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Parents' inter-ethnic marriage and children's education and disability: Evidence from Vietnam

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Abstract

This paper examines whether interethnic marriage of parents is associated with educational performance of children in Vietnam using data from the 2009 Population and Housing Census. It finds that interethnic marriage of parents is associated with educational attainment of children in Vietnam. Children with parents from different ethnic groups tend to have better education and lower disability incidence than children with parents from one ethnic minority group.

JEL classification: I1; I2; J12.

Keywords: Health, education, disability, children, interethnic marriage

1. Introduction

Interethnic marriages have become popular in many countries, especially the countries of immigrants. The influence of marriage patterns on the human capital of children is illustrated by two main mechanisms. The first mechanism is through the parents' technology of children raising for producing the human capital of children. This may have a positive or negative impact on their children outcomes. Stevens and Swicegood (1985) found that the children, whose parents are the second-generation immigrants with a native born, are more likely to have English as a first language and even only language when compared to children with two foreign-born parents. Children with a native-born parent could have positive outcomes for academic outcomes such as English proficiency (e.g., Glick and White, 2003; Bleakley and Chin, 2008), and children with two foreign-born parents are more likely to be bilingual (Portes and Rumbaut, 2001).

Another mechanism is related to the ethnic connections of parents outside of the household. Theoretically, the socioeconomic outcomes of children are significantly affected by their parents' connection to their ethnic communities. For example, marriages between immigrants are more likely to have ethnic connections than marriages between immigrants and natives. It is explained by that immigrants may have more information related to the best schools and educational measures for their children to get job opportunities if they involved in their ethnic communities. In addition, if immigrants participate in an ethnic network with natives, they may get spillover effects from natives (Furtado, 2009).

Empirical evidence shows that interethnic marriages are affected by the ethnic composition of the local population (Harris and Ono, 2005). On the other hand, interethnic marriages focus on couples with higher education (Pullum, Peri and Bratter, 1998). Interethnic marriages are also considered a sign of the reduction of social distance (Alba and Nee, 1997; Suro, 1999; Fu, 2001; Bevelander and Veenman, 2006). Recent studies focuses on the relationship between interethnic marriages and the development of human capital, typically the studies of Kantarevic (2004) and Meng and Gregory (2001).

However, the studies of the influence of interethnic marriages on the human capital of children have not received much attention. Some empirical research papers published focus

on the US (e.g. Furtado, 2005) and some other developed countries such as Netherlands (e.g. Van Ours and Veenman, 2008), while there is little evidence of developing countries. Empirical evidence about the impact of interethnic marriages on the educational achievement of children is still unclear although positive effects were detected in most of the empirical literature. Most of the empirical evidence found that interethnic marriage has a positive influence on the educational achievement of children, such as Chiswick and DebBurman (2004), Ramakrishnan (2004), Van Ours and Veenman (2008). Nevertheless, some studies such as Furtado (2005) found a negative impact. Furtado (2005) found that having a US-born mother even has a negative effect on the educational attainment of children. Children with a foreign-born father and a US-born mother have a higher high-school dropout rate than children from a foreign-born mother and a US-born father or two foreign-born parents.

In the studies that analysis the impacts of interethnic marriages on the educational attainment of children, Chiswick and DebBurman (2004) and Ramakrishnan (2004) provided the evidence that children from couples with one US-born parent attain more years of education than children from couples with two foreign-born parents. To dig deep the impact of gender of parents on child educational attainment, Chiswick and DebBurman (2004) found that having a US-born father (+0.19 years) is more important than having a US-born mother (+0.13 years), but according to Ramakrishnan (2004) having a US-born mother (+0.26 years) is more important than having a US-born father (+0.14 years).

Van Ours and Veenman (2010) found that Moluccan father and a native mother have a positive effect on the educational attainment of children from these marriages. Children from marriages with native mothers have a higher educational attainment than children from ethnic homogeneous Moluccan couples or couples with a native father. These results were explained by the intergenerational effects through two channels. The first channel is in the Moluccan culture mothers play a dominant role in child raising, and then mothers in Moluccan families have a large influence on the educational attainment of their children. The second one is Moluccan mothers, who are the first or second generation, have less advantage than Dutch mothers in such families due to Dutch mothers have greater the

knowledge of and experience with the Dutch educational system and also they may have better language skills.

Vietnam has 54 identified ethnic groups. The Viet (Kinh) people account for 86% of the country's population. Therefore, interethnic marriage problem is quite popular in Vietnam. The study will focus on assessing the impact of interethnic marriage parents on the educational achievement of children. Its influence on the disability of children is concentrated study. The research results will contribute more to document empirical research and partly fill this research gap in Vietnam.

Currently, the problem of poverty in Vietnam is the main problem of ethnic minorities. The proportion of ethnic minorities in the total population of poor increased from about 50% in the early 2000s to over 90% in 2010 (VHLSS, 1993-2012). The rate of poor people got high since the economic crisis in 2008 over the world. The programs and projects of poverty reduction may not be enough to help ethnic minorities overcome poverty sustainably. So what tools help ethnic minority people get out of poverty sustainably? The answer may be the education. Education is key for ethnic minority people overcome poverty sustainably.

According to Irreland (2006), education is central to development. It is the basic tool of economic and social to help people get out of poverty, improve their awareness about health, create sustainable livelihoods, and has full conditions to join in their community (Irreland, 2006). Therefore, education is considered as the foundation of sustainable growth (e.g., Tormey, 2007), that contributes to the improvement of democracy and reduction of poverty (e.g., Ribich, 1967; Tilak 2002; Clive Harber 2010).

In Vietnam, the education of ethnic minorities is lower than that of Kinh people. Questions are posed that what ways can help to improve the education of ethnic minorities? Interethnic marriages, especially between ethnic minorities and Kinh people could be an effective solution for this problem. Some experimental studies have shown that interethnic marriage has a positive influence on the educational achievement of children (e.g., Chiswick and DebBurman, 2004; Ramakrishnan, 2004; Van Ours and Veenman, 2008). The understanding of the impact of parents' marriage and children's achievement allows the

policy makers to design appropriate policies to promote ethnic minorities' educational achievement, and ultimately to contribute to development.

Our study will focus on the impact of interethnic marriage parents on education and disability of children. By using the 2009 Vietnam Housing and Population Census data and focusing on children between 7 and 22 years of age, this study presents the results of an empirical analysis of the effects of interethnic marriages between Kinh people and other ethnic people on the educational attainment of children. This paper is structured into six sections. The second introduces data used in this study. The third section presents a descriptive analysis of interethnic marriage and children's outcomes in Vietnam. The fourth and fifth sections present the estimation method and empirical results, respectively. Finally, the sixth section concludes.

2. Data source

The study relies on data from the 2009 Population and Housing Census of the Socialist Republic of Vietnam. This Census is the fourth population census and the third housing census implemented in Vietnam and the sample size rises to 15% of the population to allow estimates to be made at the district level. The country was divided into 172,000 enumeration areas. Each enumeration can be hamlets, blocks, villages or other small units with an average size of about 100 households. The sample of this data is self-weighted and clustered at the district level.

The first question of the research refers the relationship between asked children and the household head, so we use the database of the 2009 Census instead of other updated surveys such as Viet Nam Household Living Standards Survey 2010 (VHLSS 2010). VHLSS 2010 uses a general word "children" while the Census 2009 sets the term "biological children", which is a key clue to identify targets of this study.

In our research, the control group is biological children or children from interethnic families. This group is compared with the "treated" groups including children from non-interethnic families.

The 2009 Population and Housing Census was implemented on 1st April 2009. This is the fourth population census and the third housing census implemented in Vietnam since its

reunification in 1975. The purpose of the Census is to collect basic data on population and housing for the entire territory of the Socialist Republic of Vietnam, to serve national development planning. Data from the 15% Census sample survey were processed immediately after the data collection was completed and were disseminated on 31 December 2009.

In this study, we define children as individuals aged from 7 to 22 years old and parents as individuals aged not under 15 years old. By limiting this form and cleaning the data, the final total sample we collected includes 3,079,222 observations. In particular, the study sample included 1,650,288 male and 1,428,934 female. The influence of parents on children decreases with the age of children. Therefore, we divide the original general sample into two subsamples, a subsample not higher than 14 years old and over 14 years old samples. Subsample 1 includes 1,606,599 children aged from 7 to 14. Primary sample 2 includes 1,472,623 adolescents aged from 15 to 22. These samples are used for statistical analysis and estimation experimental models from (1) to (4).

3. Descriptive analysis Interethnic marriages in Vietnam

The situation of interethnic marriages in Vietnam is presented in Table 1. Statistical results show that although Vietnam has 54 ethnic groups but the percentage of interethnic marriages is still small. The proportion of the same Kinh marriages is approximately 98.1%. It means that 98.1% of Kinh women marry Kinh men. The proportion of the same Hoa marriages is around 68.9%. Foreigners living in Vietnam tend to marry other ethnic groups with the ratio accounts for 81.5%.

Most couples tend to marry to the one with same ethnic. Mông people tend to marry the same ethnic most, with approximately 99.3% of women marry to Mông men. In 54 ethnic groups, only 6 groups have the ratio of the same ethnic marriages below 50 % include Rơ Măm, Pu Kéo, Cơ Lao, Ô Đu, Ngái, and foreigners. The Ngái has the lowest rate of the same ethnic marriages in comparison with the national average, with only 5.4% of Ngái women marry Ngái men. This rate is 93.3% for the Thái people, 85.6% for Mường, 84.1% Khmer and 78.3% ethnic Khmer for Nùng.

Table 1: The status of interethnic marriages in Vietnam in 2009

		Father ethnicity						
		Kinh	Tày	Thái	Mường	Khmer	Hoa	Nùng
Mother ethnicity	Kinh	98.1	0.5	0.1	0.3	0.2	0.3	0.2
	Tày	10.3	78.8	0.2	0.4	0.0	0.4	7.9
	Thái	3.0	0.3	93.2	2.3	0.0	0.0	0.0
	Mường	10.1	0.7	3.0	85.6	0.0	0.0	0.1
	Khmer	14.9	0.0	0.0	0.0	84.1	0.8	0.0
	Hoa	25.1	2.2	0.2	0.1	1.3	68.9	0.9
	Nùng	7.0	12.9	0.1	0.1	0.0	0.4	78.3

Source: Computed by the author from The 2009 Housing and Population Census.

Except Ngái, Rơ Măm and foreigners, the proportion of marriages between ethnic minority women and Kinh men is below 50%. The rate of marriages between Ngái women and Kinh men is high, up to 59.5%. This figure is 46.4% for Chứt women, 25.1% for Chơ Rơ women, 21.5% for Sán diu women, 25.1% for Hoa women and 74% foreigners. It is interesting that only Rơ Măm women only marry Kinh or Rơ Măm men.

Despite there is a variety of ethnic groups in Vietnam, the rate of different ethnic marriage in Vietnam is quite low. This may be due to the geographical distance that makes ethnic minority people difficult finding a partner to get marriage. Most ethnic minority people in Vietnam live in the remote areas and northern mountains. Meanwhile, the Kinh group mainly concentrated in the plains and big cities.

In recent years, the rate of interethnic marriages increases significantly. The development of infrastructure, communications and transport can be major contributing factors to this increase. In fact, minority people get more benefits from an infrastructure improvement. They can easily move between areas to find work and dating.

They also have more opportunities to go out of their homeland as migrants leading to the increase of the number of interethnic marriages. The development of transport system helps people in ethnic minority groups easily to move from a place to a different place. This figure thus is expected to continue increasing in the foreseeable future.

In terms of policies, the government encourages the migratory movements between regions in order to improve the quality of local human resources, promote growth through

population policy and immigration. For example, construction of a new economic zone is a policy of the Government of Vietnam to redistribute labor and residents in the country by moving large amounts people from the plains and cities to midland, mountainous, border and island. This policy was implemented in northern Vietnam since 1961 and nationwide since reunification. Therefore, people in ethnic minority groups have opportunities to meet people in other ethnic groups, particularly Kinh group. This also contributes to an increase in interethnic marriages.

Table 2 shows the percentage of children whose parents in five groups. As can be seen, the proportion of children whose parents of the same Kinh is the highest rate, which accounts for 81.4%, as a result of the biggest ethnic group in Vietnam. Meanwhile, there is only about 3% of children with parents who belong to different ethnic groups. In addition, most of the children, whose parents are ethnic minorities, live in urban areas. The contrary is seen in the other ethnic groups.

Table 2: The percentage of children whose parents in five groups

Parental marriages	Distribution of children by parental marriage		
	All	Urban	Rural
Parents of the same Kinh	81.4%	92.1%	78.4%
Kinh father and ethnic minority mother	1.0%	1.2%	0.9%
Ethnic minority father and Kinh mother	1.3%	1.6%	1.2%
Parent are different ethnic minorities	0.8%	0.3%	0.9%
Parents of the same ethnic minorities	15.6%	4.8%	18.6%
Total	100%	100%	100%

Source: Computed by the author from Census 2009.

Educational achievement, which measured by the highest qualification, shows that ethnic minorities' education was significantly lower than that of the Kinh. To specify, educational achievement of children under 14 years old have the highest qualifications, primary school, at 32%, while the figure is 35% for Kinh children. However, the rate of adults (over 14 years) of the ethnic minority groups without a degree is 24%, while this figure is only 14% for Kinh adults. Results were similar for other higher education levels (for detail, see Table 3).

Table 3: The highest educational diploma by ethnic group in Vietnam

Highest educational diploma	<= 14 years old			> 14 years old		
	Minorities	Kinh	Total	Minorities	Kinh	Total
Lower education	67%	64%	65%	24%	14%	16%
Primary School	32%	35%	34%	29%	23%	24%
Secondary school	1%	1%	1%	29%	28%	29%
High school	0%	0%	0%	10%	15%	14%
Vocational training	--	--	--	5%	11%	10%
College	--	--	--	1%	2%	2%
University	--	--	--	2%	6%	5%
Upper education	--	--	--	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%

Source: Computed by the author from VHLSS 2012.

Table 4 shows some descriptive statistics analyzes of interethnic marriages in the relationship with enrolment and child's abilities in Vietnam. In comparison with children whose the same ethnic minority parents, the enrolment rate of children whose the different ethnic minority parents is significantly higher at 69.2%, compared with 59.4%. This rate is 72.6%, respectively, for children with Kinh father and ethnic minority mother, and 71.1% for ethnic minority father and Kinh mother. While 0.6% children of parents, who are ethnic minorities, find it hard to see, the numbers in other groups are higher. However, in other abilities, the percentage of children whose ethnic minority parents is lower than that of other groups.

When authors classified the child population sample into two age groups, the results are significantly different in enrolment rates between groups of children under and equal fourteen and the group of children over fourteen years old. In the group of children under and equal fourteen, the enrolment rate of children who have parents with different ethnic minorities is significantly higher than that of children whose the same ethnic minority parents, at 92.9% in comparison with 84.3%. Also, the enrolment rate was 93.3% for children of Kinh father and ethnic minority mother, and 94.1% for ethnic minority father and Kinh mother. The percentage of children who find it difficult to see the same ethnic minority parents group is lowest, which accounts for 0.5%. Meanwhile, in the other abilities, the lowest numbers belong to parents of the same Kinh group. The same trend is seen in the group of children over fourteen.

Table 4: Interethnic marriages and child abilities

	School enrolment rate	Number of completed grades	% with difficulty in seeing	% with difficulty in hearing	% with difficulty in walking	% with difficulty in remember
The group of children aged 6-14						
Parents of the same Kinh	95.3%	5.20	0.7%	0.3%	0.4%	0.7%
Kinh father and ethnic minority mother	93.3%	4.82	0.7%	0.4%	0.4%	0.7%
Ethnic minority father and Kinh mother	94.1%	4.94	0.8%	0.4%	0.4%	0.8%
Parents are different ethnic minorities	92.9%	4.80	0.6%	0.5%	0.5%	0.9%
Parents of the same ethnic minorities	84.3%	4.33	0.5%	0.6%	0.6%	0.9%
<i>Total</i>	93.5%	5.05	0.7%	0.4%	0.4%	0.8%
The group of children aged 15-22						
Parents of the same Kinh	49.5%	8.49	1.0%	0.5%	0.6%	1.0%
Kinh father and ethnic minority mother	44.8%	8.38	1.2%	0.6%	0.7%	1.0%
Ethnic minority father and Kinh mother	43.9%	8.42	1.0%	0.5%	0.7%	0.9%
Parents are different ethnic minorities	39.3%	8.71	0.7%	0.7%	0.8%	1.0%
Parents of the same ethnic minorities	29.7%	7.61	0.6%	0.7%	0.7%	0.9%
<i>Total</i>	46.5%	8.36	0.9%	0.6%	0.6%	0.9%

Source: Computed by the author from Census 2009.

4. Estimation method

To answer the research questions, we established empirical models to test the research hypothesis. Accordingly, we assume that the educational attainment of children is determined by a function of factors including the parents' type of marriage and characteristics of children and their parents, i.e. $Y = f(D, X, u)$. Where, u is a vector of other factors that have the influence on the educational attainment of children.

Similar to Van Ours and Veenman (2008), the effect of the factor groups (D and X) on the educational attainment of children is investigated by probit models. The educational attainment of children thus is captured by that the children whether or not to engage in formal schooling. Y receives value one if that child is attending formal schooling, and gets value zero in other cases. Empirically, the econometric model can be exhibited regarding a probit model as follows.

$$\Pr(Y_i = 1 | D_j, X_j) = \Phi(\alpha_{0i} + \delta_{0ij} D_j + \gamma_{0ij} X_j + \varepsilon_{0i}) \quad (1)$$

Where, Φ is the standard cumulative normal. α , δ and γ are vectors of estimated parameters and ε is a vector of error terms. Y is a dummy variable representative for the educational performance of child i . D_j is a vector of variables on the interethnic marriages of parents. This vector of variables measures the impact of interethnic marriages on the education attainment of children. They consist of variables that both parents of child i are Kinh or ethnic, and that one of their parents is Kinh or their parents have different ethnics. The vector X_j includes control variables that can affect the educational attainment of children. Such variables are suggested in literature including the gender and the age of children, the educational achievement and the age of parents.

The influence of parents' interethnic marriages on the educational attainment of children may be different between the aged 15 to 22 years old group and the aged 7 to 14 years old group. To study this issue, equation (1) is estimated for two subsamples by the age of children, as follows.

$$\text{Subsample 1: } \Pr(Y_i = 1 | D_j, X_j) = \Phi(\alpha_{1i} + \delta_{1ij} D_j + \gamma_{1ij} X_j + \varepsilon_{1i}) \quad (2)$$

$$\text{Subsample 2: } \Pr(Y_i = 1 | D_j, X_j) = \Phi(\alpha_{2i} + \delta_{2ij} D_j + \gamma_{2ij} X_j + \varepsilon_{2i}) \quad (3)$$

Also, the author continues to investigate the influence of parents' interethnic marriages on the physical fitness and functional ability of children. The key dependent variables (Y_m) takes on the values 1 if children have abilities to see, to hear, to walk and to remember in daily activities, and equal to 0 otherwise. Thus, probit model should be estimated as follows.

$$\Pr(Y_{mi} = 1 | D_j, X_j) = \Phi(\beta_{0i} + \beta_{mij} D_j + \beta_{mij} X_j + e_{mi}) \quad (4)$$

Where β is vectors of estimated parameters and e is vectors of error terms in the regression model.

Marginal probability effects are the partial effects of each explanatory variable on the probability that the observed dependent variable $Y_i = 1$, where in probit models

$$\Pr(Y_i=1) = \Phi(x_i^T \beta) = \text{standard normal c.d.f. evaluated at } x_i^T \beta.$$

5. Empirical results

The estimation results presented in Table 5 show that, in comparison with the parents who are the same ethnic minorities, the estimated coefficients of parents who are different ethnic minorities are positive and statistically significant at 1%. This implies that the interethnic marriage of parents has a positive influence on the education of children. Specifically, the probability participated in the formal school of 7-14 year-old children, who have their parents in different ethnic minorities, is higher than those who have parents in same ethnic minorities, with a marginal probability of roughly 0.1%.

In terms of the parental marriage between Kinh father and ethnic minority mother, the recorded results are not obvious. Meanwhile, the parental marriage between Kinh mother and ethnic minority father has a positive impact on the grades of children, as suggested by the evidence that the coefficients are significant at 1%. In addition, positive coefficients of same Kinh parents are statistically significant at 1% suggests that children having Kinh parents tend to advance in education compared to counterparts who have parents in ethnic minorities.

Regarding personal characteristics, the sex, for example, makes a difference in the probability of individual participation in formal schooling. Specifically, female children have a higher probability to participate in formal schooling than male children, with a probability margin at 0.42% for the children aged 7 to 14. This may be because female children tend to be docile and hard studying than men in general, so they have more opportunities to participate in learning in a mainstream school.

The probability of participation in learning at a mainstream school also decreases linearly with the age of the child. At 1% level of significance, estimated coefficients indicate that the probability of a child studying in a mainstream school drops over 1% while its age increases by one year. This result is consistent with the fact that the opportunity to participate in a formal schooling decreases with age. A similar result is also found with the marginal impact of parental age on the probability of children to education in a mainstream school despite the marginal impact magnitude is very small.

The results also show the importance of parental characteristics. In terms of education, parental years of schooling have a positive impact on the educational achievement of children. The estimated coefficients, which are positive and significant at 1%, show that the probability of children enrolling in formal school increase respectively 0.00542 or 0.00675 for each unit increase in years of schooling of mother or father. The marginal influence of mother education on the educational achievement of children is greater than those of father education. These results allow to partly explain the fact that mothers spend more time on family and child care, thereby marginal effects of maternal education on children is greater.

Table 5. Marginal effects of parental marriage on children's education

Explanatory variables	Children aged 7-14		Individual aged 15-22	
	School enrolment	Number of completed grades	School enrolment	Number of completed grades
Parents of the same Kinh	0.00082 (0.00080)	0.00961*** (0.00053)	0.02144*** (0.00422)	0.01264*** (0.00084)
Kinh father and ethnic minority mother	0.00509*** (0.00178)	0.00388*** (0.00056)	0.02439*** (0.00764)	0.00692*** (0.00134)
Ethnic minority father and Kinh mother	0.00120 (0.00145)	0.00569*** (0.00042)	-0.00019 (0.00705)	0.01099*** (0.00095)
Parents are different ethnic minorities	0.00898*** (0.00126)	0.00558*** (0.00044)	-0.01848** (0.00833)	0.01277*** (0.00089)
Parents of the same ethnic group	References			
Age	-0.01081*** (0.00012)	0.00125*** (0.00004)	-0.13066*** (0.00057)	-0.00437*** (0.00009)
Boy	-0.00416*** (0.00035)	0.00072*** (0.00020)	-0.08069*** (0.00146)	-0.00004 (0.00038)
Mother education as years of schooling	0.00675*** (0.00010)	0.00171*** (0.00004)	0.03427*** (0.00038)	0.00216*** (0.00007)
Father education as years of schooling	0.00542*** (0.00008)	-0.00009*** (0.00002)	0.03868*** (0.00031)	0.00011** (0.00005)
Age of mother	-0.00056*** (0.00005)	0.00146*** (0.00004)	-0.00276*** (0.00021)	0.00260*** (0.00007)
Age of father	-0.00023*** (0.00004)	-0.00019*** (0.00002)	0.00450*** (0.00019)	-0.00010** (0.00004)
Observations	1,606,599	1,606,599	1,472,623	1,472,623
R-squared	0.224	0.159	0.286	0.0793

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

Source: Calculated by the author from Census 2009.

The results estimate the impact of interethnic marriages on children's disabilities are presented in Table 6 and Table 7. These are divided into two groups of age, the age of 7 to 14 and the age of 15 to 22.

Regarding the impact of interethnic marriages on the ability to see (sight) of children, compared with the reference group whose the same ethnic minority parents, we only find the evidence of a positive impact at 10% level of significance in the case of ethnic minority father and Kinh mother. If children have same Kinh parents or Kinh father and ethnic minority mother, the positive impact on the ability to hear is just discovered for children aged 15 to 22.

If children have same Kinh parents, their abilities to hear or to walk tend to be lower in comparison with children whose parents from the same ethnic minorities. This evidence is found in both two groups of age. In the younger group, walking ability of children whose ethnic minority father and Kinh mother is smaller than children whose parents from the same ethnic minorities. Meanwhile, in both two groups of age, we do not notice the difference in the effects of interethnic marriage on the disability of young children between children whose parents from the different ethnic minorities and children whose parents from the same ethnic minorities.

We also do not recognize the influence of interethnic marriage on the cognitive abilities of children that measured by the ability to remember for children in the age of 7 to 14. Meanwhile, this influence is positive and statistically significant for children in the age of 15 to 22 if the children have same Kinh parents, or Kinh father and ethnic minority mother. This may be due to the indirect influence of same Kinh parents on their children. These children have better learning conditions, so they tend to perceive and remember better than children who have same ethnic minority parents.

Table 6. Marginal effects of parental marriage on children's disabilities: sample of children at the age of 7-14

Explanatory variables	Difficulty in seeing	Difficulty in hearing	Difficulty in walking	Difficulty in remembering
Parent of the same Kinh	-0.00004 (0.00027)	-0.00177*** (0.00021)	-0.00110*** (0.00019)	0.00018 (0.00027)
Kinh father and ethnic minority mother	0.00029 (0.00083)	-0.00064 (0.00055)	-0.00100 (0.00100)	0.00056 (0.00083)
Ethnic minority father and Kinh mother	0.00159* (0.00095)	-0.00081 (0.00050)	-0.00095** (0.00039)	0.00088 (0.00079)
Parent are different ethnic minorities	0.00072 (0.00086)	-0.00022 (0.00041)	0.00006 (0.00048)	0.00083 (0.00078)
Parent of the same ethnic group	References			
Age	0.00054*** (0.00004)	0.00020*** (0.00003)	0.00006** (0.00003)	0.00010*** (0.00004)
Boy	-0.00018 (0.00017)	0.00083*** (0.00011)	0.00092*** (0.00012)	0.00175*** (0.00015)
Mother education as years of schooling	0.00026*** (0.00003)	-0.00009*** (0.00002)	-0.00004* (0.00002)	-0.00011*** (0.00003)
Father education as years of schooling	0.00003 (0.00003)	0.00003* (0.00002)	0.00006*** (0.00002)	0.00012*** (0.00002)
Age of mother	0.00019*** (0.00004)	-0.00009*** (0.00002)	-0.00008*** (0.00002)	-0.00031*** (0.00003)
Age of father	0.00009*** (0.00002)	0.00003** (0.00002)	0.00000 (0.00002)	0.00006*** (0.00002)
Observations	1,606,599	1,606,599	1,606,599	1,606,599
R-squared	0.0120	0.0101	0.00457	0.00868

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

Source: Calculated by the author from Census 2009.

Table 7. Marginal effects of parental marriage on children's disabilities: sample of children at the age of 15-22

Explanatory variables	Difficulty in seeing	Difficulty in hearing	Difficulty in walking	Difficulty in remembering
Parent of the same Kinh	0.00090*** (0.00032)	-0.00077*** (0.00021)	-0.00098*** (0.00022)	0.00142*** (0.00027)
Kinh father and ethnic minority mother	0.00349** (0.00155)	-0.00048 (0.00077)	0.00048 (0.00084)	0.00208* (0.00119)
Ethnic minority father and Kinh mother	0.00211* (0.00120)	-0.00126** (0.00052)	0.00021 (0.00067)	0.00086 (0.00089)
Parent are different ethnic minorities	-0.00102 (0.00087)	0.00071 (0.00071)	0.00097 (0.00074)	0.00140 (0.00107)
Parent of the same ethnic group	References			
Age	-0.00016*** (0.00005)	0.00051*** (0.00003)	0.00055*** (0.00003)	0.00068*** (0.00005)
Boy	-0.00180*** (0.00021)	0.00054*** (0.00014)	0.00086*** (0.00015)	0.00079*** (0.00019)
Mother education as years of schooling	0.00042*** (0.00005)	-0.00004 (0.00003)	-0.00004 (0.00003)	-0.00002 (0.00004)
Father education as years of schooling	-0.00002 (0.00003)	0.00001 (0.00002)	0.00004* (0.00002)	0.00011*** (0.00003)
Age of mother	0.00035*** (0.00005)	-0.00017*** (0.00003)	-0.00008*** (0.00003)	-0.00029*** (0.00004)
Age of father	0.00015*** (0.00003)	0.00006*** (0.00002)	0.00006*** (0.00002)	0.00010*** (0.00003)
Observations	1,472,623	1,472,623	1,472,623	1,472,623
R-squared	0.00922	0.00768	0.00789	0.00820

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

Source: Calculated by the author from Census 2009.

6. Conclusions

In the study, we use the probit model with the sample extracted from the 2009 Population and Housing Census to measure the impact of parents' interethnic marriages on their child education attainment. This impact is measured for different groups of ethnic of a couple in comparison to a couple have same ethnic. In addition, we also examine this influence parents' interethnic marriages on their child disability.

We found that interethnic marriages have positive effects on the educational attainment of children in Vietnam. The effects of interethnic marriages of parents on the educational achievement of children decrease with the age of the child. The different ethnic minority parents have a positive impact on the education of children in the age category 7-14 years in comparison with the same ethnic minority parents. The ability to participate in the formal school of children whose, the different ethnic minority parents, is higher than children whose the same ethnic minority parents, with a marginal probability is approximately 4%. However, this impact is negative for children in the age category 15-22 years. We did not detect the differences in the effects of interethnic marriages on the achievement of children in the age category 7-14 years between children whose Kinh parents and children whose parents from the same ethnic minorities. This difference is detected only for children in the age category 15-22 years.

The impact of interethnic marriages of the parents on the child's educational achievement decreases with their age. When children get older, their individual characteristics will play a key role in the determinant of their educational achievement. When children mature, alongside individual factors, the factors of families, particularly the educational attainment and the age of parents, may influence mainly to the educational achievement of children. The influence of the mother on the child's educational achievement decreases with the age while the impact of father's age increases.

Children with Kinh parents tend to have lower physical ability than children with ethnic minorities parents. If children have Kinh parents, the abilities to hear or walk of them tend to be lower in comparison with children whose parents from the same ethnic minorities. Regarding the impact of interethnic marriages on the child's ability to remember, we do not detect evidence for children between 7 and 14 years of age while this influence is positive and has statistical significance for the age category 15-22 years.

The results of this research will be a contribution to the empirical literature in Vietnam about the impact of parents on their children. Specifically, the marriage of parents has a significant impact on not only the educational achievement of children, but also the possibility of physical and cognitive abilities of children as the abilities to see, to hear, to walk and to remember. This result suggests that the decision of marriage of parents

significantly affect both physical and cognitive capacity. This result may be empirical evidence to integrate into the policies of marriage and family as the promotion of ethnic minorities to marry Kinh people.

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