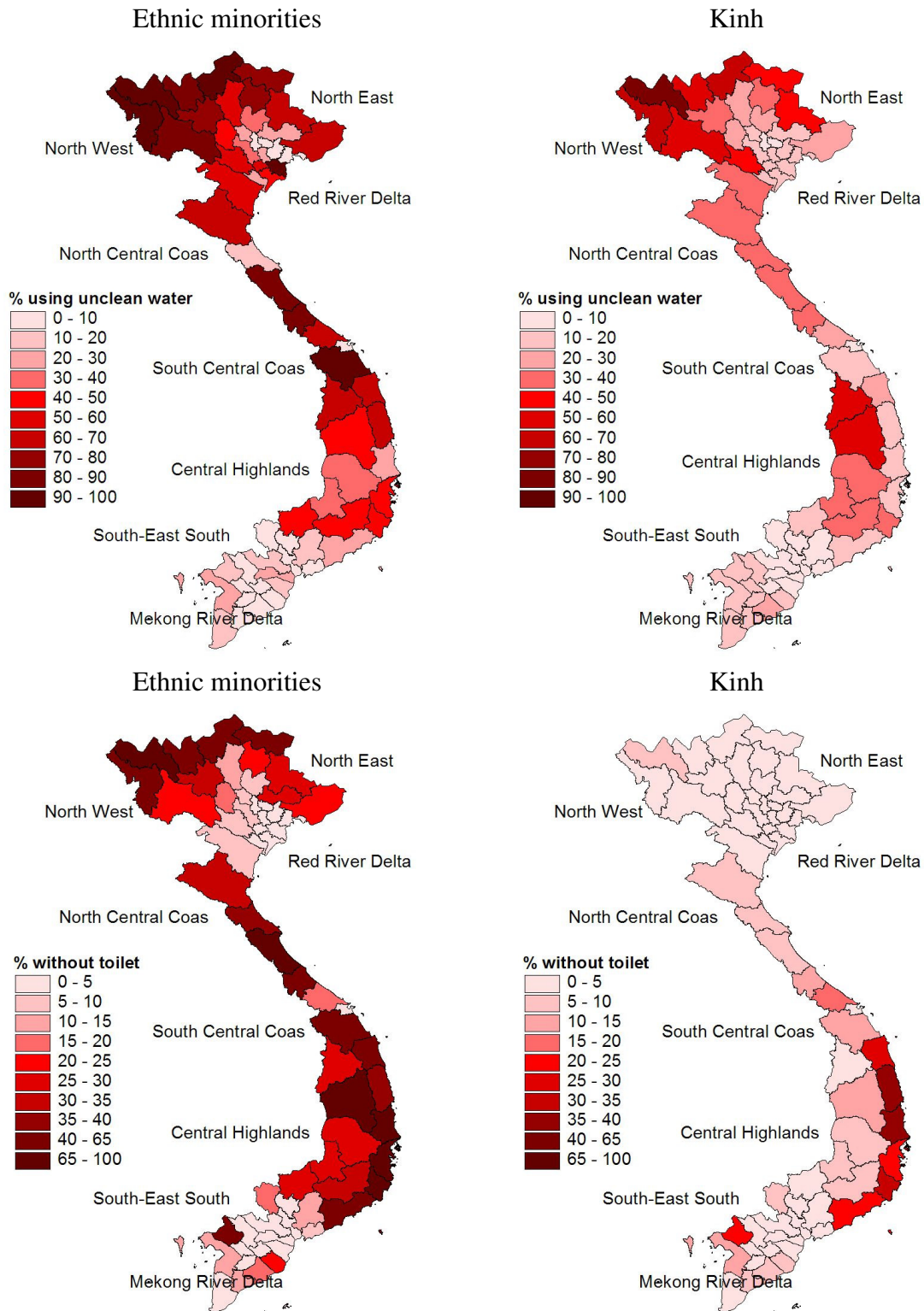
	Non-Poor			Poor		
	Having toilet	Having clean water	Boil water for drink	Having toilet	Having clean water	Boil water for drink
Total	68.87	58.17	81.94	39.31	33.12	78.92
<i>Ethnic minorities</i>						
Kinh	86.03	89.63	77.04	71.64	82.00	76.67
Tay	68.82	44.95	97.00	52.50	29.12	97.47
Thai	66.37	28.06	97.57	48.29	21.48	95.27
Khmer	72.91	98.80	43.27	55.04	92.10	36.48
Muong	80.14	43.70	99.00	76.04	53.12	100.00
Nung	73.21	31.34	95.21	38.65	20.56	94.96
Hmong	23.47	16.96	83.73	10.24	22.79	66.83
Dao	50.75	12.27	96.83	28.87	8.46	92.58
Gia Rai	72.49	63.71	73.31	55.71	46.07	42.64
E De	9.42	28.57	77.85	0.00	51.47	59.03
Ba Na	70.74	66.04	25.70	36.59	23.89	15.68
Hre	45.24	59.83	91.15	42.90	46.15	87.70
Co Tu	57.69	8.70	98.75	37.51	0.00	100.00
Others in North	42.01	41.80	92.52	14.15	15.89	85.76
Other in Central	50.75	19.25	89.68	51.14	17.21	80.88
Others in South	20.68	27.40	99.00	15.35	9.25	80.64
<i>Regions</i>						
Red River Delta	84.05	96.79	100.00	78.58	92.53	100.00
North East	60.68	38.09	95.07	31.95	29.13	78.24
North West	64.78	22.31	94.73	33.27	18.57	92.07
North Central Coast	59.82	45.65	99.72	50.28	32.72	93.50
South Central Coast	45.15	48.33	95.58	33.55	32.50	84.18
Central Highlands	76.51	60.42	77.31	47.34	28.95	62.18
South East	64.24	87.83	93.51	23.78	47.35	64.37
Mekong River Delta	85.05	99.03	46.77	74.63	87.99	37.68

*Note:* The clean water is defined as tap water, water from deep well or solidly constructed well, or water from other sources but purified before using.

*Source:* estimation from VHLSSs 2004 and 2008

Figure 8 presents the geographic access to clean water and toilet in Vietnam. Children in North West and Central are more unlikely to have clean water and toilet than children in other areas.

Figure 7. Percentage of children living in a house without clean water or toilet

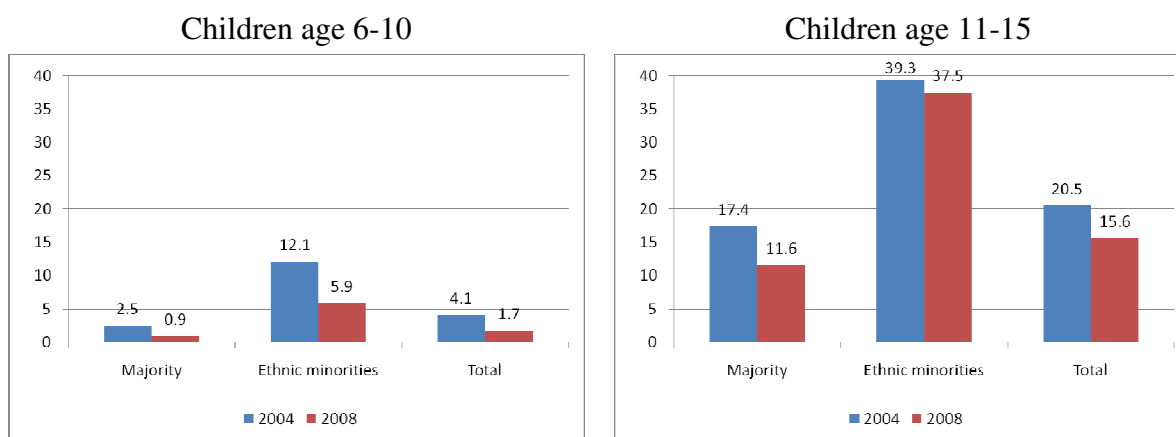


Source: estimation from PHC 2009

### 3.5. Child Work

A factor which can reduce the schooling rate of children in poor areas is child labor. Although Vietnam experienced a remarkable reduction in child labor during the 1990s (Edmonds and Turk, 2002), there was still a large proportion of children in ethnic minorities working (Figure 9). More specifically, around 6% of children aged 6 to 10 and 38% of children aged 11 to 15 had to work in 2004 and 2008, respectively. According to the 2008 VHLSS, the proportion of children, who have to work full time (defined as the number of total annual working hours is larger than 1440 which is 48 weeks \* 5 days \* 6 hours/day, was 2.4% and 6.6% for Kinh and ethnic minorities, respectively.

Figure 8. The proportion of working children by ethnicity (%)



Source: estimation from VHLSSs 2004 and 2008

Table 19 examines the children labor using the 2007 BLS. The poor children are more likely to work than the non-poor children. There is a similar proportion of working children between girls and boys. Ethnic minorities such as Hmong, Hre, and E De have the proportion of the working children more than 40%.

In the 2007 BLS, most children worked for in the agricultural sector for their households. There were only around 1% of children working in the non-agricultural sectors, and around 1% of children worked for other households for wage.

Table 19. Percentage of working children

	Age 6-10	Age 11-15	Girls	Boys	Non-Poor	Poor	Total
Total	8.70	42.67	26.12	27.96	22.34	31.53	27.05
<i>Ethnic minorities</i>							
Kinh	1.03	18.57	9.47	11.48	8.07	16.53	10.48
Tay	11.44	50.82	32.47	35.13	35.32	32.59	33.89
Thai	6.47	40.87	24.88	28.74	26.76	26.68	26.72
Khmer	1.77	30.47	19.96	15.87	14.62	26.38	17.85
Muong	1.94	27.07	14.70	18.96	18.48	15.01	16.75
Nung	8.60	54.38	30.58	35.91	36.83	30.46	33.40
Hmong	20.45	70.47	43.37	45.61	41.41	45.43	44.61
Dao	10.21	59.21	39.78	35.91	35.97	39.48	37.85
Gia Rai	3.51	72.89	28.74	35.63	28.62	35.62	33.27
E De	10.58	72.59	55.87	32.41	30.86	56.56	46.73
Ba Na	0.00	46.84	21.28	21.02	33.13	16.18	21.14
Hre	23.32	84.88	54.29	61.76	68.74	54.39	57.81
Co Tu	0.63	37.32	20.31	19.06	14.61	21.82	19.70
Others in North	7.84	45.79	26.89	28.86	28.47	27.48	27.80
Other in Central	18.89	48.38	35.38	33.34	39.31	31.11	34.40
Others in South	0.75	40.24	18.50	15.90	19.40	16.61	17.42
<i>Regions</i>							
Red River Delta	0.00	19.05	21.70	5.72	8.73	23.44	13.59
North East	12.24	52.99	33.67	35.73	32.92	35.98	34.74
North West	18.93	57.79	39.80	40.32	34.16	44.28	40.07
North Central Coast	1.63	29.33	13.38	21.66	19.27	16.04	17.44
South Central Coast	6.62	48.09	31.73	28.07	27.05	31.75	29.97
Central Highlands	1.27	36.24	16.61	18.55	16.91	18.28	17.62
South East	0.29	24.55	11.07	13.86	9.86	17.36	12.46
Mekong River Delta	0.77	17.45	9.84	8.79	7.97	13.37	9.32

Source: estimation from BLS 2007

Table 20 estimates the percentage of children who have to work more than 1440 hours per year. These proportions were much lower than the proportion of children who had ever worked. Overall, the poor children in Northern Mountainous regions are those who have to work the most. Around 7% of poor children in Dao, Hmong, Gia Rai have to work fulltime.

Table 20. Percentage of children working fulltime (more than 1440 hours/year)

	Age 6-10	Age 11-15	Girls	Boys	Non-Poor	Poor	Total
Total	0.25	5.42	3.55	2.55	2.59	3.48	3.05
<i>Ethnic minorities</i>							
Kinh	0.00	1.85	1.56	0.44	1.35	0.13	1.00
Tay	0.00	2.66	2.02	1.08	1.21	1.80	1.52
Thai	0.00	2.33	1.63	1.08	1.87	0.89	1.37
Khmer	0.00	4.36	2.18	2.69	3.37	0.00	2.44
Muong	0.00	3.72	1.28	3.18	2.73	1.66	2.19
Nung	0.00	4.84	0.68	4.35	1.96	3.19	2.62
Hmong	1.11	12.67	8.41	5.30	4.79	7.18	6.69
Dao	0.19	13.20	9.02	6.03	7.33	7.70	7.53
Gia Rai	1.94	9.68	3.23	6.32	0.00	7.92	5.26
E De	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ba Na	0.00	7.52	4.23	2.73	4.49	2.94	3.39
Hre	0.00	1.25	0.00	1.49	0.00	0.92	0.70
Co Tu	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Others in North	1.05	4.13	4.58	0.47	0.00	3.98	2.67
Other in Central	0.00	8.34	5.68	2.99	4.43	4.36	4.39
Others in South	0.00	8.35	3.40	3.70	8.47	1.48	3.52
<i>Regions</i>							
Red River Delta	0.00	0.00	0.00	0.00	0.00	0.00	0.00
North East	0.57	8.70	5.76	4.41	3.64	6.02	5.06
North West	0.21	5.30	4.02	1.99	2.72	3.16	2.98
North Central Coast	0.00	1.88	1.04	1.11	1.63	0.64	1.07
South Central Coast	0.00	0.29	0.00	0.34	0.00	0.26	0.16
Central Highlands	0.25	6.13	2.90	3.09	2.33	3.62	3.00
South East	0.00	2.44	1.73	0.72	0.56	2.47	1.22
Mekong River Delta	0.00	3.94	2.68	1.35	2.69	0.00	2.02

Source: estimation from BLS 2007

The proportion of working children might be informative on the intension of works for children. Thus Table 21 presents the average working hours per day per working child. Children in Gia Rai and Khmer have the highest number of working hours per day. Although Hre children have a high working proportion, they work for a short time per day.



Table 21. Average working hours per day

	Age 6-10	Age 11-15	Girls	Boys	Non-Poor	Poor	Total
Total	1.86	2.91	3.00	2.54	2.69	2.81	2.76
<i>Ethnic minorities</i>							
Kinh	1.60	2.96	3.25	2.61	3.53	2.12	2.90
Tay	2.01	2.30	2.14	2.34	1.98	2.52	2.25
Thai	1.21	2.24	2.26	2.02	2.02	2.25	2.14
Khmer	1.50	3.71	4.04	3.12	4.59	2.20	3.62
Muong	0.89	2.39	2.13	2.47	2.16	2.51	2.32
Nung	1.60	2.36	1.89	2.55	1.98	2.56	2.27
Hmong	2.20	3.51	3.84	2.71	2.97	3.25	3.20
Dao	1.31	3.23	3.16	2.83	2.98	3.02	3.00
Gia Rai	7.45	4.39	4.03	4.81	3.06	5.20	4.58
E De	1.50	1.96	2.00	1.71	2.10	1.86	1.92
Ba Na	.	3.15	3.29	3.03	2.85	3.39	3.15
Hre	1.88	1.79	1.60	2.00	1.32	1.99	1.80
Co Tu	0.13	1.35	1.28	1.39	1.48	1.29	1.33
Others in North	1.67	2.49	3.14	1.58	1.76	2.70	2.38
Other in Central	1.65	2.99	2.99	2.25	2.37	2.88	2.64
Others in South	0.30	3.63	3.84	3.07	5.23	2.74	3.55
<i>Regions</i>							
Red River Delta		1.40	1.73	0.19	1.70	1.17	1.40
North East	2.16	3.14	3.18	2.82	2.52	3.28	2.99
North West	1.51	2.50	2.69	1.92	2.17	2.36	2.29
North Central Coast	2.10	2.46	2.47	2.43	2.29	2.59	2.44
South Central Coast	1.74	1.71	1.64	1.81	1.59	1.78	1.72
Central Highlands	4.52	3.47	3.25	3.74	3.14	3.84	3.51
South East	1.65	4.81	5.53	4.15	4.49	5.07	4.77
Mekong River Delta	1.50	4.05	4.63	3.18	5.26	1.61	3.95

*Note: Average working hours per day is equal to the total annual working hours divided by 240 days (48 weeks \* 5 days per week)*

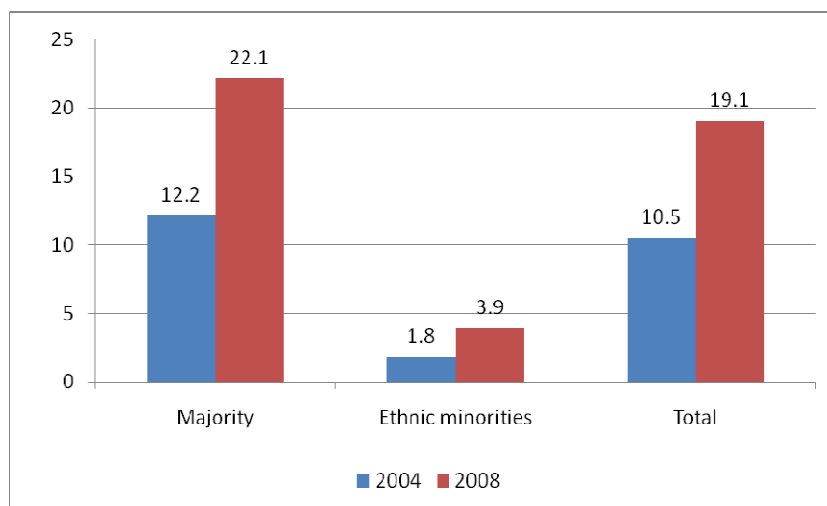
*Source: estimation from BLS 2007*

### 3.6. Leisure and nutrition

Other important domains of child poverty are leisure, social inclusion and protection, and nutrition. However, the 2007 BLS does not contain data on these issues. In VHLSSs, there are some data on household spending. Using these data, we can examine some indicators of

the access of children to these issues. Figure 9 shows households' spending on toys for children. The spending per children increased remarkably during 2004-2008 for both Kinh and ethnic minority children. However, there is a large gap in spending between Kinh and ethnic minorities. In 2008, the annual spending on toys per child below 16 years old in Kinh and ethnic minorities was 22.1 and 3.9 thousand VND, respectively. It is expected that ethnic minorities in Program 135-II communes have lower spending on toys than the overall ethnic minorities throughout the country.

Figure 9: Annual spending on toys per child below 16 years old  
(thousand VND in 2008 price)



Source: estimation from VHLSSs 2004 and 2008

Protein energy malnutrition in children remain a major challenge in Vietnam. In 2008, the percentage of child malnutrition of underweight was around 19.9% (Le and Le, 2011). Although the malnutrition percentage tends to decrease overtime, malnutrition is still in poor areas. Table 10 shows the percentage of anaemia (Hb <110g/L), vitamin A deficiency for children under 5 years old was very high in North West, where there are a large proportion of ethnic minority children. Similar findings are also found for other indicators of nutrition including underweight, stunting and wasting.

Table 1 Percentage of anaemia (Hb <110g/L), vitamin A deficiency in under 5

	% anaemia ( Hb<110g/L)	% vitamin A deficiency (retinol <0,7 µmol/L)
Red River Delta	23.5b	9.1a
North East	34.0b	13.0b
North West	43.0c	19.4b
North Central Coast	26.3b	16.4b
South Central Coast	33.1b	15.2b
Central Highlands	26.4b	20.9c
South East	22.8b	10.3b
Mekong River Delta	30.3b	17.0b

*Source: Le and Le (2011)*

Table 22: Percentage of underweight, stunting and wasting children under 5

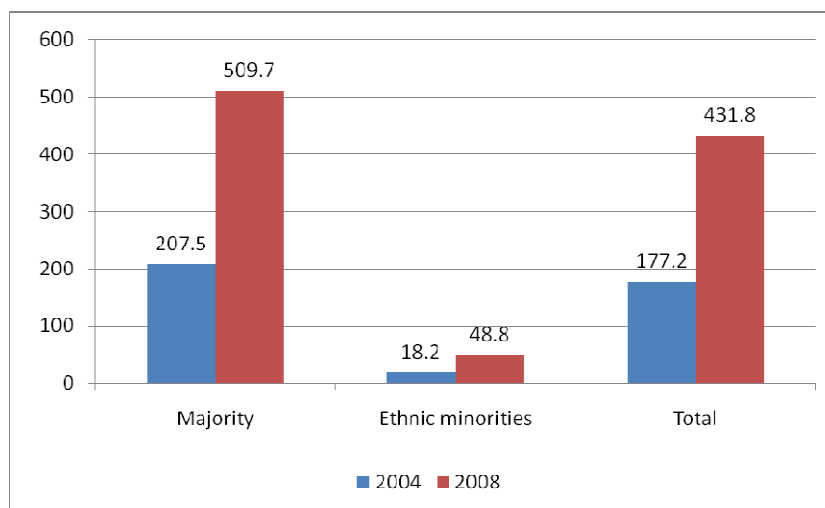
Regions	Underweight (W/A<-2SD)	Stunting (H/A<-2SD)	Wasting (W/H<-2SD)
Red River Delta	16.7	27.8	6.6
North East	22.3	34.8	7.0
North West	24.6	35.7	7.8
North Central Coast	22.9	34.3	6.9
South Central Coast	19.3	31.8	7.1
Central Highlands	28.5	39.2	7.3
South East	16.4	27.3	6.8
Mekong River Delta	18.7	29.1	6.7
All	18.9	31.9	6.9

Note: The percentage of under-5 children being underweight (weight/age z-score<-2SD), stunting (weight/age z-score<-2SD), wasting (weight/height z-score<-2SD), DSDD+TCTK 2009.

*Source: Le and Le (2011)*

VHLSS contains data on spending on items on milks and cookies which might be largely consumed by children. Table 10 shows that people tend to consume more milk products. Both ethnic minorities and Kinh experienced a high increase in milk consumption during 2004-2008. However, there is a large gap in milk consumption between Kinh and ethnic minorities. Kinh's consumption on milk is nearly 10 times as much as than ethnic minorities' consumption.

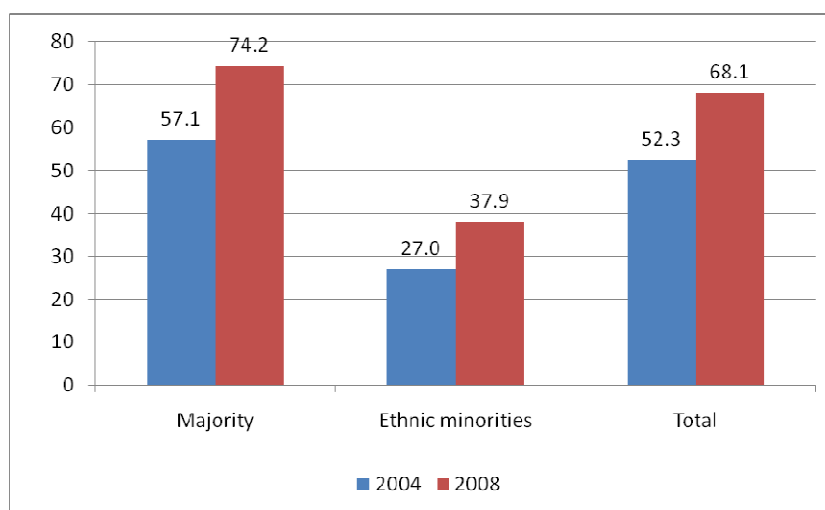
Figure 10: Annual spending on milk products per child below 16 years old  
(thousand VND in 2008 price)



Source: estimation from VHLSSs 2004 and 2008

Spending on cookies also increased during 2004-2008, albeit with a lower rate than milk. The gap in this consumption between Kinh and ethnic minorities is not large. In 2008, Kinh and ethnic minorities spent around 74 and 38 thousand VND per child below 16 on cookies.

Figure 11: Annual spending on milk products per child below 16 years old  
(thousand VND in 2008 price)



Source: estimation from VHLSSs 2004 and 2008

#### 4. CONCLUSIONS

Although Vietnam has achieved great success in poverty reduction, poverty remains very high in ethnic minorities. Sustainable reduction of chronic poverty requires a long-run poverty reduction programs. Thus provision of support programs for children is an important measure to reduce poverty of ethnic minorities. This study examines the current living standard and access of children to public services. Support programs are suggested to be provided for children who have limited access to public services.

The schooling rate of children aged 6 to 10 is very high for the whole country, at around 97% in 2008. However, children in poor communes covered by the Program 135-II have a lower schooling rate than overall ethnic minorities in the country. There were around 92% of children aged 6-10 attending school in 2007. Seriously, for some ethnic minorities such as Hmong and E De this proportion was around 80%. The main reasons for not school are 'not interested' (32.1%) and 'have to work' (27.5%). Distance to school is also a factor which can limit the education of children in remote and mountainous areas.

The proportion of children with health insurance increased significantly during 2000s. The ethnic minority children are more likely to have health insurance than Kinh. Around 90% of children in communes under program 135-II had health insurance in 2007 . For many ethnic minorities, the proportion of children with health insurance was very high, nearly 100%. The poor children are more likely to have health insurance than the non-poor children.

The access to health care services is reflected by health care visits. Child in poor regions and ethnic minority groups remain have lower utilization rates than other children. It might be because these people tend to stay in areas with low-quality health facilities, thus they are less likely to visit the health stations. Distance to health care centers, especially hospitals was very high in communes under the Program 135-II. About 42% of the health care contacts received fee reductions. The main reason for fee reduction is that children in poorest communes are allowed for fee reduction. In addition, a large proportion of children had health insurance. The poor children and children in poor ethnic minority groups are more likely to have fee reduction than the non-poor children and those in better-off ethnic minority groups.

Important welfare indicators are access to assets and housing conditions. Ethnic minorities are often mentioned as lack of assets. Among assets, access to clean water is one big

challenge for ethnic minorities. In 2008, the proportion of children who had access to clean water was 96% and 65% for the Kinh and ethnic minorities, respectively. Compared with overall ethnic minorities throughout the country, ethnic minority children in Program 135-II have much lower access to assets and housing condition. Television and telephone seems a luxury for poor children. 95% of children live in a house with electricity throughout the country. However, in these Program 135-II areas, only 77% and 53% of the non-poor and poor children live in a house with electricity. Especially for Hmong and Dao, this proportion for the poor children is less than 30%. By regions, North West is the poorest areas with limited assets.

The proportion of poor children living in a household with toilet or clean water is 39% and 33%, respectively. This proportion is very small compared with the non-poor children in the same areas as well as the national level. Several ethnic minorities such as Gia Rai, Ba Na, E De have a low access to clean water and they do not often boil water before drinking. As mentioned, this can cause health problems for children who are more vulnerable to health shocks than adults.

A factor which can reduce the schooling rate of children in poor areas is child labor. There was still a large proportion of children in ethnic minorities working. More specifically, around 6% of children aged 6 to 10 and 38% of children aged 11 to 15 had to work in 2004 and 2008, respectively. According to the 2008 VHLSS, the proportion of children, who have to work full time (defined as the number of total annual working hours is larger than 1440 which is 48 weeks \* 5 days \* 6 hours/day, was 2.4% and 6.6% for Kinh and ethnic minorities, respectively.

In communes under the Program 135-II, the poor children are more likely to work than the non-poor children. There is a similar proportion of working children between girls and boys. Ethnic minorities such as Hmong, Hre, and E De have the proportion of the working children more than 40%. Most children worked for in the agricultural sector for their households. There were only around 1% of children working in the non-agricultural sectors, and around 1% of children worked for other households for wage.

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## APPENDIX 1: TABLES

Table 23. Distance to school (km)

	Age 6-10	Age 11-15	Girls	Boys	Non-Poor	Poor	Total
Total	1.61	5.30	3.46	3.46	3.85	3.06	3.46
<i>Ethnic minorities</i>							
Kinh	1.92	4.61	3.22	3.36	3.35	3.13	3.29
Tay	1.65	6.45	5.06	3.61	5.34	3.24	4.28
Thai	1.43	5.78	3.94	3.81	4.82	2.96	3.87
Khmer	1.65	2.07	1.71	1.96	1.76	2.08	1.84
Muong	2.13	5.99	3.55	5.06	4.21	4.33	4.27
Nung	1.84	5.65	3.80	3.86	4.47	3.27	3.83
Hmong	1.50	5.24	2.40	3.55	3.32	3.04	3.10
Dao	1.57	6.72	5.21	3.17	4.87	3.54	4.15
Gia Rai	1.06	1.79	1.05	1.45	1.08	1.48	1.32
E De	0.72	5.69	2.41	2.93	3.58	1.71	2.62
Ba Na	0.97	3.50	0.86	2.65	2.84	1.53	1.90
Hre	1.04	2.15	1.23	2.08	1.93	1.51	1.61
Co Tu	0.66	8.11	4.11	4.72	5.53	3.93	4.40
Others in North	1.84	4.12	3.30	2.75	3.54	2.76	3.03
Other in Central	1.18	6.64	3.85	3.75	4.42	3.38	3.80
Others in South	1.19	4.88	1.92	3.45	5.05	1.50	2.58
<i>Regions</i>							
Red River Delta	2.06	2.37	2.62	1.97	2.55	1.69	2.28
North East	1.66	6.29	4.27	3.88	4.71	3.57	4.06
North West	1.50	5.32	3.00	3.83	3.73	3.23	3.45
North Central Coast	1.52	7.78	5.03	4.77	7.50	2.86	4.91
South Central Coast	0.82	5.27	3.22	3.10	3.70	2.83	3.16
Central Highlands	2.47	4.76	3.48	3.38	4.02	2.83	3.43
South East	1.17	3.90	2.41	2.39	2.70	1.66	2.40
Mekong River Delta	1.57	2.18	1.87	1.80	1.88	1.72	1.84

Source: estimation from BLS 2007



Table 24. Traveling time to school (minute)

	Age 6-10	Age 11-15	Girls	Boys	Non-Poor	Poor	Total
Total	20.49	28.53	24.31	24.18	23.60	24.89	24.24
<i>Ethnic minorities</i>							
Kinh	18.63	23.41	21.89	20.17	21.57	19.66	21.03
Tay	21.87	32.98	29.30	26.13	26.14	28.93	27.57
Thai	21.19	30.14	26.41	25.17	23.82	27.60	25.83
Khmer	22.21	19.05	18.27	23.01	21.82	17.79	20.76
Muong	20.68	25.06	22.62	23.41	24.34	21.44	22.99
Nung	28.36	38.53	33.02	33.60	31.87	34.53	33.32
Hmong	22.08	33.03	24.86	26.88	23.41	26.80	26.04
Dao	24.08	39.26	30.00	32.02	32.37	30.02	31.08
Gia Rai	11.49	21.00	15.83	14.30	9.69	18.44	14.84
E De	12.68	40.32	29.26	13.56	25.65	20.23	22.80
Ba Na	12.77	17.73	13.84	14.78	18.09	12.94	14.33
Hre	22.32	25.78	21.54	27.19	25.05	23.81	24.11
Co Tu	10.15	38.01	21.69	20.27	23.56	20.09	20.94
Others in North	21.43	27.86	25.97	22.90	23.60	24.85	24.45
Other in Central	18.41	34.27	24.92	24.39	24.87	24.49	24.64
Others in South	14.50	13.65	15.67	12.15	12.16	15.03	14.20
<i>Regions</i>							
Red River Delta	18.15	15.76	17.08	16.03	16.97	15.60	16.51
North East	23.56	33.73	29.03	27.97	28.23	28.64	28.46
North West	21.19	31.56	25.37	26.28	24.16	27.15	25.85
North Central Coast	17.85	23.25	21.55	19.51	19.74	21.19	20.58
South Central Coast	14.39	31.08	20.20	23.51	22.40	21.66	21.93
Central Highlands	17.29	28.38	21.92	21.56	20.36	23.10	21.73
South East	12.95	21.35	16.43	16.98	17.51	14.61	16.70
Mekong River Delta	22.08	21.96	22.35	21.71	23.61	17.05	22.03

Source: estimation from BLS 2007

Table 25. Tuition and contribution fees (thousand VND)

	Age 6-10	Age 11-15	Girls	Boys	Non-Poor	Poor	Total
Total	153.1	200.8	181.4	175.0	215.6	135.1	178.2
<i>Ethnic minorities</i>							
Kinh	228.3	270.1	250.3	249.8	273.3	197.6	250.1
Tay	157.4	181.7	180.8	162.6	205.5	136.8	170.9
Thai	118.7	126.6	125.7	120.5	115.6	129.0	123.4
Khmer	51.1	175.7	135.8	71.7	116.9	75.4	107.2
Muong	142.4	251.2	194.6	213.1	255.8	155.6	203.0
Nung	219.8	274.8	208.7	285.6	349.2	161.4	249.5
Hmong	34.0	72.1	47.4	52.9	112.0	36.0	51.1
Dao	104.5	138.1	130.6	116.6	135.8	110.6	123.0
Gia Rai	38.4	62.2	35.0	49.2	41.7	49.5	46.3
E De	4.9	44.8	33.2	7.5	41.4	16.7	24.5
Ba Na	56.3	72.5	67.0	63.1	40.0	67.8	64.5
Hre	31.8	99.4	31.2	92.6	180.3	41.2	77.7
Co Tu	28.3	95.2	120.2	48.6	50.8	91.5	75.4
Others in North	186.6	214.1	172.7	229.1	201.4	201.1	201.2
Other in Central	85.7	118.0	93.8	106.2	115.5	89.4	100.1
Others in South	65.4	108.1	79.0	88.6	79.4	84.8	83.2
<i>Regions</i>							
Red River Delta	307.0	302.8	308.8	299.5	330.3	248.7	304.2
North East	150.3	183.9	175.8	163.3	190.8	149.1	169.3
North West	119.9	167.2	151.8	139.1	191.7	115.0	144.9
North Central Coast	126.7	176.4	148.7	161.6	182.5	132.0	154.7
South Central Coast	31.1	88.2	79.4	69.5	83.6	64.6	74.6
Central Highlands	168.5	192.2	187.9	169.6	231.1	105.1	178.7
South East	510.2	708.7	651.6	547.9	627.9	478.5	602.1
Mekong River Delta	66.1	88.0	71.1	80.9	80.0	64.1	75.5

Source: estimation from BLS 2007

Table 26. Percentage of ethnic minority children without school and different assets

PROVINCES	Children 7-10 not attending school	Children 11-15 not attending school	Children in house without clean water	Children in house without toilet	Children in house solid roof	Children in house without electricity	Children in house without television
HA NOI	0.00	6.22	0.00	0.94	0.00	0.00	1.41
HA GIANG	14.17	33.24	91.43	44.67	21.85	29.85	57.80
CAO BANG	7.71	16.59	77.13	47.49	4.24	27.69	44.45
BAC KAN	3.47	15.58	71.65	24.79	7.03	10.82	25.48
TUYEN QUANG	2.61	19.39	50.40	11.48	48.38	7.05	20.50
LAO CAI	9.68	26.87	88.67	57.63	16.53	24.98	47.25
DIEN BIEN	15.52	30.35	91.38	57.58	25.43	42.86	56.33
LAI CHAU	16.67	34.10	94.78	85.20	11.84	36.22	56.34
SON LA	11.74	24.88	85.95	22.29	8.89	27.54	37.79
YEN BAI	8.82	25.67	71.93	32.78	42.05	9.58	34.47
HOA BINH	1.98	13.65	56.95	9.75	6.72	5.06	18.39
THAI NGUYEN	1.69	12.80	30.76	8.39	23.48	5.03	14.97
LANG SON	1.71	11.97	63.76	26.00	0.53	12.15	24.55
QUANG NINH	3.68	21.07	63.95	21.78	1.76	16.48	28.45
BAC GIANG	1.51	15.78	26.21	26.49	0.18	5.48	12.72
PHU THO	1.15	17.19	47.87	16.68	49.32	7.28	25.83
VINH PHUC	1.80	9.21	23.27	7.54	0.32	0.73	14.63
BAC NINH	0.00	19.56	5.48	0.00	0.00	0.00	9.91
HA TAY	1.04	8.90	30.61	9.22	0.09	0.42	9.11
HAI DUONG	2.08	7.26	9.85	0.80	0.00	0.00	7.45
HAI PHONG	0.00	7.87	9.70	0.00	0.00	0.00	0.67
HUNG YEN	0.00	12.38	23.12	0.00	0.00	0.00	6.11
THAI BINH	0.00	17.60	94.79	0.00	0.00	0.00	6.98
HA NAM	0.00	0.00	58.61	0.00	0.00	0.00	0.00
NAM DINH	0.00	4.87	49.16	1.13	3.32	0.00	9.44
NINH BINH	1.11	13.55	26.83	1.88	0.39	0.35	11.79
THANH HOA	3.85	19.48	55.08	8.35	26.59	11.18	27.00
NGHE AN	6.29	26.76	63.29	34.01	18.84	24.55	45.53
HA TINH	2.13	9.34	13.47	36.71	7.00	1.26	6.35
QUANG BINH	9.03	27.01	84.34	73.12	24.40	56.07	74.61
QUANG TRI	14.95	36.18	85.55	61.22	11.21	17.90	42.02
THUA THIEN HUE	5.83	27.89	64.69	19.25	2.88	14.30	29.71
DA NANG	0.00	0.00	0.00	0.30	0.00	0.00	2.04
QUANG NAM	3.75	20.75	92.09	44.20	5.57	32.08	58.04
QUANG NGAI	5.57	27.53	69.07	61.26	7.43	16.26	46.16
BINH DINH	3.90	27.52	60.85	38.36	6.11	11.46	37.71
PHU YEN	13.70	42.58	25.43	92.14	8.49	7.87	33.96
KHANH HOA	11.36	45.66	47.69	73.04	2.26	6.66	28.85
NINH THUAN	17.55	37.17	43.00	71.77	2.38	5.99	21.63

PROVINCES	Children 7-10 not attending school	Children 11-15 not attending school	Children in house without clean water	Children in house without toilet	Children in house solid roof	Children in house without electricity	Children in house without television
BINH THUAN	6.19	35.98	20.20	50.44	1.52	9.19	24.12
KON TUM	6.58	26.93	67.26	27.26	3.79	7.32	28.76
GIA LAI	17.65	41.77	47.89	65.00	1.96	11.92	27.58
DAK LAK	8.45	26.14	31.14	27.71	2.97	16.55	24.50
DA NANG	10.22	24.55	33.14	25.81	6.75	18.86	28.17
LAM DONG	5.17	25.63	44.32	32.14	1.72	9.60	19.38
BINH PHUOC	11.85	33.04	44.75	29.44	4.25	23.42	27.86
TAY NINH	9.55	43.63	2.31	18.00	4.52	3.28	27.23
BINH DUONG	10.51	42.47	0.50	0.65	0.85	1.61	13.93
DONG NAI	2.65	17.11	10.63	10.12	1.55	16.17	18.07
VUNG TAU	2.68	21.92	6.77	7.12	0.82	4.19	15.87
HO CHI MINH	2.98	14.73	0.03	0.15	0.12	0.05	2.69
LONG AN	6.03	31.14	17.53	4.24	5.04	3.56	13.10
TIEN GIANG	0.00	21.41	23.20	3.13	3.59	0.00	6.01
BEN TRE	0.00	6.88	15.88	0.00	10.71	1.93	11.09
TRA VINH	7.83	40.84	5.34	22.00	34.09	13.87	27.89
VINH LONG	6.41	23.71	4.20	2.38	12.65	12.11	25.07
DONG THAP	0.00	11.84	0.00	2.06	2.49	0.00	4.72
AN GIANG	11.37	39.02	12.09	43.73	5.41	24.59	47.59
KIEN GIANG	8.90	34.17	29.70	14.53	33.74	14.54	30.19
CAN THO	7.03	24.28	7.81	0.54	2.64	3.63	11.03
HAU GIANG	7.45	32.82	4.74	0.00	18.08	7.75	22.20
SOC TRANG	12.42	42.01	6.63	19.90	9.68	13.79	32.43
BAC LIEU	11.13	42.19	4.49	10.57	11.05	7.71	22.22
CA MAU	14.56	33.69	15.34	4.84	9.07	10.69	25.60

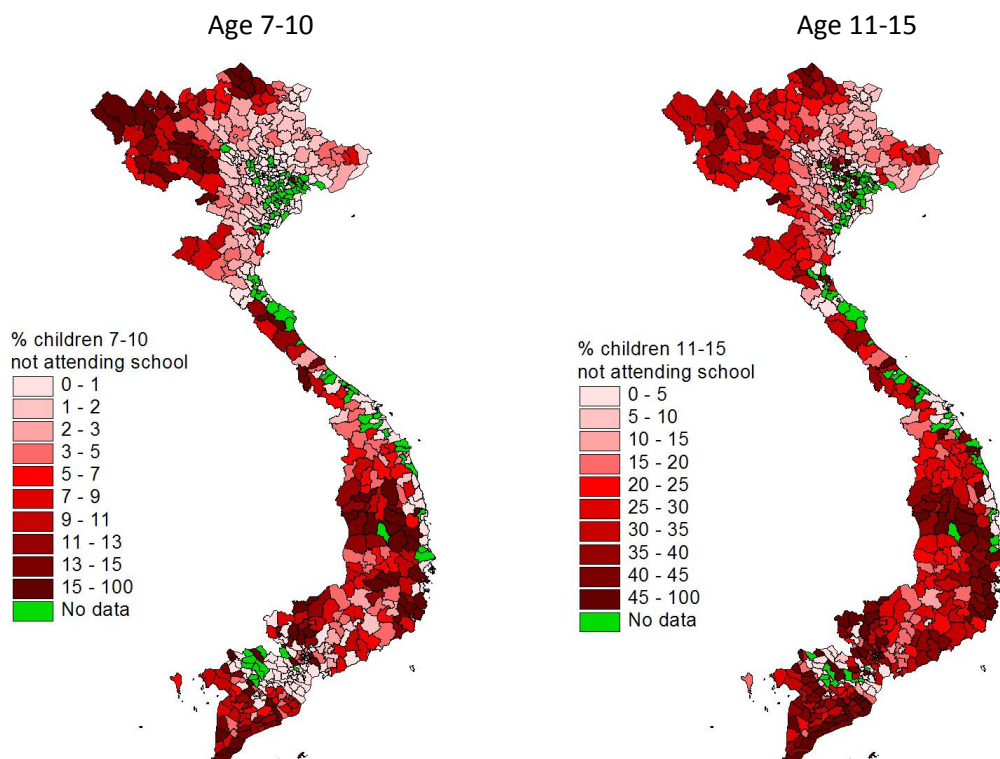
Table 27. Percentage of children reporting 'sickness' during the past 12 months

	Age 0-5	Age 6-10	Age 11-15	Girls	Boys	Non- Poor	Poor	Total
Total	28.80	32.30	28.38	29.21	30.22	33.37	26.50	29.72
<i>Ethnic minorities</i>								
Kinh	29.35	42.80	40.83	35.55	39.61	38.87	34.34	37.59
Tay	27.62	31.95	26.66	27.68	29.42	37.54	21.13	28.58
Thai	31.99	33.00	27.59	27.78	33.24	33.09	28.22	30.48
Khmer	17.90	25.13	13.62	18.90	18.04	19.17	16.78	18.46
Muong	32.13	36.03	24.64	34.10	25.95	31.31	29.21	30.28
Nung	31.72	38.89	26.98	33.62	30.84	36.94	28.92	32.23
Hmong	28.63	24.78	18.12	24.56	24.07	28.71	23.25	24.29
Dao	30.51	23.60	23.23	21.95	29.40	25.72	25.50	25.60
Gia Rai	18.31	3.76	4.07	7.65	11.46	9.62	9.73	9.69
E De	41.43	78.84	69.52	71.53	55.10	77.19	55.68	64.80
Ba Na	18.73	8.11	9.69	11.15	14.06	12.98	12.77	12.83
Hre	47.67	83.52	82.75	69.06	69.88	75.03	67.20	69.46
Co Tu	26.78	27.69	20.11	28.99	20.92	30.26	22.05	24.73
Others in North	18.99	17.66	17.78	21.73	14.42	17.15	18.56	18.15
Other in Central	33.14	34.21	38.66	35.61	35.23	38.72	33.41	35.42
Others in South	26.84	30.97	26.90	26.66	29.86	40.07	23.02	28.15
<i>Regions</i>								
Red River Delta	14.32	34.20	40.21	33.62	27.32	39.79	16.30	30.71
North East	28.09	28.26	23.26	25.39	27.20	32.49	22.75	26.33
North West	30.89	25.96	23.45	25.06	28.34	30.23	24.35	26.72
North Central Coast	39.31	49.39	37.43	41.63	41.32	45.32	38.70	41.48
South Central Coast	50.36	46.10	54.69	53.72	47.88	53.75	48.71	50.74
Central Highlands	26.95	28.01	34.42	28.78	30.12	34.92	24.99	29.50
South East	25.66	52.33	53.82	40.88	47.15	51.49	26.66	43.72
Mekong River Delta	17.50	30.11	19.62	21.99	22.74	23.42	19.41	22.37

Source: estimation from BLS 2007

## APPENDIX 2: FIGURES

Figure 12. The percentage of children aged 7-10 and 11-15 not attending school in 2009



Source: estimation from PHC 2009

Figure 13. Percentage of children living in a house without solid roof

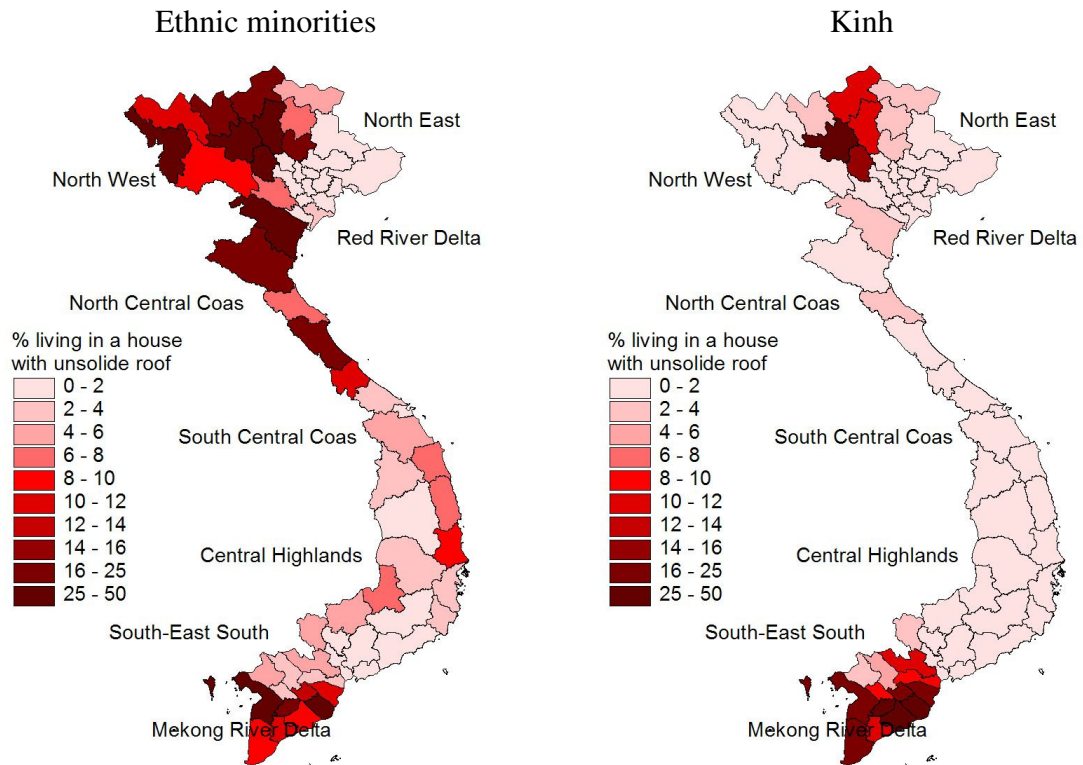
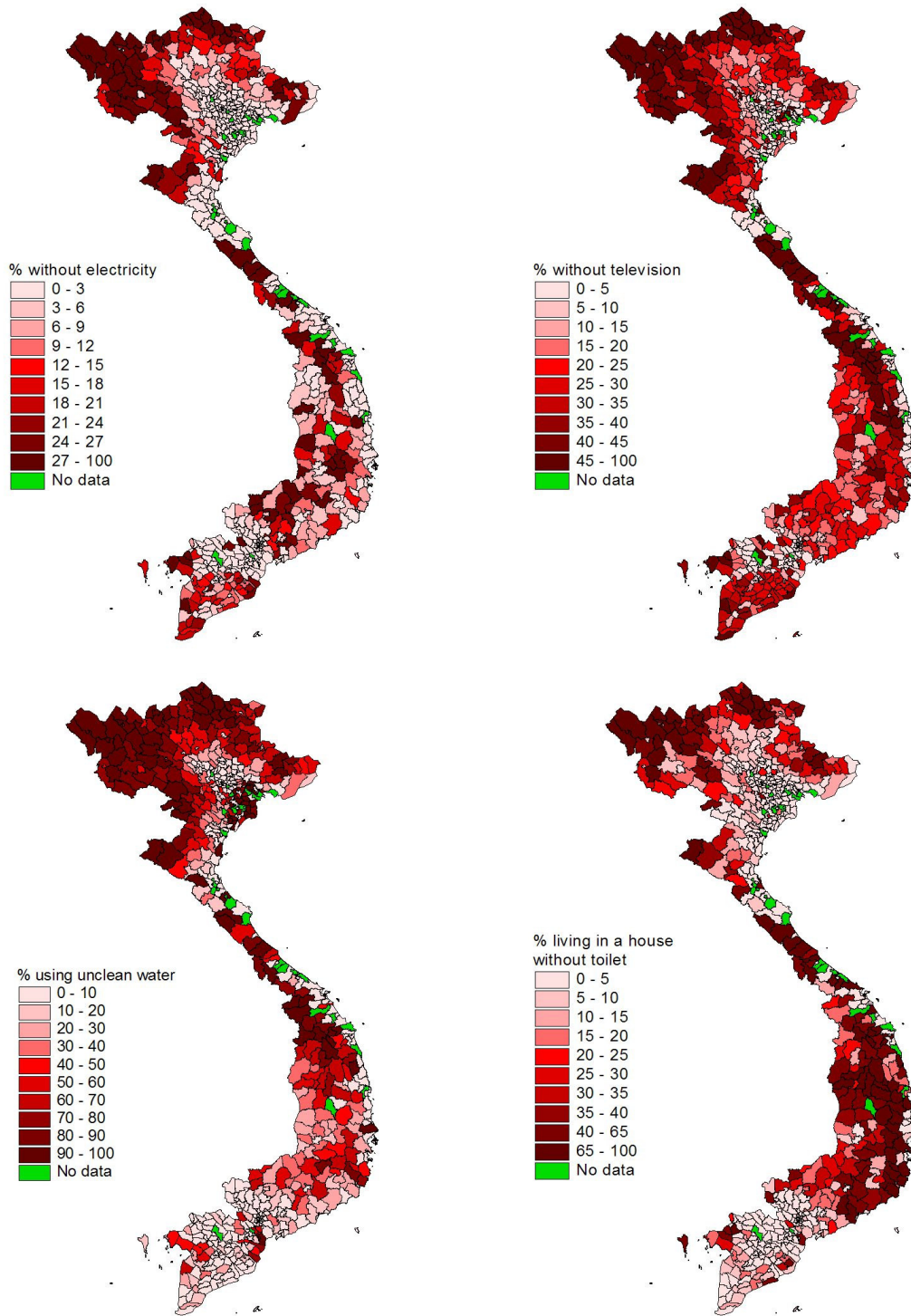


Figure 14. Percentage of ethnic minority children living in a house without assest (district level)





### APPENDIX 3: ECONOMETRICS ANALYSIS

Table 28 investigates correlation between individual and household characteristics with health care utilization and out-of-pocket spending. We use Poisson regression for the dependent variable which is the number of health care contacts, while Tobit regression is applied for the dependent of out-of-pocket spending.

Individual characteristics including age, gender and ethnicity have expected sizes. Children below 6 years old are more likely visit health care satiations than older children. Ethnic minorities are less likely to have health care contacts than Kinh. This might be because the access to health care services, especially high quality services in hospitals are quite limited for ethnic minorities. Education of household heads is positively correlated with health care contacts of children.

Table 28. Regression of health care contact and spending

Explanatory variables	Poisson regression of health care contacts		Tobit regression of health care spending	
	Coefficient	Marginal effect	Coefficient	Marginal effect
Age	-0.0652*** (0.0094)	-0.0752*** (0.0100)	-11.70*** (3.08)	-2.52*** (0.66)
Sex (male=1; female=0)	0.0409 (0.0748)	0.0472 (0.0861)	26.97 (26.51)	5.80 (5.69)
Kinh	Base - omitted			
Tay	-0.0027 (0.1017)	-0.0031 (0.1171)	-128.87*** (48.47)	-26.35*** (9.44)
Thai	-0.1598 (0.1070)	-0.1738 (0.1097)	-147.40*** (47.24)	-30.04*** (9.15)
Khmer	0.3468** (0.1751)	0.4661* (0.2717)	-146.93 (93.16)	-29.75* (17.77)
Muong	-0.0526 (0.1066)	-0.0593 (0.1173)	-60.89 (47.17)	-12.74 (9.62)
Nung	0.1968 (0.1202)	0.2497 (0.1665)	-36.88 (58.00)	-7.80 (12.06)
Hmong	-0.3224** (0.1293)	-0.3358*** (0.1219)	-272.42*** (54.96)	-53.83*** (10.01)
Dao	0.0039 (0.1185)	0.0045 (0.1371)	-63.79 (65.07)	-13.35 (13.27)
Gia Rai	-0.9620*** (0.2324)	-0.7200*** (0.1074)	-472.54*** (107.88)	-82.11*** (15.50)
E De	0.1969	0.2509	-166.85	-33.13

Explanatory variables	Poisson regression of health care contacts		Tobit regression of health care spending	
	Coefficient	Marginal effect	Coefficient	Marginal effect
	(0.2598)	(0.3636)	(151.01)	(27.68)
Ba Na	-1.1797***	-0.8161***	-717.91***	-113.45***
	(0.2196)	(0.0856)	(111.52)	(14.30)
Hre	-0.1916	-0.2017	101.56	22.93
	(0.2398)	(0.2305)	(126.83)	(29.99)
Co Tu	-1.2359***	-0.8296***	-494.85***	-85.21***
	(0.2562)	(0.0945)	(160.21)	(22.30)
Others in North	-0.4028***	-0.3864***	-221.37***	-43.06***
	(0.1529)	(0.1217)	(76.11)	(13.42)
Other in Central	-0.2907**	-0.2972**	-134.01**	-27.27**
	(0.1275)	(0.1162)	(55.42)	(10.69)
Others in South	-1.2263***	-0.8383***	-402.19***	-72.36***
	(0.1829)	(0.0698)	(79.86)	(12.26)
Red River Delta	Base - omitted			
North East	-0.7653***	-0.7862***	-222.01***	-45.97***
	(0.1851)	(0.1731)	(76.34)	(15.23)
North West	-0.6830***	-0.6630***	-116.24	-24.22*
	(0.1846)	(0.1522)	(72.68)	(14.67)
North Central Coast	-0.4281**	-0.4206***	25.20	5.47
	(0.1843)	(0.1538)	(71.72)	(15.72)
South Central Coast	0.1054	0.1276	-191.97	-38.03*
	(0.2659)	(0.3375)	(117.36)	(21.39)
Central Highlands	-0.0888	-0.0988	180.43**	41.86**
	(0.1957)	(0.2096)	(80.38)	(19.95)
South East	-0.2816	-0.2870	-266.27***	-51.09***
	(0.2235)	(0.1997)	(90.10)	(15.41)
Mekong River Delta	0.2986	0.3824	145.68	32.90
	(0.2067)	(0.2949)	(108.85)	(25.72)
Age of head	0.0004	0.0005	-4.42	-0.95
	(0.0058)	(0.0067)	(2.71)	(0.58)
Sex of head (male=1; female=0)	0.2127	0.2254	-26.75	-5.81
	(0.1615)	(0.1569)	(145.13)	(31.87)
Years of head's education	0.0228*	0.0264*	6.81	1.46
	(0.0131)	(0.0151)	(4.19)	(0.90)
Head working on nonfarm activities	-0.1972**	-0.2121**	64.11	14.11
	(0.1003)	(0.1000)	(53.98)	(12.11)
Head living with spouse (yea=1)	-0.3092	-0.3151	48.33	10.60
	(0.3808)	(0.3426)	(144.19)	(32.25)
Age of spouse	-0.0109	-0.0126	-1.87	-0.40
	(0.0070)	(0.0081)	(2.51)	(0.54)
Years of spouse's education	0.0129	0.0149	14.34*	3.08*
	(0.0154)	(0.0177)	(7.51)	(1.61)
Spouse working on nonfarm activities	-0.2693*	-0.2772*	-66.49	-13.90

Explanatory variables	Poisson regression of health care contacts		Tobit regression of health care spending	
	Coefficient	Marginal effect	Coefficient	Marginal effect
	(0.1591)	(0.1450)	(75.32)	(15.30)
Household size	-0.0894***	-0.1032***	-28.95***	-6.23***
	(0.0197)	(0.0226)	(10.69)	(2.30)
Proportion of children in household	-0.2592	-0.2990	-222.83	-47.91
	(0.2875)	(0.3328)	(162.56)	(34.86)
Proportion of elderly in household	0.0548	0.0632	-4.26	-0.91
	(0.3895)	(0.4495)	(164.46)	(35.36)
Constant	1.9260***		228.06	
	(0.3666)		(213.33)	
Observations	10,661	10,661	10,661	10,661

Robust standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Source: estimation from BLS 2007

Table 29 presents the marginal effect in multinomial logit of school and labor of children. Older children are more likely to work and drop out from school. Once controlled by other observed variables, boys are less likely to quit school for working than girls, though they are more likely to both work and study. Variables of regions and ethnic minorities have expected sign. Education and non-farm employment of head is positively correlated with child education.

Table 29. Multinomial logit of school and labor of children

Explanatory variables	Schooling, not working	Both schooling and working	Not schooling, but working	Neither schooling nor working
Age	-0.0513***	0.0305***	0.0220***	-0.0012
	(0.0039)	(0.0033)	(0.0019)	(0.0023)
Sex (male=1; female=0)	-0.0079	0.0242***	-0.0083**	-0.0080
	(0.0127)	(0.0067)	(0.0038)	(0.0098)
Kinh	Omitted			
Tay	-0.0752**	0.0888***	0.0002	-0.0137
	(0.0339)	(0.0292)	(0.0086)	(0.0172)
Thai	0.0089	0.0104	-0.0145**	-0.0049
	(0.0275)	(0.0191)	(0.0057)	(0.0198)
Khmer	-0.5356***	0.5345**	0.0137	-0.0126
	(0.1807)	(0.2191)	(0.0275)	(0.0281)
Muong	0.0177	-0.0497***	-0.0182***	0.0502
	(0.0392)	(0.0106)	(0.0051)	(0.0400)

Explanatory variables	Schooling, not working	Both schooling and working	Not schooling, but working	Neither schooling nor working
Nung	-0.0839* (0.0460)	0.1427*** (0.0445)	-0.0121 (0.0081)	-0.0466*** (0.0077)
Hmong	-0.2254*** (0.0471)	0.1184*** (0.0354)	0.0303** (0.0151)	0.0767* (0.0405)
Dao	-0.0650* (0.0358)	0.0575** (0.0279)	0.0243 (0.0149)	-0.0167 (0.0172)
Gia Rai	-0.6101*** (0.0920)	0.5251*** (0.1512)	0.0802 (0.0836)	0.0048 (0.0513)
E De	-0.5891*** (0.1057)	0.1214 (0.1238)	0.4216*** (0.1559)	0.0461 (0.0919)
Ba Na	-0.2522** (0.1030)	0.1959* (0.1050)	0.0494 (0.0420)	0.0069 (0.0409)
Hre	-0.6572*** (0.0904)	0.6327*** (0.1272)	0.0556 (0.0522)	-0.0311 (0.0230)
Co Tu	-0.3004** (0.1262)	0.1914 (0.1238)	-0.0167** (0.0082)	0.1256 (0.1130)
Others in North	-0.0825 (0.0509)	0.0384 (0.0316)	-0.0102 (0.0078)	0.0543 (0.0431)
Other in Central	-0.2770*** (0.0717)	0.2620*** (0.0744)	0.0098 (0.0146)	0.0052 (0.0257)
Others in South	-0.0225 (0.0518)	0.0091 (0.0358)	-0.0115 (0.0081)	0.0249 (0.0384)
Red River Delta	Omitted			
North East	-0.1279 (0.0889)	0.1109 (0.0762)	-0.0045 (0.0189)	0.0215 (0.0610)
North West	-0.2225* (0.1173)	0.2242* (0.1188)	-0.0018 (0.0190)	0.0001 (0.0523)
North Central Coast	-0.1274 (0.1052)	0.0625 (0.0795)	0.0084 (0.0254)	0.0565 (0.0931)
South Central Coast	0.0585 (0.0648)	-0.0058 (0.0576)	-0.0220*** (0.0082)	-0.0306 (0.0303)
Central Highlands	0.0661 (0.0583)	-0.0418 (0.0307)	-0.0189* (0.0112)	-0.0054 (0.0508)
South East	-0.0606 (0.1721)	-0.0912*** (0.0098)	-0.0066 (0.0197)	0.1584 (0.1755)
Mekong River Delta	0.0075 (0.1372)	-0.1182*** (0.0193)	-0.0236** (0.0114)	0.1343 (0.1387)
Age of head	0.0014 (0.0012)	-0.0008 (0.0007)	-0.0006 (0.0004)	-0.0000 (0.0008)
Sex of head (male=1; female=0)	0.0044 (0.0468)	-0.0120 (0.0457)	-0.0018 (0.0111)	0.0094 (0.0234)
Years of head's education	0.0077***	-0.0001	-0.0044***	-0.0032

Explanatory variables	Schooling, not working	Both schooling and working	Not schooling, but working	Neither schooling nor working
	(0.0025)	(0.0012)	(0.0009)	(0.0021)
Head working on nonfarm activities	0.0637***	-0.0373***	0.0023	-0.0287**
	(0.0173)	(0.0099)	(0.0071)	(0.0130)
Head living with spouse (yea=1)	-0.1068	-0.0110	0.0527	0.0650
	(0.0962)	(0.0507)	(0.0476)	(0.0830)
Age of spouse	-0.0024*	0.0006	0.0009*	0.0009
	(0.0013)	(0.0008)	(0.0005)	(0.0008)
Years of spouse's education	-0.0000	0.0028*	-0.0025**	-0.0002
	(0.0030)	(0.0015)	(0.0010)	(0.0026)
Spouse working on nonfarm activities	0.0342	-0.0378**	0.0184	-0.0148
	(0.0338)	(0.0164)	(0.0159)	(0.0260)
Household size	0.0013	-0.0019	0.0000	0.0006
	(0.0033)	(0.0019)	(0.0009)	(0.0023)
Proportion of children in household	-0.1275**	0.0695**	0.0409***	0.0171
	(0.0522)	(0.0278)	(0.0139)	(0.0408)
Proportion of elderly in household	0.1162	0.0188	-0.0451*	-0.0900
	(0.0822)	(0.0360)	(0.0255)	(0.0674)

Observations 10,661

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Source: estimation from BLS 2007