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Family and Student influences on Withdrawal from Rural Vietnam

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Introduction

Vietnam is now in the transition period from a centrally controlled economy to a market economy and aims to become an industrial country by the year 2020 (Do, 1996:3). Thus, the present period is known as the period of industrialisation and modernisation. More than ever the education quality of the labour force has been seen as an important determinant of a country's ability to participate in the rapidly emerging global economy. On the other hand, economic development in Vietnam in the past decade has allowed Vietnam to map out a higher level for universal education. Therefore, following the success in universalisation of primary education in 2000 (UPE), the education system in Vietnam now has a new challenge: universalisation of lower secondary education. Vietnam's target is that, by the year 2020, it will achieve the goal of universal lower secondary education and, in the near future, lower secondary education will become the minimum level of education in Vietnam (Tran, 1997a).

Eighty percent of the population in Vietnam lives in rural areas and this constrains the success of universal primary and lower secondary education. The rate of non-enrolment and early-school-withdrawal in rural, remote and mountainous areas is much higher than that of urban areas (Thai, 1992; Tran, Truong, Dam and Le, 1994; Tran, 1997a). Hence, to achieve the goal of universal lower secondary education, early withdrawal from school in rural mountainous areas should be investigated and managed. To date there has been very little research pertaining to early withdrawal from primary education in mountainous areas and almost no research addressing early withdrawal from lower secondary school in these areas. Thus, there is a need to explore reasons for and factors associated with early withdrawal from lower secondary education in mountainous areas.

There is strong evidence in the literature that gender, family characteristics and attitudes towards schooling correlate with students' achievement and the incidence of early withdrawal from school. In addition, in twenty years time the children who are in school now will become mothers and fathers of school aged children. Factors affecting students' withdrawal now may affect their children's schooling in future.

Despite the importance of the issues of early withdrawal from school in Vietnam in general and in mountainous areas in particular, research on early withdrawal from school has not been paid sufficient attention. Among the small number of studies addressing early withdrawal from school, gender, family characteristics, attitudes and achievement as factors influencing early withdrawal from school have been addressed to varying extents. While recognising that various factors influence early withdrawal from school in combination, previous research has exposed limitations in accounting for the interactions between the various factors. This may result in inaccuracy in establishing relative strengths and prioritising factors related to early withdrawal from school. To fill in this substantive methodological gap in education research pertaining to early withdrawal from school in Vietnam, the purpose of this project is to investigate the ways in which gender, family characteristics, attitudes towards schooling and students' achievement interact with each other to influence early withdrawal from lower secondary school in the mountainous areas of Vietnam.

Literature review on the influences on students' withdrawal

In this section, the findings from studies on the influences of gender, family characteristics, parents' and students' attitudes, students' behaviour and students' academic achievement on students' withdrawal are summarised. As a result of this summary, propositions important for the development of the hypothetical model of the current investigation are established.

Except for some ethnic minority groups in the US, in general males were more likely to leave school early than females in developed countries. In Asia, the influence of gender on early withdrawal from school varied depending on the country, levels of education and time. However, in developing countries in Asia in general, and in Vietnam in particular, there was evidence that females were more likely than males not to enrol in school and/ or withdraw from school early. Thus, while the differences between male and female withdrawal rates might vary according to educational level, time and different communities in a country, in general, gender was an important factor associated with students' withdrawal.

Characteristics of the family have been defined by many variables rather than a single variable. In addition, the number of variables included in "family characteristics" varied depending on the context of each study. In this investigation, family-related factors include family ethnic background, fathers' education, fathers' occupation, mothers' education, mothers' occupation, family economic status, number of children in the family, and siblings' withdrawal status.

The patterns of school withdrawal among different ethnic groups in different countries varied. Overall, however, there was evidence that ethnicity was associated with the students' propensity to withdraw early from school (Lamb, 1998; Lamb *et al.*, 2000; Le, 1997; Le and Pham, 1997; Marks and Fleming, 1999; Ngo, 1997; Newcomb *et al.*, 2002; NIES, 1998; Renzulli and Park, 2000; Rumberger, 1983; 1987;1995; Rumberger *et al.*, 1990; Rumberger and Larson, 1999; Rumberger and Thomas, 2000; Steinberg and Chan, 1984; Tran, 1997b; Velez, 1989; Velez and Saenz, 2001; Vu, 1998; Williams *et al.*, 1993).

Family socio-economic status was regarded internationally as a predictor of early withdrawal from school. Factors related to family socio-economic status were often combined into a single variable. However, the combination of family economic status and parents' education and occupation might constrain understanding of differences in influences of economic and social aspects on students' withdrawal (Williams *et al.*, 1993). Thus, it is more appropriate to combine parents' education and occupation as it was applied in Rosier's (1978) study. Parental education levels and parental occupations were found to be related to students' likelihood of early withdrawal from school (Dwyer *et al.*, 1996; Lamb *et al.*, 2000; Marks and Fleming, 1999; Nguyen, 1998; Renzulli and Park, 2000; Truong *et al.*, 1996). Family economic status has been regarded as an important factor associated with students' withdrawal (Ainley *et al.*, 1984; Bryk and Thum, 1989; Jimerson *et al.*, 2000; Lamb *et al.*, 2000; Long *et al.*, 1999; Thai, 1992; Truong *et al.*, 1994, Truong *et al.*, 1996; Renzulli and Park, 2000; Rumberger, 1983; 1995; Rumberger and Larson, 1998; Velez and Saenz, 2001;

Williams *et al.*, 1993). Less attention was given to the relationship between the number of children and students' withdrawal. However, studies addressing this relationship found that withdrawal students came from families with many siblings (Alexander *et al.*, 1997; Ekstrom *et al.*, 1986; Jenifer, 1989; NIES, 1998; Nguyen *et al.*, 1994; Thai, 1992; Truong *et al.*, 1994; Truong *et al.*, 1996). Like the case of the number of children in the family, there was a limited number of studies that explored the relationship between siblings' withdrawal status and students' withdrawal. These studies found an association between siblings' withdrawal status and students' withdrawal (Alexander *et al.*, 1997; Rumberger and Thomas, 2000). Thus, while the extent to which each of the family related factors affected students' withdrawal and was addressed by previous research was different, there was evidence that parents' occupation and education levels, family economic status, the number of children in the family and siblings' withdrawal status were important factors related to students' withdrawal.

Parents' attitudes were often included in family-related factors and students' attitudes were often included in individual or personal factors (Rosier, 1978). However, in some cases the latter was categorised as a school-related factor, as in Ainley's *et al.* (1984a) study. In other cases, both students' and parents' attitudes to education were included in social pressures (Kulkarni, 1996). Thai (1992) examined the influences of both parents' and students' attitudes on early withdrawal from school. Attitudes were addressed to a lesser extent than family-related factors such as socio-economic status. In particular, parents' attitudes were not sufficiently considered by research in developed countries. However, parents' attitudes were found to influence students' withdrawal internationally (Alexander *et al.*, 1997; Dang, 1994; Garnier *et al.*, 1997; Kulkarni, 1996; Nguyen, 1998; NIES, 1998; Thai, 1992; To, 1994; Tran, 1994; UNESCO, 1992). The relationship between students' attitudes and students' withdrawal was given greater attention in research in developed countries than in Vietnam and compared to parents' attitudes. It was found that students' attitudes were strongly related to their withdrawal (Ainley *et al.*, 1984a; Marks, 1995; Rosier, 1978; Rumberger, 1995). Thus, though the extent to which the relationships between parents' and students' attitudes and students' withdrawal were examined varied across countries and on an international scale, both parents' and students' attitudes were found to be related to students' withdrawal.

The relationship between students' academic achievement and students' withdrawal was paid greater attention than that between students' behaviour and students' withdrawal. It was found that students' behaviour, such as discipline and misbehaviour, contributed to students' withdrawal (Carbonaro, 1998; Rumberger *et al.*, 1990; Rumberger, 1995; Rumberger and Larson, 1998; Swanson and Schneider, 1999; Velez, 1989; Velez and Saenz, 2001). There was strong agreement on the finding that low achievement led to students' withdrawal across countries and over time (Alexander *et al.*, 2000; Barrington and Hendricks, 1989; Garnier *et al.*, 1997; Jimerson *et al.*, 2000; Lamb, 1997, Marks and Fleming, 1999; Newcomb *et al.*, 2000; Kaplan *et al.*, 1997; Rumberger, 1995; Rumberger and Thomas, 2000; Thai, 1992; Tran *et al.*, 1994; UNESCO, 1992; Velez, 1989; Velez and Saenz, 2001).

In summary, the findings from international studies pertaining to students' withdrawal lead to two important propositions:

Proposition 1: Gender, ethnicity, family economic status, parents' education and occupation, number of children in the family, siblings' withdrawal status, parents' and students' attitudes, students' behaviour and academic achievement were important factors relating to students' withdrawal.

Proposition 2: Fathers' and mothers' educational and occupational status were highly correlated and were often treated as a composite variable. (In examining the influences on students' withdrawal, it is more appropriate to separate family economic status and family social background such as parents' educational and occupation status).

Literature review on interaction between the influences on students' withdrawal

This section summarises the interaction between gender, family characteristics, students' and parents' attitudes, and students' behaviour and academic achievement. The interaction of each factor with the others will lead to a proposition important for establishing a hypothetical model for this investigation. It is noted that interactions between factors were suggested and tested in a very limited number of studies. The interactions between factors presented in this section are drawn not only from literature on students' withdrawal but are also drawn from studies that explored the factors influencing students' achievement, behaviour and attitudes, and studies from other social science fields such as sociology and psychology.

The association of gender with other factors

Research on an international scale suggested that gender influenced students' achievement (Nguyen and Fahey, 2001; Rosier, 1978; Williams *et al.*, 1993), students' behaviour (Ensminger and Slusarcick, 1992) and students' attitudes (Rosier, 1978). A number of studies in Asia highlighted the influence of students' gender on parental attitudes to the students' withdrawal from school (Kulkarni, 1996; Nguyen, 1998; Velez, 1989; Velez and Saenz, 2001; UNESCO, 1992, 1998). Thus, there was evidence that gender was associated with students' achievement, students' attitudes and parents' attitudes, and students' behaviour. Research pertaining to students' withdrawal sometimes addressed the interaction between gender with one or two of the above factors but not all.

The association of ethnicity with other factors

Research showed that ethnicity was associated with family economic status (Do and Mac, 1996; Schmid, 2001; Vu, 1998) and parents' education and occupation (Vu, 1998). Ethnicity was found to be related to the number of children in the family (Vu, 1998). Ethnicity was also found to be related to students' behaviour (Velez, 1989; Velez and Saenz, 2001) and achievement (Fejgin, 1995 cited in Schmid, 2001; Wampler *et al.*, 2002). While a number of research studies on students' withdrawal addressed the interaction between ethnicity and one or more other factors such as students' behaviour, achievement and family socio-economic status, none addressed

the interaction between ethnicity and all the listed factors. This demonstrated a lack of research differentiating the direct effect of ethnicity from the effect mediated through other factors.

Thus, there was evidence that ethnicity influenced family economic status, parents' education and occupation, number of children in the family, siblings' withdrawal status, parents' and students' attitudes, students' behaviour and students' academic achievement. However, none of the previous studies addressed the interaction between ethnicity and all the factors listed above.

The association of family characteristics with other factors

Research in the field of sociology suggested that causal relationships might exist within family-related factors. For example, parents' education and occupation were found by social researchers in Vietnam to influence family economic status (Henaff and Martin, 1999; Nguyen, 1995; Vu, 1997). In addition, the number of children in the family was influenced by family economic status and parents' education and occupation (Fraser, 1993; Vu, 1998). As students' withdrawal was influenced by ethnicity and parents' educational and occupation levels, it was apparent that siblings' withdrawal status was influenced by ethnicity and parents' education and occupation levels.

Family economic status, parents' education and occupation were found to influence students' and parents' attitudes (Rumberger *et al.*, 1990; Rumberger, 1995), students' academic achievement (Griffin and Tran, 2000; Jimerson *et al.*, 2000; Keeves, 1972; Marks and Fleming, 1999; Rosier, 1978; Rumberger *et al.*, 1990; Rumberger, 1995; Willms and Somers, 2001) and behaviour (Dixon-Floyd and Johnson, 1997; Jimerson *et al.*, 2000; Keeves, 1972; Tran, 1998; Rumberger *et al.*, 1990; Rumberger, 1995).

Thus, it was evident that:

- Parents' occupation and education influenced family economic status, the number of children in the family, siblings' withdrawal status, parents' and students' attitudes, and students' behaviour and academic achievement.
- Family economic status influenced number of children in the family, siblings' withdrawal status, parents' and students' attitudes, students' behaviour and academic achievement.

However, to date there has been a lack of empirical studies addressing all these influences on students' withdrawal in interaction with each other.

The association between parents' attitudes and other factors

While parents' attitudes were influenced by other factors such as family-related factors and gender, attitude also strongly influenced students' achievement. Alexander *et al.*, (1997), Carbonaro (1998), and Keeves (1972) found that the expectations of parents played an important role in the children's progress at school. In addition, while very few studies simultaneously examined the influences of parents' and students' attitudes on students' withdrawal, a number of researchers in Vietnam emphasised the influence of parents on their children (Nguyen, 1998; Nguyen, 1999). The influence of parents' attitudes on their children's behaviour was

also documented (Garnier *et al.*, 1997). Thus, there was evidence that parents' attitudes influenced students' attitudes, behaviour and achievement. However, the mechanism of, and the extent to which, the influence of parents' attitudes on students' withdrawal operated through these factors has not been examined.

The association between students' attitudes and other factors

It was evident that the influence of students' attitudes on their withdrawal was mediated through other factors. Marks (1995) found that students' general satisfaction and sense of achievement influenced their self-perceived achievement. Dang (1992) stressed the impact of losing interest in learning on low achievement. Keeves (1972) found that students' initial attitudes towards school influenced their class behaviour and academic achievement. Worrell and Hale (2001) found that the students' attitudes of "liking school" were negatively correlated to their disruptive behaviour such as "cutting days". Thus, these findings suggested that students' attitudes influenced their class behaviour and academic achievement. While achievement was seen as an intervening variable between students' attitudes and students' withdrawal (Marks, 1995; Dang, 1992), none of the previous studies pertaining to students' withdrawal examined the influence of students' attitudes on withdrawal in interaction with both students' behaviour and academic achievement.

The association between behaviour and achievement

It was evident that students' behaviour influenced achievement (Carbonaro, 1998; Keeves, 1972, Whitelaw *et al.*, 2000). However, there was a lack of studies that examined achievement as an intervening variable between students' behaviour and students' withdrawal. Thus, the extent to which students' behaviour directly and indirectly influenced students' withdrawal was not previously explored.

The review of literature on students' withdrawal and related literature suggested that factors influencing students' withdrawal might influence each other. For each of the factors reviewed in this section, a proposition on its association with other factors was established. Each proposition suggested possible causal relationships between factors. None of the previous studies examined the influence of these factors on students' withdrawal in a comprehensive interaction with other factors. The propositions established on the interaction between factors influencing students' withdrawal are:

Proposition 3: Students' gender influenced students' and parents' attitudes towards schooling and students' behaviour, and achievement.

Proposition 4: Ethnicity influenced family economic status, parents' education and occupation, number of children in the family, siblings' withdrawal status, parents' and students' attitudes, students' behaviour and academic achievement.

Proposition 5: Parents' occupation and education influenced family economic status, number of children in the family, siblings' withdrawal status, parents' and students' attitudes, students' behaviour and academic achievement.

Proposition 6: Family economic status influenced number of children in the family, siblings' withdrawal status, parents' and students' attitudes, students' behaviour and academic achievement.

Proposition 7: Parents' attitudes influenced students' attitudes, behaviour and achievement.

Proposition 8: Students' attitudes influenced achievement and behaviour.

Proposition 9: Students' behaviour influenced achievement.

Hypotheses and hypothetical model

The propositions outlined in the previous section suggested that the influences on students' withdrawal such as gender, family characteristics, attitudes, behaviour and achievement might influence students' withdrawal simultaneously in their comprehensive interactions. While there were a number of studies that either tested or suggested the possible interactions between factors in influencing students' withdrawal, none addressed all these factors simultaneously in interaction. Thus, while there was evidence that each factor might have both direct and indirect influences on students' withdrawal, the extent to which each factor directly and indirectly influenced students' withdrawal was not examined adequately. That is, there is a need to test the model developed when linking all the propositions from 1 to 9 into one model. Addressing all these factors in interaction will facilitate understanding the extent to which each of the factors influences students' withdrawal as well as how and why a certain factor influences students' withdrawal. As a result, the direct and indirect influences of each factor on students' withdrawal can be identified, which are very important for recommending meaningful intervention strategies. Thus, it is necessary to fill in the gaps in research on students' withdrawal by developing and testing a hypothetical model that addresses all these factors in their causal interaction.

Linking all the propositions, the hypothetical model of factors influencing students' withdrawal is developed and presented in Figure 1. In Figure 1, the names of the variables are as follows:

- Gender: GENDER
- Ethnicity: ETHNIC
- The number of children in the family: SIZE
- Siblings' withdrawal status: SIB
- Fathers' educational level: FED
- Mothers' educational level: MED
- Fathers' occupation: FOC
- Mothers' occupation: MOC
- Family social background: FSB (Family social background is the construct derived from variables of fathers' occupation, fathers' education, mothers' occupation, and mothers' education)
- Family wealth: FW
- Students' academic achievement: ACADE
- Students' behaviour: BEHAV
- Parents' attitudes towards schooling: PA
- Students' attitudes towards schooling: SA
- Students' withdrawal status: WITHDRAW

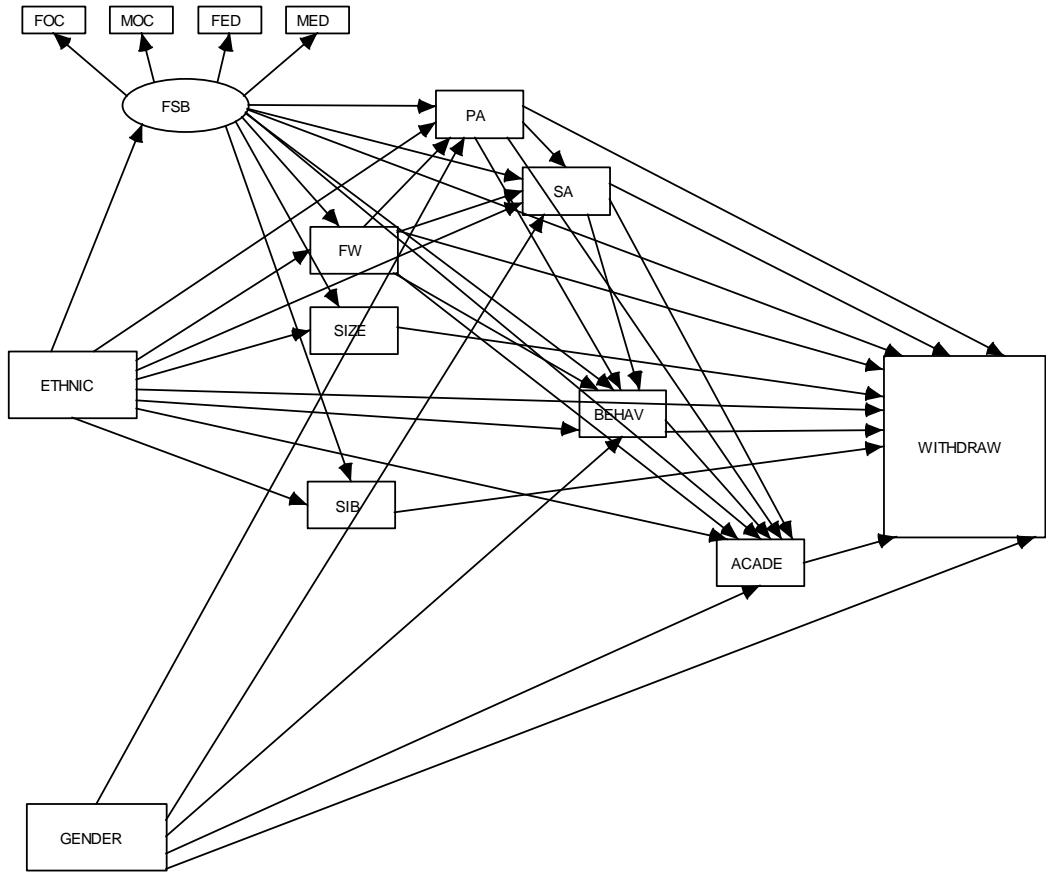


Figure 1: Hypothetical model of factors influencing withdrawal

Based on the propositions and the model the following hypotheses were developed:

Hypothesis 1: Fathers' occupation, mothers' occupation, fathers' education and mothers' education significantly combined to form a construct called "family social background" (See Proposition 2)

Hypothesis 2: Gender had both direct and indirect effects on students' withdrawal. The indirect effect could be monitored via parents' attitudes, students' attitudes, students' behaviour and students' academic achievement. (See Proposition 1 and 3)

Hypothesis 3: Ethnicity had both direct and indirect effects on students' withdrawal. The indirect effect could be monitored via family social background, family wealth, number of children in the family, siblings' withdrawal status, parents' attitudes, students' attitudes, students' behaviour and students' academic achievement. (See Proposition 1 and 4)

Hypothesis 4: Family social background had both direct and indirect effects on students' withdrawal. The indirect effect could be identified via family wealth, number of children in the family, siblings' withdrawal status, parents' attitudes, students' attitudes, students' behaviour and students' academic achievement. (See Proposition 1 and 5)

Hypothesis 5: Family wealth had both direct and indirect effects on students' withdrawal. The indirect effect could be identified via parents' attitudes, students' attitudes, students' behaviour and students' academic achievements. (See Proposition 1 and 6)

Hypothesis 6: The number of children in the family had a direct effect on students' withdrawal. (See Proposition 1)

Hypothesis 7: Siblings' withdrawal status had a direct effect on students' withdrawal. (See Proposition 1)

Hypothesis 8: Parents' attitudes had both direct and indirect effects on students' withdrawal. The indirect effect could be monitored via students' attitudes, students' behaviour and students' academic achievement. (See Proposition 1 and 7)

Hypothesis 9: Students' attitudes had both direct and indirect effects on students' withdrawal. The indirect effect could be monitored via students' behaviour and students' academic achievement. (See Proposition 1 and 8)

Hypothesis 10: Students' behaviour had both direct and indirect effects on students' withdrawal. The indirect effect could be monitored via students' academic achievement. (See Proposition 1 and 9)

Hypothesis 11: Students' academic achievement had direct effect on students' withdrawal. (See Proposition 1)

Definitions of categories, constructs and other single variables involved in the investigation

This section summaries the way dimensions and variables specified in the theoretical model are defined, as well as the way some of these are measured.

Gender (Variable GENDER)

In this study students' gender is defined as biological sex of students involved in the study and is coded as 1 for males, and 2 for females.

Family characteristics

In this section the measurement of variables such as ethnic background, family social background, family economic status, the number of children in the family, and siblings' withdrawal status is presented.

Ethnic background (Variable ETHNIC):

The variable to measure ethnic background of students is denoted as ETHNIC. The variable ethnicity (ETHNIC) is coded as a dichotomous variable with the Kinh group coded as 1, and the other groups coded as 2

The number of children in the family (Variable SIZE)

This variable is measured by the number of children in the family and is denoted as SIZE.

Family social background (Variable FSB)

The variable to measure family social background is denoted as FSB and is identified through the fathers' and the mothers' education level and fathers' and mothers' occupation.

The variables to measure fathers', mothers' educational levels and fathers' and mothers' occupational levels are denoted as are denoted as FED and MED, FOC and MOC respectively.

Family economic status (Variable FW):

Family economic status is identified through family wealth. The variable to measure family wealth is denoted as FW and was constructed from a set of sixteen items using Rasch model.

Siblings' withdrawal status (Variable SIB)

In this investigation, the variable SIB (retention status of siblings) is a dichotomous one. The coding of this variable is as follows:

- "Having no brother and sister withdrawing from school early" is coded as 1.
- "Having a sibling withdrawing from school early" is coded as 2.

The variable to describe the presence of siblings withdrawing from school is denoted as SIB.

Parents' and students' attitudes towards schooling

To measure students' and parents' attitudes to schooling, a set of items which covered both development and opportunity aspect of education was designed. Students and their parents were given the same set of questions, which were to rate the extent to which students and parents view school as helpful to students' future. After the items

were trialed, analysed and modified, tested for construct and content validity as well as reliability, a final version of the 15 items constructed parental and students' attitudes towards school helpfulness to the students' future was completed.

The variables to measure students' and parents' attitudes are denoted as SA and PA respectively.

Achievement

Students' achievement includes average academic scores and students' behaviour evaluation during the last semester when students were still in school. The definitions and measurement of students' academic scores and behaviour scores are presented next.

Students' academic achievement (Variable ACADE)

Students' academic achievement is measured via an aggregated academic score issued to students and parents each semester. In this investigation, students were asked to provide their aggregated academic scores of all subjects for their last semester at lower secondary school..

Students' behaviour (Variable BEHAV)

In Vietnam each semester students are given a "score" for their behaviour during semester. Students' behaviour scores range from very good to poor. In this study, students' behaviour is defined through the behaviour scores given to students each semester.

Withdrawal status (Variable WITHDRAW)

Students who remained at school in March 2001 were defined as continuing students and coded as 1. All students who left school before completing Year 9 were defined as withdrawal students and coded as 2.

The location and the sample of the investigation

The location

In Vietnam early withdrawal from school mainly occurred in rural and mountainous areas but was not an issue for urban areas. In the light of that fact, this investigation was intended to take place in a rural mountainous area. It was also desirable to select a school with children from various ethnic and socio-economic backgrounds. As a result, Thanh Hai and Quy Son schools in Luc Ngan District, Bac Giang Province were chosen to be involved in the investigation.

The sample

The number of students invited to be involved in the study was as presented in Table 1.

Table 1: Parents and students invited to be involved in the study

	Number
Year 9 Students	377
Early Withdrawal Students	255

The number of parents and students actually participating in the study after following up with non-respondents is presented in Table 2.

Table 2: Parents and students participating in the study

	Number	Proportion
Year 9 Students	365	96.8%
Early Withdrawal Students	234	91.7%

Questionnaires

To answer the research questions of the project, a set of student and parent questionnaires were developed. The item pool comprised approximately 30 items, requiring approximately 15 minutes for students and seven minutes for parents to complete.

Separate questionnaires were designed for continuing and withdrawal students and their parents

Results

Data analysis approach

The hypothetical model of this investigation (Figure 1) was based on thorough considerations of the previous research, including the author's research on early withdrawal from school, and includes structural (causal) relations between variables such as FSB, FW, ETHNIC, SIZE, SIB, PA, SA, ACADE, BEHAV and WITHDRAW. Variable FSB, family social background, was hypothesised as a latent construct. The variables FOC, MOC, FED, MED are the measurement indicators for the latent construct, family social background. Therefore, to test the relationships between variables specified in the model presented in Figure 1, SEM was applied as SEM is a comprehensive approach to testing the hypotheses about relations among observed and latent variables (Bolen, 1989; Hoyle, 1995; Pedhazur and Schmelkin, 1991).

The saturated model of students' withdrawal

To test the hypothetical SEM model presented in Figure 1, the full saturated SEM model with error terms was specified and provided in Figure 2.

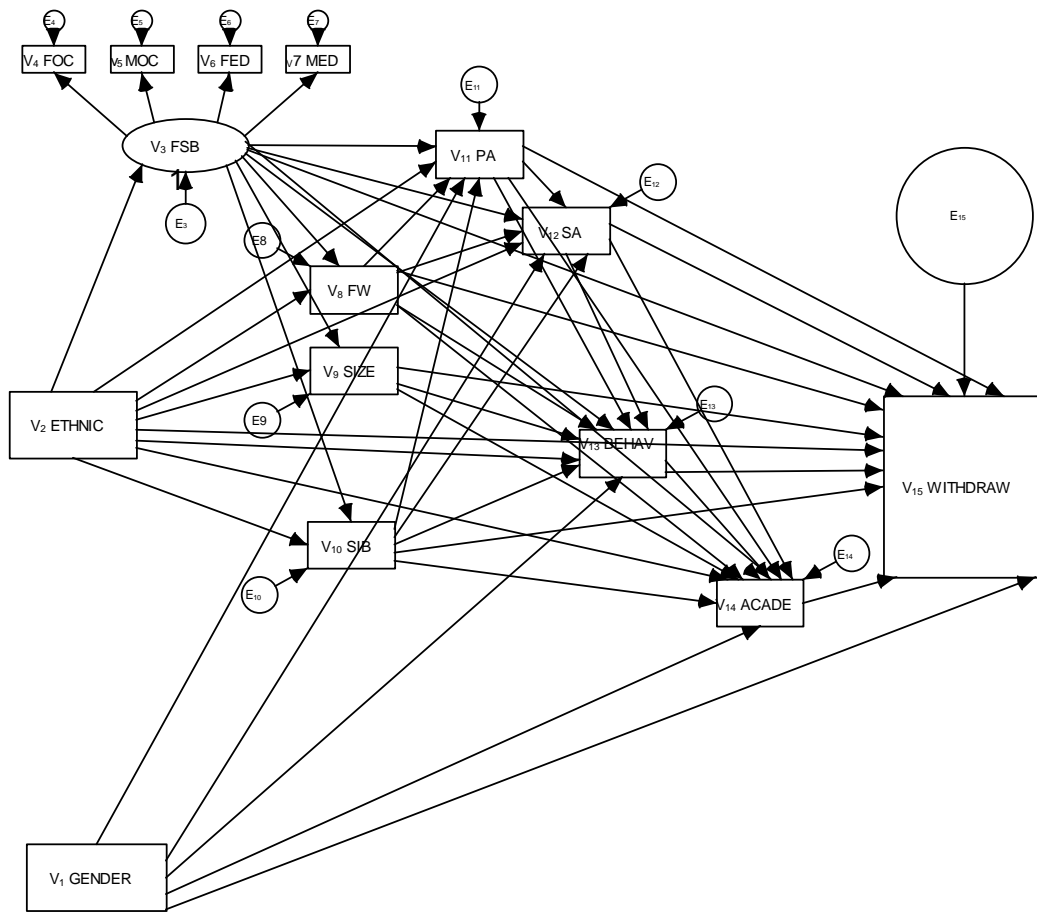


Figure 2: Full saturated SEM model of the influences of gender, family characteristics, attitudes and achievement on withdrawal from school

Examination of the measurement model

Before the measurement equations are presented, the codes of variable names are presented in Table 3.

Table 3: Code of variable name

Variables	Names	Code
Student gender	GENDER	V ₁
Ethnic background of students	ETHNIC	V ₂
Family social background	FSB	V ₃
Fathers' occupation	FOC	V ₄
Mothers' occupation	MOC	V ₅
Fathers' education	FED	V ₆
Mothers' education	MED	V ₇
Family wealth	FW	V ₈
Number of children in the family	SIZE	V ₉
Siblings' withdrawal status	SIB	V ₁₀
Parents' attitudes	PA	V ₁₁
Students' attitudes	SA	V ₁₂
Students' behaviour	BEHAV	V ₁₃
Students' academic achievement	ACADE	V ₁₄
Students' withdrawal	WITHDRAW	V ₁₅

The EQS program was employed to conduct the analysis of SEM. Table 4 displays the standardised factor loadings and the proportion of variance of each indicator variable that was accounted for by the latent construct, as well as their measurement error.

Table 4: Extracted variance and measurement error of indicator variables of the latent construct FSB

Measurement Indicators	Factor Loading	Extracted Variance	Residual Variance
Fathers' occupation (FOC)	0.398	15.8%	84.2%
Mothers' occupation (MOC)	0.459	21.1%	78.9%
Fathers' education (FED)	0.603	36.4%	63.6%
Mothers' education (MED)	0.695	48.3%	51.7%

The loading of the variables, fathers' occupation (FOC) and mothers' occupation (MOC), on family social background (FSB) was not high: 0.398 and 0.459 respectively. This is explained by the lack of variance in these variables, as discussed in the previous chapter. The loadings of variables, fathers' education (FED) and mothers' education (MED), were higher than that of the variables, fathers' occupation and mothers' occupation: they were 0.603 and 0.695 respectively. The section "measurement equations, standard errors, and test statistics" of the EQS output showed that the indicator variables FOC, MOC, FED, and MED, significantly loaded on the latent variable FSB as all the t-value of the estimate were greater than 1.96. According to Joreskog and Sorbom (1993), a t-value greater than 1.96 is considered an indication of good parameter estimate. This critical value is was used with each hypothesis tested.

Examination of the structural model

The next step in testing the relationships between the variables specified in the model was to examine the pattern of causal structure linking the exogenous, endogenous and dependent variables. EQS was employed to find the goodness of fit of the model and estimate the structural coefficients and measurement errors.

Model fit

In assessing whether the sample data fits or is adequately described by the hypothesised model, examination of overall model goodness of fit criteria, the EQS standard residuals, and the fit of individual parameters in the model was undertaken. Table 5 summarises the overall model fit indices.

Table 5: Goodness of fit summaries and interpretation

GOF Criterion	Value	Interpretation
Model fit		
Goodness of fit (GFI)	0.952	<i>GFI ranges from 0 to 1. Value close to 0.90 reflects a good fit.</i>
Adjusted goodness of fit (AGFI)	0.894	<i>AGFI ranges from 0 to 1. Value close to 0.90 reflects a good fit.</i>
Root Mean Square Residual (RMR)	0.039	<i>Value less than 0.05 indicates a good model fit (or indicates the closeness of the implied covariance matrix to the observed covariance matrix).</i>
Root-mean-square error of approximation (RMSEA)	0.078	<i>Value less than 0.10 indicates a good fit to the data.</i>
Model comparison		
Comparative Fit Index (CFI)	0.908	<i>CFI ranges from 0 to 1. Value close to 0.90 reflects a good fit (or the model is 90.8% better fitting than the null (poor fit) model).</i>
Bentler-Bonett Normed Fit Index (NFI)	0.888	<i>NFI ranges from 0 to 1. Value close to 0.90 reflects a good fit (or the model is 88.8% better fitting than the null (poor fit) model).</i>
Bollen Incremental Fit Index (IFI)	0.910	<i>IFI ranges from 0 to 1. Value close to 0.90 reflects a good fit</i>

All of the fit indices such as LISREL GFI, LISREL AGFI, CFI, and IFI were very close to the value of 0.9, which was considered good fit to the data (Schumacker and Lomax, 1996). The RMR value was 0.039 which was approximately smaller than 0.050, the value of good fit to the data. In relation to the value of RMSEA, 0.078, Steiger (1990) pointed out that RMSEA values below 0.10 indicated a good fit to the data. Thus, the model fit indices such as GFI, AGFI, RMR, and RMSEA suggested that there was not significant difference between the fitted covariance matrix (model) and the sample covariance matrix obtained from the observed data. The model comparison fit indices such as CFI, NFI, IFI, suggested that the model hypothesised is better than some of the competing models. That is, both the model fit indices and the model comparison fit indices suggested that the hypothesised model had a good fit to the data.

The direct, indirect, and total effects of variables in the saturated model

Table 6 reports the direct, indirect and total effects of factors in the saturated model on the variable WITHDRAW.

Table 6: Solution to the saturated model showing standardised direct, indirect and total effect

<i>V₁ Gender (GENDER) on</i>	<i>Direct Effect (β)</i>	<i>Indirect Effect</i>	<i>Total Effect</i>
V₁₁ Parents' attitudes (PA)	-0.158	-----	-0.158
V₁₂ Students' attitudes (SA)	-0.025	-0.109	-0.134
V₁₃ Behaviour (BEHAV)	0.283	-0.016	0.267
V₁₄ Students' academic achievement (ACADE)	0.040	0.097	0.137
V₁₅ Students' withdrawal (WITHDRAW)	0.109	0.058	0.167
<i>V₂ Ethnicity (ETHNIC) on</i>	<i>Direct Effect (β)</i>	<i>Indirect Effect</i>	<i>Total Effect</i>
V₃ Family social background (FSB)	-0.332	-----	-0.332
V₈ Family wealth (FW)	-0.058	-0.138	-0.196
V₉ Number of children (SIZE)	0.226	0.122	0.348
V ₁₀ Siblings' withdrawal status (SIB)	-0.082	0.065	-0.017
V₁₁ Parents' attitudes (PA)	0.135	-0.119	0.015
V ₁₂ Students' attitudes (SA)	-0.021	-0.012	-0.033
V ₁₃ Behaviour (BEHAV)	0.044	-0.015	0.029
V ₁₄ Students' academic achievement (ACADE)	0.067	-0.038	0.029
V₁₅ Students' withdrawal (WITHDRAW)	-0.126	0.089	-0.037

Note: Figures in bold represent significant effects beyond the $p < 0.05$ level; dashed lines (----) represent zero effect.

Table 6: Solution to the saturated model showing standardized direct, indirect, and total effect (continued)

<i>V₃ Family social background (FSB) on</i>	<i>Direct Effect</i>	<i>Indirect</i>	<i>Total</i>
	<i>(β)</i>	<i>Effect</i>	<i>Effect</i>
V₈ Family wealth (FW)	0.416	-----	0.416
V₉ Number of children (SIZE)	-0.367	-----	-0.367
V₁₀ Siblings' withdrawal status (SIB)	-0.196	-----	-0.196
V₁₁ Parents' attitudes (PA)	0.237	0.085	0.322
V ₁₂ Students' attitudes (SA)	0.027	0.251	0.278
V ₁₃ Behaviour (BEHAV)	0.043	0.034	0.077
V ₁₄ Students' academic achievement (ACADE)	0.097	0.153	0.250
V₁₅ Students' withdrawal (WITHDRAW)	-0.171	-0.252	-0.424
<i>V₈ Family wealth (FW) on</i>	<i>Direct Effect</i>	<i>Indirect</i>	<i>Total</i>
	<i>(β)</i>	<i>Effect</i>	<i>Effect</i>
V₁₁ Parents' attitudes (PA)	0.205	-----	0.205
V₁₂ Students' attitudes (SA)	0.069	0.141	0.210
V ₁₃ Behaviour (BEHAV)	0.003	0.022	0.025
V₁₄ Students' academic achievement(ACADE)	0.105	0.060	0.165
V₁₅ Students' withdrawal (WITHDRAW)	-0.228	-0.111	-0.339
<i>V₉ Number of children (SIZE) on</i>	<i>Direct Effect</i>	<i>Indirect</i>	<i>Total</i>
	<i>(β)</i>	<i>Effect</i>	<i>Effect</i>
V ₁₅ Students' withdrawal (WITHDRAW)	-0.019	-----	-0.019

Note: Figures in bold represent significant effects beyond the p<0.05 level; dashed lines (----) represent zero effect.

Table 6: Solution to the saturated model showing standardised direct, indirect and total effect (continued)

<i>V₁₀ Siblings' withdrawal status (SIB) on</i>	<i>Direct Effect (β)</i>	<i>Indirect Effect</i>	<i>Total Effect</i>
V ₁₅ Students' withdrawal (WITHDRAW)	0.008	-----	0.008
<i>V₁₁ Parents' attitudes (PA) on</i>	<i>Direct Effect (β)</i>	<i>Indirect Effect</i>	<i>Total Effect</i>
V₁₂ Students' attitudes (SA)	0.689	-----	0.689
V ₁₃ Behaviour (BEHAV)	0.064	0.029	0.093
V₁₄ Students' academic achievement (ACADE)	0.160	0.095	0.255
V₁₅ Students' withdrawal (WITHDRAW)	-0.281	-0.089	-0.370
<i>V₁₂ Students' attitudes (SA) on</i>	<i>Direct Effect (β)</i>	<i>Indirect Effect</i>	<i>Total Effect</i>
V ₁₃ Behaviour (BEHAV)	0.042	-----	0.042
V ₁₄ Students' academic achievement (ACADE)	0.071	0.021	0.092
V ₁₅ Students' withdrawal (WITHDRAW)	-0.044	-0.019	-0.063
<i>V₁₃ Behaviour (BEHAV) on</i>	<i>Direct Effect (β)</i>	<i>Indirect Effect</i>	<i>Total Effect</i>
V₁₄ Students' academic achievement (ACADE)	0.494	-----	0.494
V₁₅ Students' withdrawal (WITHDRAW)	0.180	-0.146	0.034
<i>V₁₄ Students' academic achievement (ACADE) on</i>	<i>Direct Effect (β)</i>	<i>Indirect Effect</i>	<i>Total Effect</i>
V₁₅ Students' withdrawal (WITHDRAW)	-0.295	-----	-0.295

Note: Figures in bold represent significant effects beyond the $p < 0.05$ level; dashed lines (----) represent zero effect.

The variables, GENDER, ethnicity (ETHNIC), family social background (FSB), family wealth (FW), parents' attitudes (PA), and students' behaviour (BEHAV), have both direct and indirect effects on students' withdrawal (WITHDRAW). The variable, students' academic achievement (ACADE), had a direct effect on students' withdrawal. The total effects of variables, ethnicity (ETHNIC) and students' behaviour (BEHAV), on students' withdrawal are very small and not significant. However, as the direct effects of these variables on students' withdrawal are significant, these variables are still included in the model with significant paths. The variables, "number of children in the family (SIZE)", "siblings' withdrawal status (SIB)" and "students' attitudes (SA)," did not have any effect on students' withdrawal. Thus, these three variables and insignificant paths were excluded from the saturated model, to form a model with significant paths, which will be examined in the next section.

Model with significant paths

As a result of the examination of the saturated model presented in Figure 2, the model with significant paths was developed. This section reports the examination of the model with significant paths. The extent to which each variable influences students' withdrawal, as well as the way they interact with other variables, are also presented.

The model

Model with significant paths is presented in Figure 3.

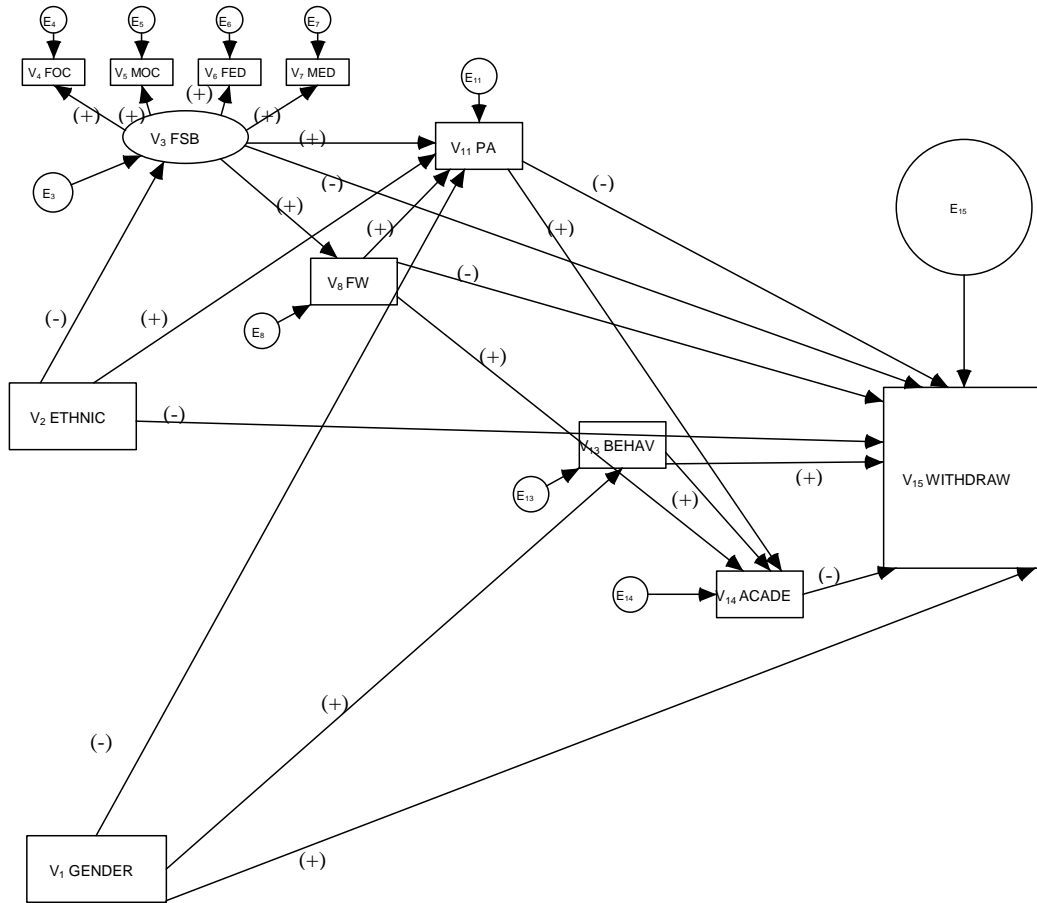


Figure 3: Model with significant paths

Examination of the measurement model

The total common factor variance for POES which is calculated by squaring the factor loading of each indicator variable, summing them, and then dividing the sum by 4, is presented in Table 7.

Table 7: Extracted variance and measurement error of indicator variables of the latent construct FSB

Measurement Indicators	Factor Loading	Extracted Variance	Residual Variance
Fathers' occupation (FOC)	0.421	17.8%	82.2%
Mothers' occupation (MOC)	0.450	20.2%	79.8%
Fathers' education (FED)	0.631	39.8%	60.2%
Mothers' education (MED)	0.647	41.9%	58.1%

Table 7 shows that indicator variables of the latent variable parents' occupation educational status (POES) explained only 29.93% of the variance of the variable parents' occupation educational status (POES).

Examination of the structural model

Model fit

Table 8 summarises the overall model fit indices of the model with significant paths.

Table 8: Goodness of fit summaries and interpretation

GOF Criterion	Value	Interpretation
Model fit		
Goodness of fit (GFI)	0.947	<i>GFI ranges from 0 to 1. Value close to 0.90 reflects a good fit.</i>
Adjusted goodness of fit (AGFI)	0.898	<i>AGFI ranges from 0 to 1. Value close to 0.90 reflects a good fit.</i>
Root Mean Square Residual (RMR)	0.029	<i>Value less than 0.05 indicates a good model fit (or indicates the closeness of the implied covariance matrix to the observed covariance matrix).</i>
Root-mean-square error of approximation (RMSEA)	0.089	<i>Value less than 0.10 indicates a good fit to the data.</i>
Model comparison		
Comparative Fit Index (CFI)	0.877	<i>CFI ranges from 0 to 1. Value close to 0.90 reflects a good fit (or the model is 87.7% better fitting than the null (poor fit) model).</i>
Bentler-Bonett Normed Fit Index (NFI)	0.857	<i>NFI ranges from 0 to 1. Value close to 0.90 reflects a good fit (or the model is 85.7% better fitting than the null (poor fit) model).</i>
Bollen Incremental Fit Index (IFI)	0.879	<i>IFI ranges from 0 to 1. Value close to 0.90 reflects a good fit</i>

Both the model fit indices and the model comparison fit indices suggest that the hypothesised model had a good fit to the data.

The direct, indirect and total effects of each variable on the other variables and the variance of students' withdrawal explained by each variable

Table 9: Solution to the model with significant paths showing standardised direct, indirect and total effect

<i>V₁ Gender (GENDER) on</i>	<i>Direct Effect</i> <i>(β)</i>	<i>Indirect</i> <i>Effect</i>	<i>Total</i> <i>Effect</i>
V₁₁ Parents' attitudes (PA)	-0.157	-----	-0.157
V₁₃ Behaviour (BEHAV)	0.260	-----	0.260
V₁₅ Students' withdrawal (WITHDRAW)	0.112	0.065	0.177
<i>V₂ Ethnicity (ETHNIC) on</i>	<i>Direct Effect</i> <i>(β)</i>	<i>Indirect</i> <i>Effect</i>	<i>Total</i> <i>Effect</i>
V₃ Family social background (FSB)	-0.333	-----	-0.333
V₁₁ Parents' attitudes (PA)	0.143	-0.120	0.023
V₁₅ Students' withdrawal (WITHDRAW)	-0.131	0.092	-0.039
<i>V₃ Family social background (FSB) on</i>	<i>Direct Effect</i> <i>(β)</i>	<i>Indirect</i> <i>Effect</i>	<i>Total</i> <i>Effect</i>
V₈ Family wealth (FW)	0.472	-----	0.472
V₁₁ Parents' attitudes (PA)	0.276	0.085	0.361
V₁₅ Students' withdrawal (WITHDRAW)	-0.178	-0.257	-0.435

Note: Figures in bold represent significant effects beyond the p<0.05 level; dashed lines (----) represent zero effect.

Table 9: Solution to the model with significant paths showing standardised direct, indirect and total effect (continued)

<i>V₈ Family wealth (FW) on</i>	<i>Direct Effect</i> <i>(β)</i>	<i>Indirect</i> <i>Effect</i>	<i>Total</i> <i>Effect</i>
V₁₁ Parents' attitudes (PA)	0.179	-----	0.179
V₁₄ Students' academic achievement (ACADE)	0.135	0.041	0.176
V₁₅ Students' withdrawal (WITHDRAW)	-0.220	-0.107	-0.327
<i>V₁₁ Parents' attitudes (PA) on</i>	<i>Direct Effect</i> <i>(β)</i>	<i>Indirect</i> <i>Effect</i>	<i>Total</i> <i>Effect</i>
V₁₄ Students' academic achievement (ACADE)	0.228	-----	0.228
V₁₅ Students' withdrawal (WITHDRAW)	-0.302	-0.068	-0.371
<i>V₁₃ Behaviour (BEHAV) on</i>	<i>Direct Effect</i> <i>(β)</i>	<i>Indirect</i> <i>Effect</i>	<i>Total</i> <i>Effect</i>
V₁₄ Academic score (ACADE)	0.517	-----	0.517
V₁₅ Students' withdrawal (WITHDRAW)	0.181	-0.155	0.026
<i>V₁₄ Academic score (ACADE) on</i>	<i>Direct Effect</i> <i>(β)</i>	<i>Indirect</i> <i>Effect</i>	<i>Total</i> <i>Effect</i>
V₁₅ Students' withdrawal (WITHDRAW)	-0.300	-----	-0.300

Note: Figures in bold represent significant effects beyond the $p < 0.05$ level; dashed lines (----) represent zero effect.

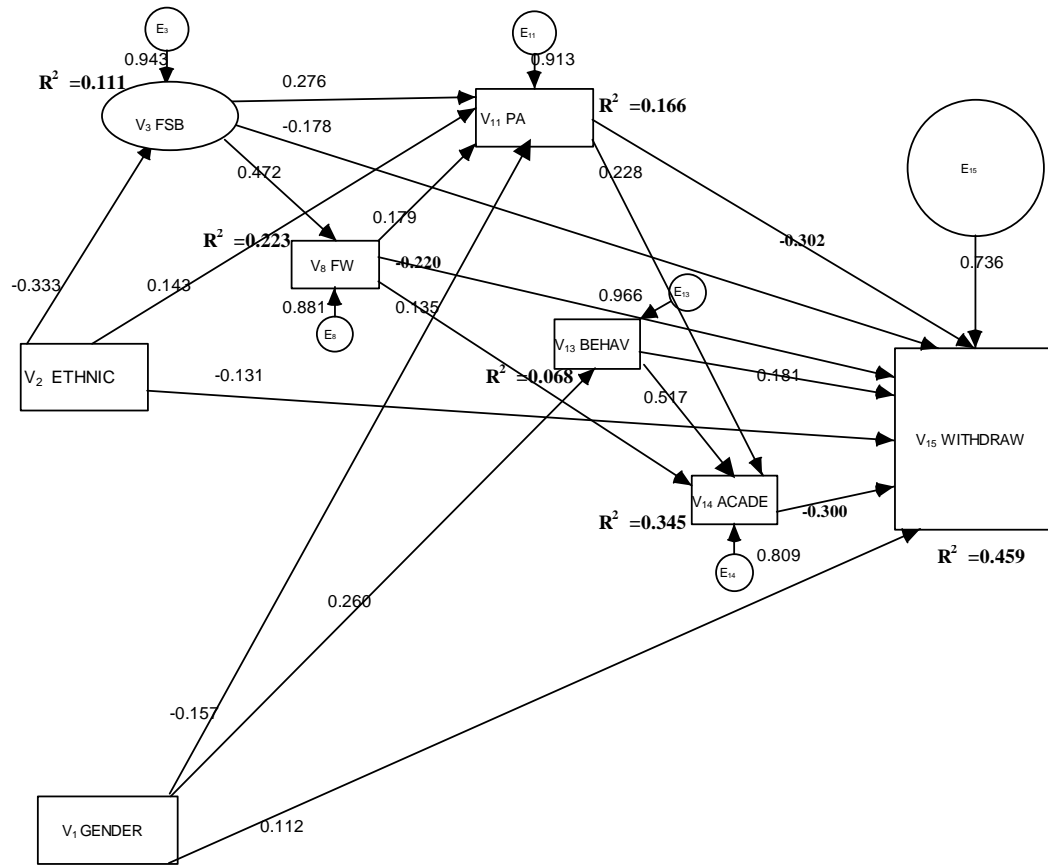


Figure 4: Solution to the model with significant paths

Table 10: Variance of students' withdrawal explained by each variable in the model

Model	Variable added	t- value	Proportion of variance in WITHDRAW (R ²) explained by the model (%)	Proportion of variance in WITHDRAW (R ²) explained by the variable (%)
1	Ethnicity (ETHNIC)	-1.291	0.3	0.3
2	Gender (GENDER)	5.254	4.5	4.2
3	Family social background (FSB)	-6.348	20.3	15.8
4	Family wealth (FW)	-7.313	29.3	9.0
5	Parents' attitudes (PA)	-11.337	41.5	12.2
6	Students' behaviour (BEHAV)	-0.904	41.9	0.4
7	Students' academic achievement (ACADE)	-7.993	45.9	4.0

The Influences on students' withdrawal

Gender

Students' gender had both direct and indirect effects on students' withdrawal. The direct effect, $\beta_{15.1}=0.112$, ($t=3.516$), suggests that at the same level of parents' attitudes and students' behaviour scores, female students tended to be more likely to withdraw from lower secondary education than their male peers. The indirect effect of gender on students' withdrawal was mediated through parents' attitudes and students' behaviour and was in the same direction as the direct effect ($I_{15.1}=\beta_{11.1} \cdot \beta_{15.11} + \beta_{13.1} \cdot \beta_{15.13}=0.065$, $t=3.736$). This suggests that where the parents of female students appeared to believe less in the potential of school to help students develop and provide them with opportunities in future, and the female students behaved better than their male peers, there was an increased likelihood of the female students' withdrawal from lower secondary education. In particular, parents of female students had less belief in the potential of school to help their daughters develop and to provide their daughters with opportunities in the future. Students whose parents had less positive attitudes were more likely to withdraw. In addition, female students achieved significantly higher scores in behaviour than their male peers. Those who had higher behaviour scores were more likely to withdraw. As a result, parents' attitudes and students' behaviour significantly contribute to the effect of gender on students' withdrawal. While the fact that female students behaved better than male students was consistent with the literature, it is surprising here that students who had better behaviour were more likely to withdraw from school than those with worse behaviour. This will be discussed later in this chapter, in the section on behaviour.

Students' gender explains 4.2 percent of the variance in students' withdrawal ($R^2=0.042$).

The evidence from the two communes, Thanh Hai and Quy Son, suggests that female students were disadvantaged in relation to school retention. This disadvantage becomes more serious because of the less positive attitudes towards schooling among female students' parents compared to those of males, and female students having higher behaviour scores than male students.

For the first time in Vietnam, the relative strength of disadvantage caused by gender in comparison with other variables has been explored. The direct effect of students' gender on students' withdrawal was less than a half that of students' achievement, parents' attitudes, and close to a half of the direct effect of family wealth, on students' withdrawal. The relative strength of the effect of gender on students' withdrawal and the variance in students' withdrawal explained by gender are important in the investigation of the relationship between gender and students' withdrawal. Although the contribution due to gender was not large, the finding has important implications for educational practices. First, female participation in the Thanh Hai and Quy Son can be increased if parents' attitudes towards the value of school for female students can be improved. Second, it opens a new area for further investigation: reasons for female students with good behaviour scores withdrawing from school.

The result was consistent with the data from the last household surveys in Vietnam that females' enrolment is lower than that of males. This finding was also consistent

with the finding reported by Nguyen (1998) in Hong Chau and Tho Tang that female students were more likely to withdraw from lower secondary school than their male peers. While neither studies could be generalised due to the sampling framework, similar patterns found in different areas (midland and mountainous areas) and at different times suggests that, in rural Vietnam, female students experience educational disadvantage at lower secondary level. The fact that parents may not have a belief in the potential of school to help their daughters develop and provide them with opportunities in the future leads to female students' withdrawal from lower secondary school. The educational disadvantage of female students in comparison with males in lower secondary education was similar to that in secondary education in Australia over the period from the 1930s to the early 1970s, when a greater proportion of males completed Year 12 (Williams *et al.*, 1993) and is unlike the situation in the 1980s and 1990s, when males were more likely to withdraw from school than females. Williams *et al.* (1993) attributed the gender advantage of female students in Australia to the effect of the emphasis placed on gender equity over the past decades. Vietnam has launched a similar campaign for gender equity but research results demonstrate that there is still a gender gap in school participation. Given the unstable status of females in education over time, and across countries, more research is needed to explore the relationship between gender and students' withdrawal. For Vietnam, the effect of gender on withdrawal should be examined at other education levels and across the country to find solutions to provide equal opportunity for female students.

Ethnicity

Table 9 reports both direct and indirect effects of ethnicity on students' withdrawal. The relative strength of the direct effect of the variable ethnicity on students' withdrawal was $\beta_{15,2} = -0.131$, ($t = -3.849$). This indicated that when other things were equal, students from Kinh background were more likely to withdraw from school early than students from other ethnic backgrounds. The indirect effect of ethnicity on students' withdrawal was $I_{15,2} = \beta_{3,2} \cdot \beta_{15,3} + \beta_{11,2} \cdot \beta_{15,11} = 0.092$, ($t = 3.208$). A higher level of family social background of the Kinh groups led to the observation that the indirect effect of ethnicity on students' withdrawal was in the opposite direction to the direct effect. As a result the total effect of ethnicity on students' withdrawal was marginal. The interaction of these factors was complicated. This resulted in the observation that ethnicity did not appear to explain differences in students' withdrawal despite a direct effect of ethnicity on students' withdrawal. Table 10 shows that ethnicity only explains 0.3 percent of the variance in students' withdrawal ($R^2 = 0.003$).

In this section, it is suggested that ethnicity had a direct effect on family social background, that is, the typical Kinh students tended to have a higher level of family social background than the typical ethnic minority students. Ethnicity has both direct and indirect effects on parents' attitudes. However, there was no difference between the attitudes of the typical Kinh parents and the typical parents from ethnic minority groups. Similarly, ethnicity has both direct and indirect effect on students' withdrawal. However, when allowing for interactions, there was no significant total effect of ethnicity on students' withdrawal.

The analysis disclosed an important and often hidden mode of interaction between ethnicity and family social background in influencing students' withdrawal. First, there was no evidence that the typical ethnic minority students who had a lower level of family social background than that of the Kinh were more likely than the typical Kinh students to withdraw from school. Second, other things being equal, ethnic minority students' parents were more likely to have more positive attitudes towards schooling, and ethnic minority students were less likely than Kinh students to withdraw from school. Third, the non-typical Kinh students who had a low level of family social background were more likely than the non-typical ethnic minority students who had a high level of family social background to have more negative attitudes towards schooling and to withdraw from school.

Family social background (FSB)

Family social background had both direct and indirect effects on students' withdrawal. The magnitude of the direct effect was $\beta_{15.3} = -0.178$ ($t = -3.304$). This suggests that, when other things were equal, students whose parents had a low level of family social background were more likely to withdraw from lower secondary school than those whose parents had a higher level of social background. The indirect effect of family social background on students' withdrawal is $I_{15.3} = \beta_{8.3} \cdot \beta_{15.3} + \beta_{11.3} \cdot \beta_{15.11} = -0.257$, that is, the magnitude of the indirect effect was almost 1.5 times that of the magnitude of the direct effect. Hence, while the magnitude of the direct effect of family social background on students' withdrawal was not as large as those of students' academic achievement, parents' attitudes and family wealth, that of the total effect was large. In addition, the indirect effect of family social background on students' withdrawal was more important than that of the indirect effect. This suggested that parents' positive attitudes and a high level of family wealth contributed significantly to the fact that students whose parents had a higher level of family social background were less likely to withdraw from school before completion of lower secondary education.

The proportion of variance of students' withdrawal explained by family social background is 15.8 percent ($R^2 = 0.158$, $t = -6.348$). The proportion of explained variance in students' withdrawal contributed by family social background shows the importance of family social background in the decision of students to withdraw or to continue lower secondary education.

In summary, family social background had both direct and indirect effects on students' withdrawal. The indirect effect was mediated via parents' attitudes and family wealth and was more important than the direct effect.

Family wealth (FW)

Family wealth was significantly influenced by ethnicity and family social background. In turn, family wealth had a direct effect on parents' and students' attitudes towards schooling and students' academic achievement. These variables, parents' attitudes and students' academic achievement contributed to the magnitude of the indirect

effect of family wealth on students' withdrawal. Family wealth had both direct and indirect effect on students' withdrawal. The significant effect of family wealth on students' withdrawal meant that students from families with a low level of family wealth were more likely to withdraw from lower secondary school early than those from families with a high level of family wealth. This partly stems from the observation that their parents had less positive attitudes towards schooling and that these students did not gain academic achievements as high as those who were from families with a high level of family wealth.

Parents' attitudes (PA)

Parents' attitudes had significant effects, both direct and indirect, on students' withdrawal. The direct effect of parents' attitudes on students' withdrawal was $\beta_{15.11} = -0.302$ ($t = -8.541$), and is the highest compared to the other direct effects on students' withdrawal. This suggests that, when controlling for the effect of the mediating variable, students' academic achievement, the effect of parents' attitudes on students' withdrawal was strong, that is, students whose parents had more positive attitudes towards schooling were less likely to withdraw from lower secondary education. The indirect effect was $I_{15.11} = \beta_{14.11} \cdot \beta_{15.14} = -0.068$ ($t = -5.088$). This suggested that students' academic achievements also contributed significantly to the effect of parents' attitudes on students' withdrawal. This meant that high academic achievement among students whose parents had more positive attitudes towards schooling contributed to the observation that students whose parents had more positive attitudes towards schooling were less likely to withdraw from lower secondary education. However, the direct effect of parents' attitudes on students' withdrawal was much more important than the indirect effect. To minimise the effect of parents' attitudes on students' withdrawal, it is important to improve parents' attitudes, while raising students' academic achievement could result in the reduction of the effect of parents' attitudes. Table 10 indicates that the proportion of variance in students' withdrawal caused by parents' attitudes was 12.2 percent ($R^2 = 0.122$).

In summary, parents' attitudes were influenced by students' gender, family social background and family wealth. They, in turn, had an effect on students' academic achievement and ultimately students' withdrawal. While the effect was mainly direct, students' academic achievement contributed to the effect of parents' attitudes on students' withdrawal.

Students' behaviour (BEHAV)

Students' behaviour had both direct and indirect effects on students' withdrawal. The magnitudes of the direct and indirect effects of students' behaviour on students' withdrawal are $\beta_{15.13} = 0.181$ ($t = 4.907$) and $I_{15.13} = \beta_{14.13} \cdot \beta_{15.14} = -0.155$ ($t = -7.114$) respectively. This suggests that, when controlling for the mediating effect of students' academic achievement (or at the same level of academic achievement), there was a tendency for students with high behaviour scores to be more likely to withdraw from lower secondary school than those with lower behaviour scores. However, the indirect effect mediated via students' academic achievement weakened this tendency, as students who had high behaviour scores tended to have high academic achievement and hence were more likely to complete lower secondary education. As the indirect

and direct effects of students' behaviour on students' withdrawal almost counterbalanced each other, the total effect of students' behaviour on students' withdrawal (which was the sum of the direct and indirect effects) was very close to zero ($T_{15.13} = \beta_{15.13} + \beta_{14.13} \cdot \beta_{15.14} = 0.026$, $t = 0.904$) and not significant. This suggests that there was no difference in the likelihood of the typical low behaviour score students (who were more likely to have low academic achievement) and the typical high behaviour score students (who were more likely to have high academic achievement) to withdraw from school. The interaction between students' behaviour, academic achievement and students' withdrawal also suggests that students with low behaviour scores and high academic achievement were less likely to withdraw from school than students with high behaviour scores and low academic achievement.

Thus, while students' behaviour had both direct and indirect effects on students' withdrawal, the students' withdrawal did not depend on their behaviour scores. Students' behaviour accounted for only 0.4 percent of the variation in students' withdrawal ($R^2 = 0.004$).

Students' academic achievement (ACADE)

Students' academic achievement had a significant direct effect on students' withdrawal ($\beta_{15.14} = -0.300$, $t = -7.993$). This means that students with high academic achievement were less likely to withdraw from school early than those with low academic achievement. This suggests that improving academic achievement of low achievement students could result in a reduction in withdrawal rates in lower secondary schools in Thanh Hai and Quy Son. Students' academic achievement accounted for 4.0 percent of the variation in students' withdrawal ($R^2 = 0.040$).

The finding that lower achievement students were more likely to withdraw from school provides support for the contentions of Thai (1992) and Tran *et al.* (1994). In addition, the finding is in agreement with Dang's (1992) and Nguyen's (1998) suggestion of the influences of other factors on academic achievement. This investigation has gone further than previous research in Vietnam in revealing the relative strength and importance of the influence of students' academic achievement on withdrawal and the extent to which students' academic achievement was influenced by other factors. This finding supports the research results found in the US and Australia where academic achievement was reported as a strong predictor for early withdrawal from school (Marks and Fleming, 1999; Lamb, 1997; Lamb *et al.*, 1999; Rumberger, 1995). The confirmation of the strong direct effect of students' achievement on students' withdrawal indicates the role of the school in reducing early withdrawal rates.

Conclusion

It is clear that first, among factors of family characteristic categories, family social background and family wealth were important factors; second, parents' attitudes (but not students' attitudes) were important; third, academic achievement but not behaviour played an important role in explaining students' withdrawal; fourth, gender was an important factor associated to students' withdrawal.

The findings of these five important factors are of importance for educational policy as they directly illustrate the areas of priorities where intervention and prevention of early school withdrawal might be focused. Among these five variables, parents' attitudes, students' academic achievement and family wealth had relatively strong direct effects on students' withdrawal and were the strong mediating variables. Reducing the relative strengths of these variables might lead to reducing the likelihood of students' early withdrawal from school. Consequently, these three factors should be placed more attention and priorities.

Overall, factors reported above explained 45.9 percent of the variance in students' withdrawal. The investigation was conducted only in two communes in the Luc Ngan District, Bac Giang Province. Hence, there might be a limitation in generalising the findings to other settings. However, the survey in Thanh Hai and Quy Son provides in-depth understanding of the ways in which factors are interdependent and influence students' withdrawal in a Vietnamese rural mountainous context.

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