Family Background and Admission Criteria as the Predictors of University GPA: Evidence from a University in Vietnam

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ABSTRACT

Based on three data sets of information on students of a university in Vietnam, we estimate the predictors of GPA by using the two-stage least squares (2SLS) method. The results of estimation highlight that parents' occupation as farmers and living location in rural areas harm the GPA of students at university (University GPA). Causally, the government does not control or monitor the hours of part-time work of students earning a living cost and tuition fees, which rise dynamically in cities located near the university. The finance support policies for rural students whose parents are farmers still do not serve enough to lessen the financial burden and thus reduce the working time of students. Furthermore, we also find a positive relationship between admission criteria including national university entrance score, high school achievements, English capability, and the university GPA. This might give the idea of improving the admission policy for universities.

Keywords: university GPA, family background, admission criteria, inclusive education

Introduction

The economic reform that Vietnam embarked upon in the late 1980s to change from a centrally planned economy to a market economy has brought many remarkable economic achievements for Vietnam. High and continuous GDP growth rates and successful economic development over the period have resulted in overall improvement of people's welfare and significant poverty reduction. It is expected that by 2020 Vietnam will attain the status of a middle-income industrialized country while science and technology (S&T) are key driving forces of the country's industrialization and modernization program.

To achieve these goals, higher education should be considered as a significant issue since it helps to create high-quality human resources for the development of Vietnam. However, economic growth should be beneficial for most people, especially the poor; including accessibilities in higher education for the poor and habitats in rural areas. According to Vu, Le, and Giang (2012), they pointed out that there is inequality of accessibilities in higher education between rural and urban areas, among ethnicities, and among income quintiles. Meanwhile, in our research, we study from a different view, which is the relation between the family background, namely parent's occupation, living locations, and their children's university Grade Point Average (GPA). Our results show that family background harms the children's university GPA. The explanation for such an outcome would be the fact that the financial support of the family was not enough for their children, making the children spend more time for part-time jobs instead of studying.

Vietnamese universities have used the national university entrance exam as the main admission criterion for many years. However, with the changes in higher education admission governance policy, the match between university entrance exam and student performance might be affected, and/or university entrance exam might not be the most affecting predictor anymore. This brings to the demand for improving admission criteria of a university in Vietnam.

The remaining of the paper is organized as follows. Section 2 presents a literature review on the influence of family background and admission criteria on the academic achievement of a student. Details on data and the research methodology employed in the paper are in section 3, while discussion on the results and policy implications will be presented in section 4 and section 5, respectively.

Literature review

The importance of education was validated by all researchers around the world. As a result, almost all families want their children to have a good education, and the children are expected to not only gain a degree from a university but also to graduate with a high GPA. University admission and university graduation are two important milestones, which decide the future of students. However, the students' performances sometimes do not match with the grades they have got in the national university entrance exam; for instance, some students that got high scores in their admission test do not have good achievements in university. Many studies argue

that the admission criteria play a key role in evaluating the performances of students at university. Meanwhile, there are also studies debating that the family background of students is the significant element to predict their performances. Weiser & Riggio (2010) mentioned that family background also has a huge effect on academic outcomes. The issue of how these two factors influence students' study and which one is more important is widely debated. The literature review in this paper focuses on investigating the two factors, admission criteria and family background, and evaluating them to compare with the data in the case of higher education in Vietnam.

The student recruitments of most universities and colleges in the world are based on admission criteria. However, there is a variety of criteria that a university can choose to apply. Gabriel & Marius' article (2011) is the most useful study as they not only present a diversity of worldwide admission criteria but also show that high school grade point average is the only one of the admission criteria that is efficient in predicting academic performance. In that study, baccalaureate exam, high school GPA, Scholastic aptitude/assessment test (SAT) are mentioned as the tests reflect the future academic performances. However, Gabriel & Marius (2011) indicate that a great number of studies attempted to recognize high school grade point average (GPA) and general success in high school as two factors remarkably interdependent with university GPA and graduation. For instance, high school rank and high school GPA are found to be the most effective predictor of success in college (Fletcher, Halpin, & Halpin, 1999).

A large number of other researches indicate that GPA is the most powerful predictor for not only evaluating the academic performances of students but also bearing a strong relationship with family income (Geiser & Santiceles, 2007). Hoffman & Lowitzki (2005) find that GPA is a stronger predictor of success than other standardized test scores for both racial and religious minority students. Gabriel & Marius (2011) in their study also prove that standardized admission tests like the baccalaureate test or the college admission exam reflect student performance in a single evaluation, mean they fail to assess test preparation, repeat test-taking, and other "test wise" strategies aimed at boosting scores. The reason is that these tests do not show the whole capacity of students. Elizabeth et al., (2011) present that some characteristics including motivation; leadership skills, teamwork skills, problem-solving skills, and compassion are not assessed in the university entry tests. Brown & Conley (2007) explain that sections on the exit exams such as the baccalaureate exam measure only a small piece of the knowledge and skills, which are expected from college and employers while GPA can measure the students' ability more comprehensively. Hoffman & Lowitzki (2005) find that high school grades are stronger predictors of success than standardized test scores for both racial and religious minority students. The Maryland State Higher Education Commission (1996) also identifies high school GPA as the best predictor of college GPA among the SAT Verbal score, average grades in high school English and social studies courses. However, the study of Gabriel and Marius is only a pilot study, thus they did not consider the other factors such as socioeconomic status, living location, or parental effects of students.

Some other studies have also included other factors such as gender, age, and marital status. Elizabeth et al., (2011) present that some older students have to work and study as well as join more community activities, thus they might have poorer academic performance than younger students with fewer outside responsibilities. Moreover, in some specific majors like nursing, female students perform better than male students but on the contrary research identified male gender as an indicator of academic performance of undergraduate nursing students (Ali, 2008).

While some researchers argue that the GPA is the best measure of students' academic performances, there are other indicators such as family structure, socioeconomic status, parental relationship quality, parent-school involvement, and parental school aspirations, parental income, parent's investments, childhood development, environment number of children and education of parents. Weiser & Riggio (2010) present that family background features, covering family structure, socioeconomic status, parental relationship quality, parent-school involvement, and parental school aspirations, are the most frequently linked to academic outcomes. Studies explain that family structure is related to academic achievement as children and adolescents from intact families perform better than their peers from single-parent homes on a wide variety of outcomes including grades, standardized achievement test scores, high school completion, and college graduation (Amato & Keith 1991; Amato 2001; Astone & McLanahan 1991; Naevdal & Thuen 2004). Besides, socioeconomic status is strongly linked to academic achievement as well. Researches show that the higher socioeconomic levels students have, the higher grades, better tests achievement, and longer education they get (Gottfried et al., 2003; Matsen et al., 1999; Teachman 1987). Many researchers suppose that the greater cultural and educational resources are enjoyed by higher socioeconomic individuals due to this relationship (De Graaf et al., 1986). However, Cheung & Andersen (2003) indicate that even when controlling for these resources, family socio-economic status still has a powerful impact on educational performance. High-quality relationships between parents and children are featured by positive influence and warmth, emotional support, and the facilitation of independence (Kenny & Sirin, 1987). In addition, parent relationship quality is connected to academic performance, school engagement, and standardized test scores (Dornbusch et al., 1987; Ginsburg & Bronstein 1993; Grolnick & Ryan 1989). Matsen et al., (1999) explain that parent relationship quality provides a strong impact on children's cognitive competence and growing up procedure, thus it has a special and noteworthy relationship with academic achievement. Parental school involvement, which includes parents' participation in school activities, communication between parents and children about school, support of homework, and supervision and monitoring of schoolwork, is a major influence on students' academic achievements as well (Ho & Williams, 1996; Mji & Mbinda, 2005). With the assistance of parents, children will have huge advantages and motivation to get higher academic outcomes including standardized test scores, GPA, and subject-specific grades (Catsambis 2002; Fan & Chen 2001; Ho & Williams 1996; Keith et al., 1993). Parental educational aspirations are also linked to academic performance. Parents with high educational aspirations expect their children to finish high school, be involved in, and complete college, and receive good grades. Higher levels of parental educational aspirations positively bring their children to join more

challenging classes and get higher test scores (Astone & McLanahan 1991; Catsambis 2002; Milne et al., 1986). Furthermore, parental aspirations significantly forecast whether students should continue their education after high school and college completion (Bank et al., 1990; Catsambis 2002; Leung et al., 1987). Although this study presents a great deal of knowledge, it only investigates data from one university. Moreover, the reliance on students' responses is not high because their perception of the parent's expectations maybe not be clear.

Anders et al., (2003) mentioned that there are powerful ties between parental income and education achievements of their children by a quote, which is expressed by politicians many times "Children's life chances should not depend on the size of their parents' wallets."This study approached the relationship between pupils' school performance and their family background in two interesting ways. The former captures a broad notion of equality of opportunity. It means they study the samples of siblings who grow up together with similar outcomes and in the same neighborhood, including the peers and the schools that were available where they grew up. The latter captures a narrower notion of family background by estimating the relationship between grade averages and parental earnings ("parents' wallets"). They analyzed 13 cohorts of pupils born in 1972-1984 who graduated from compulsory school at the age of 16 between 1988 and 2000. They separately analyzed for father's and family earnings, as well as for boys and girls. Although this study obtained some results, the limitation is that it is based on the old data in Sweden from the 1980s and 1990s when a turbulent era of school reforms occurred.

Orley & Cecilia (1998) also make a study about the interaction between family background and school performance with quite similar evidence that is based on twins. Their results are more specific in terms of the differences between two children and genders. With female twins, the response is that the less educated twin is caused by marriage (or the converse, ''got divorced and needed to get a job''). With males, it is said that the two twins have different interests in occupation. An only a small proportion of the responses, 11 percent, include such explanations of schooling differences as, ''one twin was better at books,'' which might (obviously) be clarified as ability differences (Orley & Cecilia, 1998). In addition, Orley & Cecilia also mention that birth weight may affect childhood development and thus perhaps schooling level attained. This study implies that individuals with higher levels of ability get rather higher levels of schooling. It means that the higher ability individuals may gain a slightly lower marginal benefit to schooling.

The number of children and the knowledge of parents are also significant factors affecting academic performance. There is an interaction between the educational level of parents with the number of children they are born. The quantity of children affects the resource that parents invest in children, which in turn, influences the quality of them. Becker & Lewis (1976) argue that an intention in the education of mothers has a positive effect on the quality but a strong negative influence on the number of their children. The common trust is that vital advances in birth

control knowledge not only remarkably reduce the number of children but also significantly increase their quality.

In short, although the previous studies present many interesting and useful results about the correlation between academic performances and admission criteria as well as family background, the answer has not been fully proved yet. While some studies only focus on the specific fields, others have problems with the number of samples, research scope or become obsolete. Most of the studies are applied to overseas universities where the economy, culture, society, and education are considerably different from those in Vietnam. Therefore, a study about this issue and in particular the case of Foreign Trade University is really important as it can contribute to the future extension supporting the development of higher education in Vietnam.

Research framework and methodology

Research framework

As mentioned above, many studies argue that admission criteria of students play a key role in predicting their performance meanwhile there are also studies debating that family background is the significant predictor. Vietnamese admission higher education governance policy brings about the priority for students from the rural area. However, there is the fact that students from rural areas whose parents' occupations almost are farmers might have to spend time for a part-time job to cover the living cost and tuition fees, therefore, have less time for studying. This paper investigates the impact of family background and location, specifically parents' occupation of farming, on university GPA (Figure 1).
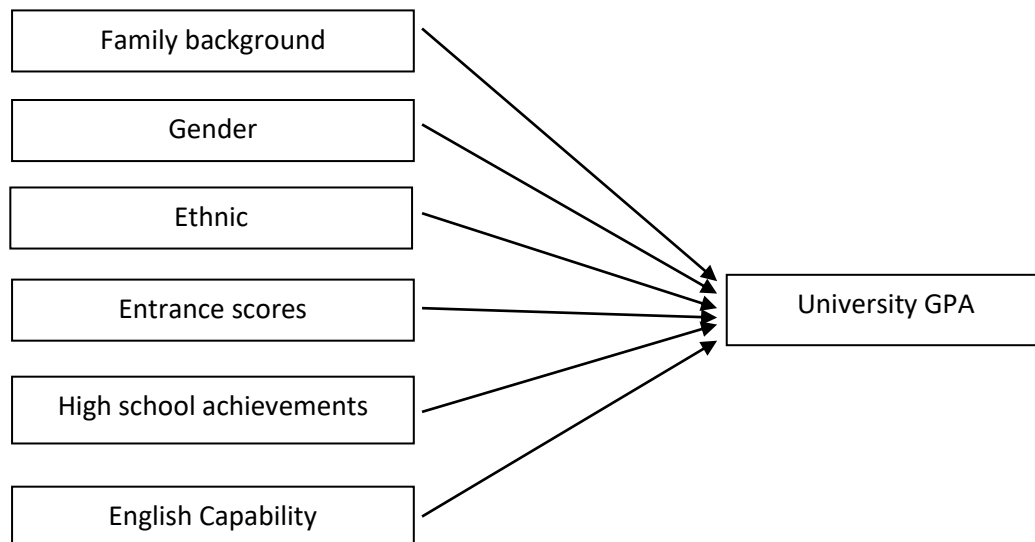

Figure 1: Theoretical Research Framework

Although Vietnamese universities currently provide different admission criteria but almost still use the national university entrance exam scores as the main basis. However, the facts indicate

that the proportion of students who do have not match University GPA and national university entrance exam scores is increasingly significant. This paper studies the admission criteria including entrance scores and other factors such as English capability, high school achievements as predictors of university GPA.

Furthermore, since choosing the blocks of entrance exam as well as study fields might causally identify the gender and ethnic characteristics of enrolling students thus the gender and ethnicity are also considered as control variables to university GPA. The national university entrance exam is divided into different blocks composing of block A0 (mathematics, physics, chemistry), A1 (mathematics, physics, English), D1 (mathematics, literature, English), D7 (mathematics, chemistry, English), and other D (including mathematics, literature and foreign languages).

Data

The paper uses three data sets of students' batch 50 (2011-2015) of Foreign Trade University (FTU). The first data set includes information such as national university entrance point, gender, ethnicity, block test, subjects, national or international prize, TOEIC. The second one contains a cumulative GPA of four years naming college GPA and the last includes information on the student's family background as the year of birth of parents, parental occupation, and the number of siblings in the family. The data is collected from the undergraduate studies department of FTU. In detail, the first data set contains about 2,200 students in which enrollment is 96 percent and it covers the two remaining data sets. The third data set was collected by conducting an email survey, which was sent to all students; however, and only about 1,500 students responded to this survey. Finally, there are around 1,471 observations in our sample with descriptive statistics of the variables as shown in Table 1. Specifically, the average college GPA of students is around 3.27, as 35 percent of the sample achieve excellent study results while 53 percent have good results, leaving 13 percent with average results. Additionally, FTU is the only university having training programs in social sciences, therefore, female students account for 70% of the university's total number of students. Next, a majority of students (97%) are in the Kinh ethnic group, and students in the economic field account for more than half of the total number of students, followed by the business administration field; making banking and finance and business foreign language field in the position of the last place.

In every province in Vietnam (64 provinces), competitions are held for local high school students. According to the results of such competition, the best students will be sent to take the international and national exams in selected subjects. If the students receive the prize, they will be given a priority mark in the national university entrance exam. Thus the international and national prizes are high school achievements considered while recruiting new freshmen for university. The table shows that about 17 percent of students enrolling at the university are those with international and national prizes.

At FTU, all freshmen have to undergo examinations of English capability, TOEIC, except business foreign language in French, Russian, Chinese, Japanese. The average TOEIC of the

freshmen is 500 points. Furthermore, English capability is an admission criterion for programs taught in English.

Two final variables related to the family background of students are the "farmer" variable and the "rural" variable. "Farmer" variable equals 1 if father's occupation is farmer and zero if otherwise; and account for about 20 percent. Similarly, the "rural" variable has the value of 1 if the family lives in rural areas and zero if otherwise. Table 1 shows that there are about 20% of the students whose fathers are farmers and approximately 24% of the sample whose families live in rural areas.

Table 1: Descriptive statistics of variables

Variable	N	Mean	Std. Dev.	Min	Max
GPA (continuous variable)	1471	3.27	0.29	2.37	3.96
Grade					
Excellence (dummy)	1471	0.35	0.48	0	1
Very good (dummy)	1471	0.52	0.50	0	1
Good and average (dummy)	1471	0.13	0.34	0	1
Female (dummy)	1471	0.71	0.45	0	1
Kinh ethnic (dummy)	1471	0.97	0.16	0	1
Economics (dummy)	1471	0.53	0.50	0	1
Banking and finance (dummy)	1471	0.10	0.30	0	1
Business administration (dummy)	1471	0.31	0.46	0	1
Business foreign language (dummy)	1471	0.06	0.23	0	1
National university entrance point (dummy)	1471	24.05	2.00	14	28.75
A block (dummy)	1471	0.44	0.50	0	1
D1 block (dummy)	1471	0.43	0.50	0	1
Others (dummy)	1471	0.13	0.33	0	1
National prize (continuous)	1471	0.17	0.37	0	1
Toeic/100 (continuous)	1466	5.03	2.91	0	9.8
Farmer (dummy)	1471	0.20	0.40	0	1
Rural (dummy)	1471	0.24	0.43	0	1

Source: Authors' calculation from data

Research methodology

In Vietnam as well as in other countries, the cumulative GPA of students (college GPA) is one of the important criteria, which initially assesses the capacity of students to participate in the labor market. Therefore, we construct a simple model to estimate the factors affecting college GPA as follows.

$$GPA_i = \beta_0 + \beta_1 Farmer_i + \sum_{j=2}^{8} \beta_j Control_{ij} + \beta_9 EntryPoint_i + \beta_{10} NationalPrize_i$$
$$+ \beta_{11} TOEIC_i + u_i$$

Where:

- The university GPA is the accumulated final grades in four years of students with the point scale ranging from zero to four.
- "Farmer" dummy variable equals 1 if father's occupation is farmer and zero if otherwise. We expect that this variable will harm student performance because families do not provide enough financial support for students; hence the students have to spend more hours working part-time to cover their living expenses. Furthermore, in Vietnam, it is very difficult for universities to manage the hours spent on part-time jobs of students or introduce restrictions on the number of hours per week that students can work part-time.
- The control variables include the female variable (1 if students are female,0 if students are male), and the Kinh ethnic (1 for Kinh and 0 for non-Kinh) and group variables related to study field including economics, banking and finance, business administration, and business foreign language.
- The test blocks variables are built on the selection of subjects that contestants decide to take an examination with. For example, block A includes mathematics, physics, and chemistry; D1 includes mathematics, literature, English; others consist of mathematics, literature, and foreign language (non-English).
- The national prize variable is established on whether students achieved the national award or prize when they were in high school. Thus, we expect that this variable will have a significantly positive influence on the university GPA.
- Finally, the variable of English test scores is measured by the TOEIC result of freshmen. We assume that if the student has a higher TOEIC point that the better he/she will access and update new materials in the world and therefore it can positively affect university GPA.

Methodologically, for the first step, we estimate the above equation by the OLS method. In particular, occupation of father variable is the farmer is interesting because we want to answer the question of whether these families provide monthly living expenses for students is less than other families or not enough living costs of a student, they work more hours to get extra income

and thus it may affect academic performance, university GPA. If this is true, the coefficient of a farmer is negative and statistically significant, government or universities should have policies to provide financial support to the students who come from families with parents doing farming and living in the rural areas.

We understand that the model possesses an endogenous problem, which is solved partially by the instrumental variable (IV) method. In our case, the instrumental variable is the "rural" variable and if the parents work in the agricultural sector, the families are more likely to live in rural areas. To determine a valid instrument, we perform the test statistics and the results in Table 2 show that all tests are passed and which means our instrument is valid. Finally, we estimate the "farmer" variable, endogenous variable, using the 2SLS method with the "rural" variable as an instrumental variable.

Table 2: Instrumental Variable Model - Test statistics

	Value	P-value
Wu-Hausman F test	7.28662	0.00703
Durbin-Wu-Hausman chi-sq test	7.32014	0.00682
Under identification test (Anderson canon. corr. LM statistic)	83.315	0.0000
Weak identification test (Cragg-Donald Wald F statistic)	87.552*	

*Note: Stock-Yogo (2005) weak ID test critical values: 10% maximal IV size is 16.38; 15% maximal IV size is 8.96; 20% maximal IV size is 6.66; and 25% maximal IV size is 5.53

For sensitivity analysis, our dependent variable, college GPA is classified into three categories, as mentioned in the data section above. According to regulations of the Ministry of Education and Training of Vietnam, GPA from 3.6 to 4.0 is excellent (outstanding); GPA from 3.2 to less than 3.6 is very good and GPA less than 3.2 is good and average. Our oGAP variable receives a value of 1 if the type of grade is good and average; 2forvery good; and 3forexcellence (outstanding). Finally, we use the ordered Probit model to estimate the above equation with the dependent variable, oGPA, and the same independent variables.

Analysis results

Table 3 presents the results of the regression estimations, the first column shows results of OLS estimation, the second column displays the results of 2SLS and the last one reveals results of the ordered Probit model. We interpret the results sequentially from top to bottom in Table 3.

Table 3: Regression estimation results

	(OLS)	(IV[1])	(Ordered Probit)
	GPA	GPA	oGPA
Farmer	-0.0307*	-0.2191***	-0.1535**
	(0.017)	(0.075)	(0.077)
Female	0.1278***	0.1305***	0.4855***
	(0.017)	(0.017)	(0.079)
Kinh	-0.0249	-0.0040	-0.0020
	(0.043)	(0.043)	(0.218)
Economics (base group)			
Banking and finance	0.1083***	0.1170***	0.4579***
	(0.027)	(0.027)	(0.120)
Business administration	0.0279*	0.0273*	0.1392*
	(0.016)	(0.016)	(0.072)
Business foreign language	0.0799***	0.0803***	0.2779**
	(0.028)	(0.029)	(0.138)
A block (base group)			
D1 block	-0.0173	-0.0180	-0.0950
	(0.021)	(0.021)	(0.095)
Others	-0.0991***	-0.1379***	-0.5747***
	(0.026)	(0.030)	(0.130)
National university entrance point	0.0555***	0.0551***	0.2214***
	(0.005)	(0.005)	(0.021)
National prize	0.1467***	0.1386***	0.6093***
	(0.019)	(0.019)	(0.094)
TOEIC/100	0.0243***	0.0174***	0.0962***
	(0.003)	(0.004)	(0.016)
_cons	1.7224***	1.7873***	
	(0.117)	(0.119)	
cut1			
_cons			5.7640***
			(0.574)
cut2			
_cons			7.5057***
			(0.585)
N	1466	1466	1466
pseudo R^2	0.229	0.232	0.113

Robust standard errors in parentheses; *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

Source: Authors' calculation from data

Firstly, the results show that if the student's father is a farmer, a negative influence on university GPA and a sign of the coefficient of farmer variable is consistent in all the columns in the Table. In Vietnam, students' parents who work in the agricultural sector or have unstable incomes have

[1]The authors will provide the result estimation in first stage if requested

trouble covering the living expenses for their children to live and study in the city where the university is located. These students can work part-time to earn extra income, which, unfortunately, affects their academic performance. In addition, it is difficult or impossible for universities in Vietnam to manage the number of hours per week spent on part-time jobs of a student as those universities with the higher education system in advanced countries can do. Currently, Vietnam still has policies for poor students with low-interest loans, nevertheless, the effectiveness of such programs should be re-considered.

In terms of control variables, the female students have better performance than male students do. However, this finding should be re-evaluated at other universities as the female student ratio in FTU is very high, around 70%, which may be different in the case of other universities in basic science fields. Besides, we do not see the difference in performance between students from ethnic minorities and the Kinh group. This would probably be because students from ethnic minorities only account for only about 3 percent of the total studied sample. Furthermore, students studying banking and finance; business administration, and business foreign language perform better than those studying in economics. The block A students, who took mathematics, physics, and chemistry in the national entrance exam also have better performance than others except for block D1. The constant is also positive, which implies that the overall students can have a certain level of GPA at around 1.7 out of 4. This can be considered as the minimum GPAs of FTU's university.

In addition to the efforts of students themselves in the learning process at the university, the national university entrance point should also be taken into account since the results show that students who have higher scores in the national university entrance exams, also have higher college GPA and we found it is consistent in all columns. Furthermore, winning a national prize has a positive and strong impact on GPA. Therefore, it can be concluded that the recent policies of the universities are good and appropriate and they help to attract many of these students.

Finally, the TOEIC point has a positive impact on university GPA. The students with a high TOEIC point have better abilities to access documents in English and as a result, they have better performance.

Conclusion and Implications

This paper emphasizes that being born in rural areas in Vietnam and having parents working in the agricultural sector have a negative effect on the students' university GPA. Because these students spend more time working to offset the cost of living, leading to poor academic performance. Therefore, the policies that both the government and the universities should focus on are providing financial support as well as gradually limiting working hours to help them improve their performance. In the context of expanding university autonomy and state budget constraint, besides re-considering the support policy for poor students, the government should

require universities to provide more financial supports including scholarships and scholarship loans to rural students while increasing tuition fees. For the universities, they should aware of the responsibility to bring about equality to access higher education for poor students to have stronger financial autonomy as well as opportunities for attracting talented students from a rural area and whose parents are farmers by providing more financial support or support services. Those will help students from rural areas achieve better learning outcomes and casually better future.

There have been many effective policies to support ethnic minorities. Our results do not find the differences in college GPA between ethnic minorities and the Kinh group. Similar to the results of previous studies in the world, our study also shows that high school achievements have a positive effect on university GPA and we find the same evidence with national university entrance exam scores. We think that Vietnam, as well as China, and South Korea should still maintain the national university entrance exam in the whole country since it helps to create more transparency in university recruitment and it is important to create fairness for rural students. The results also imply that the priority policy for international and national prize winners in enrolling into universities is appropriate. According to the authors, MOET might think of exempting them from the national university entrance exam because the results show that they have strong performance compared to the rest. Moreover, the university might consider other indicators for high school achievements besides international and national prizes which are assessed transparently to bring in admission criteria.

In the process of international integration, students who are good at English will acquire new knowledge and update themselves better, leading to better performance than those who are bad at English. The government should remain the National Project on improving foreign languages national wide and the university might consider English capability as one of the admission criteria. We propose to have policies requiring English outcomes for all graduate students.

This paper proposed the predictors of student performance including both family background and admission criteria, which should be considered when establishing support and admission policy in higher education. The results are appropriate with the previous studies and bring full evidence from Vietnamese universities. For further studies, the data should be expanded to other universities in Vietnam to avoid the bias in university's population as mentioned above relating to genders. In addition, more indicator proxy for family background and admission criteria might be considered in proposing higher education recruitment as well as support policies

References

Ali, P. A. (2008). Admission criteria and subsequent academic performance of general nursing diploma students. Journal of the Pakistan Medical Association, 58(3), 128.

Bjorklund, A., Lindahl, M., & Sund, K. (2003). Family background and school performance during a turbulent era of school reforms. Swedish Economic Policy Review, 10(2), 111-136.

Barlow, A. E., & Villarejo, M. (2004). Making a difference for minorities: Evaluation of an educational enrichment program. *Journal of research in science teaching*, *41*(9), 861-881.

Becker, G. S., & Lewis, H. G. (1974). Interaction between quantity and quality of children. In Economics of the Family: Marriage, children, and human capital (pp. 81-90). University of Chicago Press.

Brown, R. S., & Conley, D. T. (2007). Comparing state high school assessments to standards for success in entry-level university courses. Lawrence Erlbaum Associates, Inc., 12(2), 137-160.

De Graaf, N. D., De Graaf, P. M., & Kraaykamp, G. (2000). Parental cultural capital and educational attainment in the Netherlands: A refinement of the cultural capital perspective. Sociology of education, 92-111.

Dennis, J. M., Phinney, J. S., & Chuateco, L. I. (2005). The role of motivation, parental support, and peer support in the academic success of ethnic minority first-generation college students. *Journal of College Student Development*,*46*(3), 223-236.

Unni, E. J., Zhang, J., Radhakrishnan, R., Smith, K. P., Bridgen, C. M., DeYoung, M. H., & Metzger, T. G. (2011). Predictors of academic performance of pharmacy students based on admission criteria in a 3-year pharmacy program. Currents in Pharmacy Teaching and Learning, 3(3), 192-198.

Fletcher, J.T., Halpin, G., & Halpin, G. (1999). High School and College Grades: Is Past Performance a Predictor of Future Performance?. ERIC Institute of Education Sciences. Retrieved from http://www.eric.ed.gov/?id=ED436577

Geiser, S., & Santelices, M. V. (2007). Validity of High-School Grades in Predicting Student Success beyond the Freshman Year: High-School Record vs. Standardized Tests as Indicators of Four-Year College Outcomes. Research & Occasional Paper Series: CSHE. 6.07. Center for Studies in Higher Education.

Hoffman, J. L., & Lowitzki, K. E. (2005). Predicting college success with high school grades and test scores: Limitations for minority students. The Review of Higher Education, 28(4), 455-474.

Kenny, M. E., & Sirin, S. R. (2006). Parental attachment, self-worth, and depressive symptoms among emerging adults. Journal of Counseling & Development, 84(1), 61-71.

Maryland State Higher Education Commission. (1996). Relationship between high school and college performance by Maryland students. Student Outcome and Achievement Report. (ERIC Document Reproduction Service No. ED404976).

Orley, A., & Cecilia, R. (1998). Income, Schooling, and Ability: Evidence from a New Sample of Identical Twins. Oxford University Press. Retrieved from http://www.jstor.org/stable/2586991?seq=1#page_scan_tab_contents

Roşeanu, G., & Drugaş, M. (2011). The admission criteria to the university as predictors for academic performance: A pilot study. Journal of Psychological and Educational Research (JPER), (19/2), 7-19.

Vu, H. L., Le, V. T., & Giang, L. T. (2012). Equity and Access to Tertiary Education: The Case of Vietnam (No. 10). Development and Policies Research Center (DEPOCEN), Vietnam.

Weiser, D. A., & Riggio, H. R. (2010). Family background and academic achievement: does self-efficacy mediate outcomes?. Social Psychology of Education, 13(3), 367-383.

World Bank. (2008). Vietnam: Higher Education and Skills for Growth, Report No. 44428-VN, Human Development Department, East Asia, and Pacific Region, The World Bank