Household Economy, Local Contexts and Youth Schooling Trajectories in Kanchanaburi, Thailand

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INTRODUCTION

In both more and less developed societies, educational attainment is seen as a pivotal process whereby status positions are reproduced and social mobility across generations, if it is to occur, often takes root (Blau & Duncan 1967; Bowles & Gintis 1976). Education provides numerous direct social and economic benefits and educational attainment is a pivotal part of lifetime status attainment. On the other hand, low levels of education have been associated with becoming "trapped in poverty," even within contexts in which others tend to experience positive socioeconomic mobility over time (Woolard and Klasen 2005). Research across historical and geographic settings commonly reveals that educational expansion is rarely accompanied by a diminishment of educational disparities; rather, youth educational persistence and attainment continues to be significantly related to an adolescent's family and community of origin (Hernandes 2005; Hout and Raftery 1993; Jao and McKeever 2006; Rankin & Aytac 2006). Economic hardship in the origin family, and the associated demand for labor and lack of resources required to address the financial and opportunity costs of adolescent schooling, is a common driver of school attrition in developing societies. Thus, "persistent inequalities" in educational attainment across generations have been observed across a wide of national and regional contexts (Shavit & Blossfeld 1993). Also, in settings where labor market opportunities which demand advanced schooling are limited and out of reach, exits from schooling may reflect a choice by the youth and his/her parents to begin employment, given the nature of local opportunities and the limited benefits perceived through further investment in schooling. Following Roscigno and colleagues (2006), for families to invest precious resources of money or time into their children's education, they must perceive a connection between the investment and a child's wellbeing and future opportunities. Thus it follows that both household and community contexts, which unite to shape available resources and opportunity structures, inform decisions about youth educational investments, and hence shape processes of attainment and attrition. By examining the proximate determinants of school attrition among a cohort of Thai youth we hope to delineate how contexts and conditions encountered in adolescence influence school attrition, and hence give way to later life social mobility and socioeconomic outcomes (Beutel and Axinn 2002).

Despite rapid and significant levels of economic growth since the 1980s, Thailand's rates of school enrollment remained relatively low compared to other Southeast Asian nations until recently (World Bank 2006). Furthermore, in the recent era of rapid social and economic change, the gap in living standards separating individuals from poor, rural backgrounds and those from more affluent, urban settings has widened. In such a time, education is seen as one of the few routes for transcending socioeconomic gaps and achieving socioeconomic mobility. However, the financial and opportunity costs associated with schooling, as well as divergent labor market opportunities, mean that even secondary schooling, technically compulsory to grade 12 since the year 2004, remains elusive for many young people in Thailand. Furthermore, the perceived opportunity costs associated with schooling are likely to vary across Thai youth, depending upon the local and regional labor markets in which they are embedded.

Focusing on youth residing in 100 villages within Thailand's economically and ecological diverse province of Kanchanaburi, we examine the relationship between household economies, local economies and youth educational outcomes by utilizing a longitudinal, dynamic perspective to assess the individual, family and community level precedents of school attrition. In this paper we provide an in-depth analysis of time-variant, multidimensional features of household composition and household economy that dynamically shape youth schooling outcomes. We also examine the village-level labor market structures in which youth are embedded in order to discern how local work opportunities influence orientation to secondary school completion. Our analyses reveal that several nuanced, though frequently overlooked, features of household socioeconomic position and composition uniquely contribute to the risk of youth school attrition. In addition, place is relevant for educational investments; the local labor market structure exerts a unique impact on schooling investment and enrollment. Collectively, these analyses demonstrate the importance of deriving context-appropriate measurements of households of origin and community

contexts in order to accurately capture the resources and constraints drawn upon by youth and their families as they pursue continued formal education versus other life course pathways.

PREVIOUS RESEARCH ON SCHOOL ATTAINMENT & ATTRITION IN DEVELOPING REGIONS

Especially in countries undergoing economic development, youth education trajectories involve a sequential and dynamic decision-making process that hinges upon the direct and indirect, real and perceived, costs and benefits of persistently enrolling a child in school (Akhtar 1996). Following this line of reasoning, if education is deemed a valuable investment for individual growth and future economic opportunity, then drop-out or failure to enroll in schooling is a reflection of the economic standing of a youth's household, as well as the resources available to youth to invest in schooling, which are determined by the social standing of households, their economic position and demographic composition. Additionally, given the opportunity costs associated with school enrollment, which are constituted by both local and household economic conditions and opportunities, exits from school may reflect a decision by young adults and members of their households to shift from investment in formal human capital, to economic production activity and workforce-based forms of training and human capital development.

In developing societies, when families meet economic hardship early departures from schooling often arise when an adolescent's labor is needed, or is perceived as more valuable to the household economy than the long-term benefits of schooling (Suryahadi et al. 2005). Previous research on youth school enrollment and attainment in developing countries demonstrates that both direct costs and opportunity costs factor heavily in producing low school enrollment and retention rates (World Bank 1998). Even where schooling is "free" and compulsory, school enrollment exacts costs, in the form of fees for buildings, supplies, uniforms, etc., that can be prohibitive for poor families (Redmount 2002; Birdsall 1985). To date, limited attention has been focused upon the role of household borrowing and household debt on household members' livelihoods in general, and youth schooling trajectories in particular. In many developing countries, Thailand included, enhanced access to credit may alleviate the capital constraints experienced by households which often restrict youth access to schooling. Where households have access to credit, and thus are able to alleviate capital constraints and their exposure to risk, it follows that parents, especially those who value education by that meet financial difficulties, may be freer to invest in the education of their children (Brown 2006). Thus, it is important to consider a broad definition of the household context, one which attends to wealth, human capital, and household borrowing, as facets of household economy that shape the resource-constraint framework in which decisions about youth schooling progression are made.

Income, however, is not the only salient divide along which access to education is stratified in developing contexts. Research in China indicates that parental education, net of household wealth, exerts a positive impact on time and goods investments in children's schooling, suggesting that even when resources are constrained, relatively highly educated parents anticipate greater rewards and benefits to educating their children than do their less educated counterparts (Brown 2006). And, in societies characterized by ethnic division social class is commonly intertwined with ethnicity, thus contributing to marked disparities in educational attainment by ethnicity as well (Jao & McKeever 2006). Aside from recent analyses demonstrating disparities by region (the Muslim-dominated provinces of Southern Thailand vs. Central, Northern and Northeastern Thailand), limited evidence on the relationship between ethnicity, socioeconomic position and schooling attrition has been gathered for contemporary Thailand (Pattaravanich et al. 2005).

Another robust finding is that which links school attainment with sibship size, positing that larger sibships dilute educational resources available to children within households (Blake 1989). While varying by context and individual characteristics such as gender and religious background (e.g., Fuller and Liang 1999; Gomes 1984; Lloyd and Gage-Brandon 1994; Shavit & Pearce 1991), the finding that large sibship size lowers the odds of advancing in the education system has been widely observed across cultures

(Downey 1995; Rankin and Aytac 2006). The generally negative relationship between sibship size and educational attainment has been observed in the Thai setting (Knodel and Wongsith 1991; Williams et al. 1997; Curran et al. 2004) and elsewhere in Southeast Asia (e.g., Anh et al. 1998). However, while previous research has highlighted sibship size and sibling competition for limited educational resources within families, there has been relatively little exploration of other features of household structure that may bear upon the decision-making processes and resources within households pertinent to youth school persistence and drop-out. Shavit and Pierce (1991) provide a notable exception to this overall pattern; their research, which investigates the interaction between sibship size and extended kinship arrangements, indicates that youth schooling attainment among Arab and Jewish populations is impacted not only by sibship size, and sibling competition, but also by household form. The presence of extended kin, in particular elders who bring economic and social resources to households, can reinforce schooling attainment, controlling for other household-level resources. Given the prevalence of extended family and skipped generation households in Thailand, we question whether co-resident family elders might provide resources and features of residential context that serve to reinforce youth persistence in the education system. Grandparents and other co-resident elders may provide labor to aid the household economy and thus alleviate the opportunity costs associated with youth school attendance. The presence of family elders may also widen the youth's social support network, serve as a positive form of reinforcement and encouragement, or generate additional supervision in the case where parents have become heavily involved in work activity or have migrated elsewhere to seek work. In other words, while large numbers of siblings may dilute material and social resources within families, other aspects of family structure – including the presence of grandparents – influence the quantity and quality of resources that families can provide to fund children's educational pursuits (Roscigno & Ainsworth-Darnell 1999).

Parental absence, precipitated by labor migration, divorce, separation, and other forces, is an additional salient dimension of household composition relevant to youth development and status attainment processes. The migration of a parent often delivers remittances to cash-poor households and thereby can aid in funding schooling costs and diminish the pressure toward employing child labor (Zachariah et al. 2002; Curran 1995). On the other hand, the migration of a parent reduces parent-child proximity and emotional closeness, which may exert negative consequences upon a child's educational trajectory if parental absence weakens the supervision, social control, guidance and assistance thought to positively reinforce school attendance and continuity. The limited empirical research conducted on the subject of family member migration and youth schooling to date has yielded mixed results. In one study, also conducted in Thailand's Kanchanaburi province, Jampaklay (2006) finds that the gender of the absent parent and the length of absence are significant factors influencing children's school enrollment patterns. Specifically, Jampaklay observes that lengthy absences of mothers appear to exert a negative effect on children's school enrollments whiles fathers' absences have a trivial impact. Jampaklay also observes that receipt of remittances by households enhances youth odds of school enrollment, thus suggesting that migration operates through various distinct pathways to shape youth schooling trajectories. A recent analysis conducted in Matlab subdistrict of Bangladesh finds that both fathers' and brothers' migrations can have a positive effect on students' pace of school completion (Kuhn 2006). Kuhn does not address the gender of migrant family members because so few mothers and sisters of youth in Matlab district have had migration experience. In the Philippines, the absence of a child's mother tends to have a more disruptive effect than the absence of a father; children without their mothers present exhibited more behavioral problems, which in turn influenced school attendance and performance (Battistella & Conoco 1998). A series of other studies on this theme further suggest that the gender of the migrating parent is influential to this relationship, with mothers' absence from the household exerting a more negative effect on youth schooling outcomes (Joshi 2004; Amin 1998; Federici et al. 1993; Hugo 2000).

While one or both parents may live at a distance from their child for a variety of reasons, such as marital discord and disruption, or due to temporary and semi-permanent forms of labor migration, few scholars investigating the parental absence-child schooling relationship have disaggregated the reasons for parents'

absence from their children's households. In the present research we hope to address this empirical gap and in the process clarify the relationship between parental absence and youth schooling outcomes.

Educational investments across the developing world are highly gendered, and the Thai context is no exception; however, the relationship between child gender and school attainment is an evolving and complex one. The sources and consequences of persistent gender disparities in education remain a central focus of scholarship on educational disparities in the developing world. Gender inequities have shown to persist in the face of recent educational expansion in many developing countries (UNESCO 2004). Economic growth and rising living standards are often accompanied by a narrowing of gender-and class-based gaps. However, post-Mao era China is symbolic of the gender gaps that often remain in poor households of developing societies. For instance, in rural China the tendency for girls to drop out remains greater than that observed among boys, and sons continue to receive a disproportionate share of household education resources compared to daughters, especially in households most vulnerable to opportunity costs and financial constraints (Hannum and Xie 1994; Hannum 2005:292). While girls have historically been disadvantaged when vying for education resources within families, norms and expectations for schooling have undergone a transformation in Thailand in recent years in association with fertility decline and rising opportunities for women's labor force participation (Knodel 1997). That a transition is still underway is suggested by the mixed results on gendered educational disparities observed in recent research. While some scholars have observed that gender differences have abated or even changed direction (Curran et al. 2004; Knodel 1997; Knodel and Jones 1996), others observe that, especially where household economic resources remain particularly limited, parents continue to exercise a preference for educating sons as opposed to daughters, and their younger children over their elder children (Williams et al. 1997). The gendering of educational opportunities derives in large part due to gendered opportunities in the labor force and gender differentiated family obligations, such as responsibilities for providing childcare and support to aged parents. Development in certain regions of Thailand has generated numerous female-type jobs, especially in the services and manufacturing sectors, and has thus influenced incentives to advance the education of daughters. It follows that boys' and girls' schooling attainments will vary not only due to the structure and socioeconomic position of their origin households, but also due to the nature of work opportunities in their local milieus.

In both developed and less developed contexts, structures of local opportunity impact upon youth achievement and attainment. In the U.S., Roscigno and Crowley (2001:269) observe a form of "rural deprivation" in youth school outcomes that derives from spatial resource disparities and local work opportunities that disadvantage rural youth and that are consequential for family decisions about youth investment in schooling. Analyzing school dropout rates across rural and urban areas of the U.S., Roscigno and Crowley's spatial and household level analyses lead them to conclude that lack of opportunity in local settings contributes to detachment from education (2001: 272). The spatial patterning of employment opportunity, occasioned by industrial restructuring in advanced economies such as the U.S. (Roscigno et al. 2006), and by foreign-direct investment and indigenous development processes that have occasioned rapid development and degrees of diversification away from agriculture in middle-income countries like Thailand (Knodel 1997; Hawley 2004), creates pockets of advantage and disadvantage which filter down to the educational attainment process. Applying the same line of reasoning to youth in a developing country like Thailand, the costs of education must be assessed with reference to the potential pay-offs to be gained by investment in advanced schooling. The value attributed to schooling, and the willingness and ability of families and individuals to allocate resources to invest in schooling, is embedded in regional economic structures (Roscigno et al. 2006; Roscigno 1994). Previous research (e.g., Buchmann and Brakewood 2000; Gill 1991) points to the quantity and type of local labor market opportunities as fundamental to tradeoffs between child labor and schooling in develop societies, and decisive for decisions about educational investment.

To summarize our theoretical and analytical perspective, we view education investment decisions, which manifest in youth school persistence and attrition, as reflecting the constraints on resource availability in

families as well as proximate contextual influences that shape the quality and quantity of employment opportunities for persons with formal education in local settings (Roscigno et al. 2006).

EDUCATION & EDUCATION DISPARITIES IN THE THAI SETTING

Until recently, Thailand lagged behind many of its Southeast Asian counterparts in national levels of primary and secondary enrollment (Knodel 1997; United Nations 2003). However, in the past decade, several policies have been enacted which have altered the range of educational opportunities available to Thai youth, thereby raising secondary enrollment rates to a level that surpass many Southeast Asian countries (Hawley 2004). Continuing on several previous government efforts to expand education, the enactment of the National Education Plan of 1999 extended basic education to the upper secondary level (grades 10-12, or the equivalent) and a provision of the 1997 Thai constitution made 12 years of schooling compulsory. At the same time, child labor laws have been enacted that prohibited employment of children under age 15 (Pattaravanich et al. 2005). School expansion efforts have increased proximity to schools for rural households, a process that has been accompanied by increased levels of school enrollment, especially among girls, in rural and regionally marginalized areas of the country like the Northeast in recent decades (Curran et al. 2004).

However, early analyses of adherence to policy prescriptions and anecdotal evidence indicate that compulsory schooling legislation is not perfectly implemented or widely adhered to (World Bank 2006). Many Thai youth, especially those from impoverished, rural backgrounds, have not completed basic education to the upper secondary level. Premature exit from schooling, prior to completing compulsory years, has also been observed among disadvantaged youth in China – another setting where mounting school fees prove prohibitive for poor families (Brown 2006). Thus, significant inequities in educational attainment and enrollment, even at the secondary level, continue to divide Thai adolescents (Pattaravich et al. 2005; World Bank 1999). The secondary enrollment gap between youth from the wealthiest fifth and poorest fifth of households, while narrowing, remains substantial (see Figure One). In addition, disparities in the transition to and enrollment in tertiary schooling remain substantial. These enrollment disparities are reinforced by spatial disparities in returns to education; rural areas in Thailand continue to lag significantly behind urban areas, as do non-Central regions compared to the Central region, in workers' observed returns to education (Hawley 2004).

[Insert Figure One about here]

The work of several scholars has begun to elucidate the factors that underlie these disparities in the Thai context. Pattaravich et al. (2005) find that although the gender gap in upper secondary school attendance had closed by the year 2000 across Thailand (see also Knodel 1997), significant gaps persisted that disadvantaged youth from rural, poor and Southern Muslim backgrounds, as well as those with many siblings. This result is consistent with patterns observed across a wide range of developing countries wherein gender gaps are narrowing, but stratification by geography and socioeconomic status persists (Knodel and Jones 1996). Focus group interviews with parents about aspirations for educating sons and daughters suggests that enhanced access to local schools, flexibility in intergenerational care-giving and support relations, and the opening of labor force opportunities for both young men and women are among the factors leading to gender equality in schooling in Thailand (Knodel 1997).

Jampaklay (2006), examining data from the 2000 and 2003 waves of the Kanchanaburi Demographic Surveillance System (KDSS) finds that, aside from parental absence, household wealth, access to educational resources, and use of of non-Thai languages by household members, are among the factors that have a negative impact on school enrollment among Thai youth. Curran and colleagues' research in the Northeast district of Nang Rong, Buriram province, illustrates that youth in more recent birth cohorts, with smaller sibships, from households that receive remittances and that experience few resource limitations, and within communities where schools are in close proximity, are more likely to make the

transition from lower to secondary education (Curran et al. 2004; Curran & Saguy 2001). Pattaravich and colleagues (2005:578) refer to changed gendered labor market opportunities as one of the macro-level societal shifts contributing to the closure of the gender gap in secondary schooling.

RESEARCH QUESTIONS

Our objective is to delineate the relevant factors in youths' households and communities of origin which inform the resource and constraint framework in which youth and their families make decisions about school persistence and attrition. Specifically, we pose the following questions:

1. How do household composition & economic livelihoods influence youth schooling retention and persistence? Specifically, do household migration or household borrowing practices impact upon youth schooling trajectories? In addition, are youth in foreign-born families distinctly disadvantaged with respect to schooling persistence?

2. Does parental absence impact upon youth schooling persistence, and to what extent is the impact of parental absence conditioned by the gender and marital status of the resident parent? Also, related to compositional features of the youth's household, how does the incorporation of older adults in the household bear upon youth schooling trajectories?

3. Do short-term fluctuations in the economic position or membership of households influence patterns of school drop-out? For instance, how do parental departures from the household, by gender, inform schooling outcomes, and how does the changing wealth position of the origin household influence a youth's schooling trajectory?

DATA & METHODS

The data that we use to describe and analyze youth schooling patterns come from the Kanchanaburi Demographic Surveillance System (KDSS), an extensive data resource collected by staff of the Institute of Population & Social Research, Mahidol Univesity, and funded by the Wellcome Trust. The central task envisaged by the project entails the construction and maintenance of a database of field site communities consisting of 100 urban communities and villages in Kanchanaburi province. Beginning in June of 2000, KDSS staff conducted an annual census of households, and individuals age 15 and older within said households, in 100 rural villages and urban census blocks in Kanchanaburi province. This census was repeated in the years 2001, 2002, 2003 and 2004, thereby creating repeated measures on households and their members over a five year period. New and split households and their members in the designated 100 communities were incorporated into the KDSS each year; however, households and individual household members who moved away between survey years were not followed-up for continued interviews. In order to capture the ecological diversity of the province and incorporate meaningful ecological differences into the research design, the 100 communities for study were delineated through a stratified sampling of all communities in the province. The communities were randomly selected on a stratified basis, with strata defined by ecological and population features. Specifically, 20 study areas were chosen randomly from within each of five strata defined according to ecological and population criteria as follows: urban/semi-urban communities; communities in which irrigated rice fields predominate; communities in which cassava and sugarcane plantation cultivation predominates; communities in highlands districts; and communities with mixed economies, i.e., rural villages where the majority of households are engaged in non-agricultural activities. This approach yielded a set of 86 villages and 14 census blocks (see Figure Two).

Kanchanaburi, Thailand's second largest province, shares a lengthy, mountainous border with Myanmar. The social, economic and ecological diversity contained within the province, as well as the substantial

residential mobility among its residents, make Kanchanaburi a fertile ground for examining how socioeconomic circumstances and migration within families influence youth schooling transitions (Map – see Figure Three). In spite of, and in some ways a product of, several decades of rapid economic development, Thailand remains a nation marked by significant economic inequalities, with particular regions and rural areas being especially disadvantaged by development policies that have favored the nation's major cities and Central region. The significant size and diversity of Kanchanaburi incorporates many of the economic niches and lines of stratification that characterize Thailand as a whole. Kanchanaburi city and its semi-urban fringe have been the site of major manufacturing, tourism, and other industrial development in recent years. As such, segments of the study population residing in these areas occupy a geographic context that is very much a part of the Central Thai economic boom. However, the province also incorporates a range of mixed-economy villages, areas that have developed specialized forms of plantation agriculture, and remote villages where highland agriculture is practiced by a mix of Thai and ethnic minority peoples. In many ways, the social and economic structure and ecological variety of Kanchanaburi resembles a microcosm of the larger Thai society.

To model the determinants of school continuation and dropout using the KDSS requires that we adopt an approach that meshes with the demographic surveillance system approach to data collection. For instance, as the KDSS data collection focuses only on resident household members, we are not equipped to precisely assess children's sibship size or birth order since siblings who have moved away are not traced in the KDSS data collection. Furthermore, if parents are absent from the household at the point that data collection was initiated (in 2000) we lack information on their demographic and socioeconomic characteristics. As will be apparent from our discussion of the sample and measurement of independent variables, we are faced with deriving measures that capture household economy and demography, but which are informed by the DSS household-based approach. For instance, rather than delineate sibship size (which we cannot determine in cases where children have nonresident siblings), we adopt an analogous measure, based upon available data. Specifically, we consider the presence of other children in the index youth's household (who are usually, but not always, siblings). Similarly, we assess the composition of the youth's household by assessing the age, gender and relationships of persons enumerated in the household roster instrument. This is not to discount the importance of familial ties that extend outside of households, but rather is seen as a most suitable alternative to measuring family ties given the DSS framework and data collection approach.

The distinct advantage of the DSS approach is that it permits the creation of annualized, repeated measures, not only of youth schooling status, but also of household composition, household wealth, and other measures of household status. Designed to assess ongoing change at the community, household and individual level, the KDSS data allow us to examine how social and economic features of households and communities, even as they change from year to year, inform youth schooling transitions. As Buchmann and Hannum (2001) have elaborated, to enhance understanding of the factors that precipitate drop-out and other processes that produce inequality requires that researchers address the dynamics of social change, occurring at multiple levels of analysis, that inform the contexts within which decisions about girls' and boys' schooling are made. Thus, our models incorporate key features of household resources and structure, as well as the economic structures of village and urban neighborhood settings, which come together to shape the contexts in which decisions about schooling investment and processes of attrition take place.

Relying on repeated measures of household assets, household membership and parental status delineated across years of the KDSS, we are able to determine whether time-variant aspects of household composition and socioeconomic status are correlated adolescent schooling transitions. Repeated, annual measures provide a dynamic view of household composition and wellbeing. Whether a youth, enrolled in 2001, drops out in a particular year will be estimated for person-year units, and aspects of household composition and socioeconomic position, likewise, are assessed at the person-year unit of exposure. We reason that while initial socioeconomic status influences the odds of school drop-out, it is important that

analyses incorporate measures that are sensitive to potential upswings and downturns in these characteristics so as to best estimate their immediate impact upon youth schooling trajectories.

Combining multiple rounds of the KDSS provides an annualized picture of evolving school enrollment and attrition patterns observed among the school-age population of the 100 Kanchanaburi communities, distributed across 5 geographic strata, beginning in the year 2001 and through the year 2004. While the data provide a relatively narrow window for a survival analysis, and are characterized by right and left censoring, we are equipped to assess the education enrollment spells, and patterns of exit or drop-out from schooling among a large population of youth enrolled at the primary and lower secondary level, over the course of a three-year period. We restrict the analysis to the youth population which is enrolled and between the ages of 5 and 14 in the initial observation period (2001) in order to focus upon those youth who are at risk of school attrition and who, three years later, would still be under the age of 17, i.e., within the age range of upper secondary enrollment in the Thai system (Hannum, 2005, adopts a parallel approach of extracting youth of relevant age for schooling transition in a survey of Chinese households). In the Thai education system at present, most drop-out occurs at key points of transition, as students move from primary to the lower secondary level, or from lower secondary to upper secondary level (Knodel 1997). While recognizing these concentrated points of transition, nonetheless we measure exits at any grade level in order to capture the entirety of exits among a cohort of school-age youth, including those occur at less common time points. By controlling for the age of the enrolled student, and by limited our analytical sample to those age 5 to 14 in 2001, we account for the age-graded nature of the attrition process, as well as the standardized ages at which students enter and exit primary and secondary levels of schooling.

Recognizing that in an era of educational expansion inequalities in schooling will tend to dissipate at the primary and secondary level, and concentrate in the higher levels of the schooling system (Jao and McKeever 2006; Raftery and Hout 1993), the design of the KDSS, which does not have a follow-up component for assessing schooling outcomes for young adults who depart the province, nonetheless requires that we limit our focus to continuity in and exits from primary and secondary schooling. Nor does the KDSS provide relevant details on a youth's course of study and type of school attended, aspects of "horizontal" educational stratification that shape the future educational and employment prospects of young adults (Arum, Gamoran and Shavit 2007; Lucas 2001). These shortcomings notwithstanding, we still observe important and substantial disparities in patterns of attrition at the secondary level. Analyses of tertiary enrollment and disparities in educational quality would likely reveal even deeper gulfs across population subgroups.

We employ a discrete-time logit model to consider exits from a single state (school enrollment) to a single destination (non-enrollment). The discrete-time approach is motivated by the annualized observations of enrollment status in the KDSS, which create a banding of survival times by year. We employ episode splitting in order to incorporate time-varying covariates into the predictive models. This approach approximates that implemented by Beutel and Axinn (2002), in which the odds of exiting school are assessed across person years for Nepalese youth under the age of 16 at the time of data collection. Through this reorganization of the data, person years are the unit of analysis and the unit of exposure to the risk of exiting school; such a transformation increases sample size, but does not inflate standard errors and provides appropriate tests of statistical significance (Beutel and Axinn 2002).

RESULTS – DESCRIPTIVE STATISTICS

Figure Four indicates the percentage of Kanchanaburi school-age youth enrolled in school, by age, in the year 2001. School enrollment begins to decline around age 12, which is also the age at which most youth make the transition from primary to lower secondary school. The percentage of youth enrolled declines with years of age, such that about 50% of 17 year-olds in the KDSS communities are not enrolled in school in 2001. In the bivariate view, gender is relatively inconsequential to enrollment levels in the

KDSS. As Figure Five illustrates, teenage girls are only slightly more likely than their male counterparts to be enrolled in 2001.

If we assess the enrollment status of school-age youth in 2001 and subsequent years it becomes apparent that less than three quarters of youth under the age of 14 in 2001 are still enrolled in school in KDSS communities in 2004 (see Figure Six). About 14% of youth between ages 6 and 14 attrite from the KDSS between 2001 and 2004, and about 12% remain in the KDSS surveillance area but are no longer enrolled. These KDSS-specific results are largely consistent with 2002 national level school transition studies conducted by Thailand's NSO which indicate that only 88% of students transferred from the primary to secondary level, and only 69% transferred from the lower secondary to upper secondary level.

Next, we calculate descriptive statistics for our analytical sample, namely youth in the Kanchanaburi survey communities between age 5 and 14, and who were enrolled in school in 2001. This description of the sample is shown in Table One. Information on the age, gender, and educational attainment of household members was obtained through a household roster instrument in which a household informant provided and updated information on each resident household member, and also updated the residential status of each household member who was present in the previous year, for instance indicating if that household member had died, had moved, or had moved and returned in the past year. By way of description, we highlight several social, economic and demographic features of the sample, as well as the village and strata characteristics in which youth schooling decisions are made. We also elaborate on the approach we use to construct particular variables.

In terms of basic demographics, about 50% of the youth featured in analyses are female, and their average age in 2001 was nine years. About 8% live in households with at least one adult who was born outside of Thailand (in the vast majority of cases the foreign-born household member(s) is from Myanmar). We consider these to be immigrant households, the enrolled youth is either likely an immigrant him or herself, or the child of an immigrant. Thai nationality delimits social status and access to resources, thus we expect youth in immigrant households to experience myriad disadvantages in accessing school and persisting to upper secondary level.

Income, both for individuals and households, is quite difficult to measure with accuracy and consistency in developing country settings (Montgomery et al. 2000). Furthermore, while the KDSS data include information about wage income of resident household members and return migrant remittances, it does not provide an exhaustive account of income from all sources. Accordingly, we assess household socioeconomic position through a measure of wealth as indicated by asset ownership. Specifically, household wealth was assessed by determining the number and relative monetary value of fourteen major consumer durable items possessed by households in each of the survey rounds. After determining the relative value of these household items, and the aggregate value of assets possessed by the household, we determined the wealth quintile of each youth's household in each survey year. In terms of household wealth, youth in the sample are overrepresented in the wealthiest 20% of KDSS households and underrepresented in the poorest 40% of KDSS households. Specifically 25% of enrolled youth in 2001 live in the wealthiest quintile of households and 35% are in the two poorest quintiles.

We also create a variable indicating the number of years of schooling completed by the most highly educated adult in the enrolled youth's household. This variable, a proxy for human capital of the most educated household member, indicates that the mean level of schooling of the most educated household member in KDSS households is nine years, an amount which approximates lower secondary school completion under the current system. While literature on educational attainment frequently links youth attainment to the socioeconomic position and education level of parents, we adopt an alternative measure to account for the fact that a sizable share of youth (14%) are residing in households where neither parent is present. Rather than referencing the household head's level of schooling to describe the youth's origin

household, we identify the most educated adult household member. In the majority of cases this most educated adult is the parent, but when parents are absent it may be a grandparent, aunt or other relative.

In a series of questions about amounts of debt acquired from various sources in the recent past, the KDSS provides insights into the level and nature of household borrowing in Kanchanaburi. We find that household indebtedness is quite commonplace and often substantial in KDSS households. Specifically, the average amount of debt reported in households of enrolled youth in 2001 was 60,637 baht in 2001 (approximately $1500 US). However, household debt amounts ranged widely, from households with no accumulated debt (32% of households) to those indebted by more than 200,000 baht (5% of households). Because borrowing demands some amount of initial economic resources, and because borrowing is commonly undertaken for investment, in the Thai setting household borrowing occurs across the household wealth spectrum, and high levels of borrowing tend to be observed among relatively wealthy households, suggesting that heavy borrowing is undertaken by relatively well-off households to advance their economic position through investment, whereas lack of borrowing or borrowing in small amounts is likely to occur among households that need extra sums to "get by," that struggle to make ends meet, and that lack the assets or savings needed for more substantial borrowing.

To advance the study of migration's impact on youth schooling, we are particularly interested in how parental presence, and household composition more broadly, impacts upon youth schooling trajectories. Accordingly we develop a detailed measure of parental presence and absence, indicating whether both parents are present in the household during each survey year, whether both parents are absent, or whether only the mother or only the father is present in the particular survey year. To delineate more clearly the reason for the respective parent's absence, when youth are living with just one parent we delineate whether that parent is: a) married or, b) widowed, separated or divorced. We reason that when a youth is living with just one parent who is married, the absent parent is likely to be away from the household as a labor migrant. Although the majority of school enrolled youth resided with both parents in 2001, a sizable proportion of youth were living in single parent or skipped generation households. For children living in single parent households, paternal absence was much more common. Considering the single-parent's marital status, it appears that single parent families in the KDSS are created in almost equal numbers through parents' work-related migrations and marital disruptions (separation and/or divorce).

We also assess household composition through two measures which describe the number of household members who are elderly (age 60 and older) and young (age 15 and under) as indicated in the household roster. Since it is not possible to determine sibship through the KDSS survey design, we use these measures of household composition as a means to assess the number of household members in stages of the life course associated with economic dependence, and for youth, those potentially in competition for education resources. However, we do recognize that many teenagers and elderly individuals may, in fact, be contributing labor to the household economy. We also highlight the potential role of grandparents and other family elders in reinforcing youth schooling persistence, by providing supervision and encouragement, both in the presence and absence of a youth's parents. The mean values for numbers of children and elderly in enrolled youth's households indicate substantial variation. On average, enrolled youth in the KDSS are one of two children under the age of 15. On the other hand, about one in four of enrolled KDSS youth have an elderly adult residing in their household.

Given that the KDSS data collection involves a census of all resident household members in the 100 study villages/districts in each year, we are able to construct annualized measures of the adult, resident labor force structure from 2001 to 2004. Following from previous research which reveals the importance of local labor structures for youth school enrollment in Thailand and elsewhere (Buchmann and Brakewood 2000), we calculate the share of the village workforce engaged in the following three broad sectors: agricultural employment; professional, managerial and clerical occupations; and sales, services and labor occupations. Our measures are calculated by determining the primary occupation of resident adults in each village and aggregating to the village level in order to construction labor force composition

measures. The mean share of resident adult workers in each of the three sectors is shown in Table One. There is significant variation around the occupational composition means, especially across the geographic strata, with urban and mixed economy communities having greater shares of their workforce in the non-agricultural sectors. On average, across villages, agriculture predominates, with villages, on average, having around 63 per cent of workers engaged in agriculture. Share of the agricultural workforce across KDSS villages ranges from zero percent (in an urban district of the provincial city) to 98 percent. We reason, in line with human capital theory (Becker 1968; Buchman and Brakewood 2000), that in areas where low-skill and low-wage jobs abound, and where high-skill and high-wage jobs are limited, perceived returns to advanced schooling will be low and young people will be pulled out of school and into the labor market. In comparison to areas where agricultural employment predominates, youth in communities with sizable segments of the local labor force engaged in services, industry and professional-managerial positions may favor greater investment in education so as to improve access to these relatively high-wage and high-skill positions in the local economy (Gill 1991).

RESULTS – MULTIVARIATE ANALYSES

In order to capture the determinants of schooling attrition in dynamic perspective we employ a discrete-time logit model, which has been adopted in previous analyses of school attrition across a range of settings (e.g. Beutel and Axinn 2002; Ma 1999). As discussed earlier, the dependent variable is binary, indicating whether an enrolled youth between the ages 5 and 14 in 2001 remain enrolled (coded as zero) or dropped out (coded as one) in each of the years between 2001 and 2004. Through the method of episode splitting we create person year measures for each independent and dependent variable in the model. While certain of these measures are time invariant, such as gender, most are time-variant. Hence, this approach incorporates the dynamic features of household composition and household economy as predictors of schooling persistence and attrition. Because observations are concentrated in villages and districts, we employ robust cluster analysis to address error that may emerge due to clustering of observations in the sampled villages and urban districts. The results of this approach, represented as logistic regression coefficients, are shown in Table Three. Positive coefficients indicate that the variable, or variable category in question, is associated with an increase in the odds of drop-out, negative coefficients suggest the variable/category is associated with reduced odds of drop-out.

Beginning with Model One, we observe that the odds of school drop-out among KDSS youth are significantly greater in certain geographic strata, in particular within plantation and mixed economy villages as opposed to urban and semi-urban settings. The mechanisms underlying these spatial disparities in educational persistence are likely linked to the local structure of labor force opportunities across villages. We investigate this relationship further and in greater detail in subsequent models. At this preliminary stage we reason that divergent odds of drop-out across strata are linked to differences in the nature of household economic strategies and employment opportunities across areas, which in turn influence the perceived value of schooling and the opportunity costs associated with enrollment beyond the primary and lower secondary level.

Moving on to consider individual-level correlates of school attrition, we observe that girls are have significantly lesser odds of dropping out of school before age 18 than boys. This finding provides further evidence substantiating the closure of the gender gap in the Thai education system. In Kanchanaburi, as in other regions of the country, girls are no longer disadvantaged relative to their brothers with respect to secondary enrollments, a trend that reflects increased community schooling access and the changing labor force opportunities of young Thai women relative to their male counterparts. In a subsequent, gender interacted model, we will examine whether this gender advantage favoring girls holds up across villages that diverge in terms of their labor force structure.

With the dramatic increase in the number of immigrants from Myanmar and other Southeast Asian nations residing in Thailand in recent decades, foreign-born status is emerging as an important and

divisive line of stratification in Thai society (Chantavanich 1999; Battistella 2002). Our analyses reveal that foreign-born status is a salient, independent facet of social position that has a sharply negative influence on youth schooling outcomes in Kanchanaburi. Specifically, youth whose origin households include at least one foreign-born individual are about 50 percent more likely to drop-out of school in a given year than youth in households that include only native-born Thais. The KDSS does not provide information on the place of birth of youth under the age of 15; however, it is highly probable that youth with foreign-born adults in their households are also immigrants, or at least the children of immigrants. Under most circumstances, youth living in Thailand but lacking birth registration cards have very limited access to public schooling. While immigrant and second generation youth may have access to early primary schooling they may encounter significant barriers in making the transition to lower- and upper-secondary schools (where out-of-pocket costs also increase substantially).

The social and economic position of a youth's origin household has a significant influence upon his or her schooling trajectory. The odds of school drop-out are significantly lower for KDSS school-age youth whose origin household members are well educated and whose households are relatively wealthy, as measured by a household asset index. Specifically, each additional year of schooling possessed by an adult household member diminishes the odds of drop-out by nearly 20 percent. Compared to those in the two poorest quintiles, residing in a household of the two middle wealth quintiles reduces the odds of drop-out by about 50 percent. Youth residing in the wealthiest quintile of households are about 80 percent less likely to drop-out of school in a given year than those in the poorest 40 percent of households.

According to our analyses of the KDSS data, household borrowing has a significant, nonlinear association with youth school drop-out. While youth from households with low levels of indebtedness are more likely to drop-out from school, those from households with high levels of household debt are less likely to drop-out. There is an array of possible explanations for this relationship. In the Thai setting, household debt is positively correlated with household income/wealth. However, those who borrow relatively small amounts may be borrowing for different reasons (e.g., to "make ends meet") than those that are borrowing relatively large amounts (e.g., for productive investment and other strategies of wealth enhancement). Following from the new household economics perspective, household borrowing may free up capital constraints and minimize financial risk within households, thus making household members more capable and willing to continue to invest in youth schooling. Where financial constraints exist, households may take on debt with the purpose of funding a child's schooling. Alternatively, those with large amounts of debt may not be constrained in meeting basic expenses, but realize the practical value of educating their children, at the same time that they are advancing other strategies to improve their household's economic situation. Further research is needed to understand this relationship. The KDSS provides useful details on borrowing, such as the source and stated use of loans, that can aid in shedding light on this relationship.

The next set of coefficients in Table Two concerns the structural aspects of school-age youths' households of origin and their relationship with school attrition. We do not observe a significant relationship between the number of children under age 16 in the household and the odds of school drop-out. However, the presence of an older adult, age 60 or older, in the household of a young adult significantly reduces the likelihood of school drop-out. Oftentimes young people with migrant parents reside in "skipped generation" households with a grandparent taking care of their supervision and needs. Other times, elderly individuals reside with their children and grandchildren in extended families as a preferred or necessary form of intergenerational support and exchange. Either of these arrangements may serve to exert a positive influence upon the material and support resources within households that may aid in youth school progression.

Next, by way of exploring the impact of parental absence on youth schooling trajectories, we examine the set of coefficients defining parents' marital and residential status in the households of KDSS youth.

Interestingly, we find that the only youth experiencing a statistically significant disadvantage in school persistence are those who reside with a father who is divorced, separated or widowed. Other parental residence configurations bear some relationship with youth school drop-out, such as youth with neither parent resident, or with only a married father present, but these coefficients fall short of statistical significance. Our results are partially consistent with previous research on youth schooling and parental absence in that we find that a mother's absence is more detrimental to schooling outcomes than a father's absence. We are somewhat surprised to observe that the absence of both parents does not appear to increase the odds of a youth dropping out of school before age 18. This result may stem from the fact that the data to not permit an assessment of the receipt of remittances and we know from previous research that receipt of remittances often offsets the negative impacts on child wellbeing associated with parents' migrations (e.g., Jampaklay 2006). Alternatively, in settings where migration and other processes make parental absence commonplace, institutions such as families and schools may have adapted to minimize the potential threat to youth school progression. In any case, the results of our analysis, while conservative, suggest that certain forms of parental absence, especially that involving mothers, tend toward negative consequences for youth school persistence.

The next segment of our analysis, represented in Models two through five, addresses the importance of local level economic structure upon youth schooling attrition. For the most part, our results are consistent with previous research that identified predominantly agricultural workforces as enhancing the likelihood of school drop-out, and occupational structures that tend to demand more highly skilled workers as lowering the odds of school dropout. That the likelihood of drop-out rises among KDSS youth as the share of the local labor force in agriculture rises, and drop-out likelihood diminishes with increasing shares of local labor force in non-agricultural sectors, especially professional-managerial occupations, suggests that place matters in structuring opportunity and decision-making about educational investment. These results are consistent with the view, elaborated elsewhere, that the possibility of future employment in the modern sector provides strong incentives for youth investment in secondary schooling (Buchmann and Brakewood 2000). While employment opportunities extend beyond the village and urban district context, especially given the significant amounts of internal migration within Thailand, the local setting in which youth grow up and attend school is, no doubt, a salient context for the formation of educational aspirations and future employment plans. Furthermore, as the final, gender interaction model indicates, local contexts differentially shape boys' and girls' school attrition outcomes. In particular, the marked advantage experienced by young women in persisting in school is diminished significantly in communities with a large share of labor force opportunities in professional and managerial jobs. Quite possibly these settings provide access to high-wage and specialized positions that continue to be dominated by male workers, thus equalizing the gender advantage that has accrued to young women in areas that mostly provide access to services, manufacturing and agricultural employment.

DISCUSSION

After a decade of educational expansion, Thailand finds itself at a cross-roads with respect to secondary education, such that future trends in educational access, quality, equity will determine if the education system unlocks potential or acts as a bottleneck to realization of economic expansion and human development (World Bank 2006). Not all Thai youth have been equal participants in the country's effort to expand education and increase secondary level enrollment. In this paper we have attempted to delineate the individual, familial and community level factors that structure youth educational trajectories. Utilizing a 4 year, population-based panel study conducted in 100 communities of Kanchanaburi province, we model the process of school drop-out through a discrete time logit model. Our analyses reveal that a combination of economic and compositional features of households and communities shape youth schooling trajectories in Kanchanaburi. We uncover evidence to indicate that facets of household economy and household demography play important roles in shaping the school attrition process. Below we outline several of the key findings, and directions for further inquiry, that derive from our analyses.

At the individual level, our analyses provide further evidence of a closure, and reversal, of the Thai gender gap in educational attainment. Gender is being replaced by other categories of social stratification that weigh heavily on school attrition patterns. Immigrant children and children of immigrants, for instance, are prone to exit school at early ages, a pattern likely linked to myriad elements of disadvantage, from low levels of human capital in the parental generation, to institutional policies that limit non-Thai access to schools.

In terms of the socioeconomic status of youth origin households, we observe, consistent with much past research in the Thai setting and elsewhere, that youth from well-off households are far less likely to drop out of school at the secondary level than those from poor backgrounds. Such a result is an indication that in Thailand the non-tuition costs of "free schooling" likely remain prohibitive to youth from poor families. In addition to household asset wealth, we find that youth from household with relatively large amounts of debt (an alternative source of income to wage earnings) are less likely to drop-out of school than those youth from households that do not borrow, or borrow relatively little. These results suggest the potential gains to youth schooling that may arise through household borrowing. Determining how and whether household borrowing schemes and improved access to credit, in particular educational loans, may serve to improve youth access to schooling in developing countries seems worthy of further exploration.

Increasingly in developing countries, school-age youth are growing up in households that are impacted by migration and marital dissolution. Social scientists have only begun to delineate the pathways through which parental absence impacts upon youth schooling trajectories in developing countries (e.g. Kandel and Kao 2001; Kuhn 2006; Jampaklay 2006). By disaggregating parental marital and residential status in the households of school enrolled youth in Kanchanaburi, we determine that not all forms of parental absence weigh similarly upon youth schooling persistence. In particular, youth living only with a father, and whose mothers are absent either due to divorce, separation, or widowhood, appear to be at greatest risk of exiting schooling prematurely. Furthermore, we find that young adults living with elderly adults, who are often grandparents coresiding in skipped generation arrangements, actually have an edge over youth who do not live with an elderly counterpart. There are myriad ways to approach the measurement of household composition and to arrive at measurements that best capture the social, emotional and material supports that are relevant for youth educational trajectories. The present paper points to the importance of considering the gender of the parent, the reason for the parent's absence, and the presence of other family members in the youth's household.

That family effects on schooling operate within divergent social and economic contexts is made clear through our analyses of school attrition across communities of Kanchanaburi (Buchmann & Hannum 2001:85). Observing patterns that mirror those in Thailand, as a whole, and in other developing countries, we find clear evidence that place matters in decision-making about schooling, and ultimately for the socioeconomic pathways that youth embark on as a result of making decisions about continuing school or entering paid employment.

In Thailand, more so than many other countries, the returns to education, in terms of occupational opportunities and life time earnings, have proven to be high (UNESC0 2003, Phongpaichit and Sarntisart 2000). In light of the finding that sizable segments of Thai youth are not completing secondary schooling in Kanchanaburi (a finding consistent with other recent analyses at the national level, for example Pattaravanich et al. 2005), and that youth who drop-out originate disproportionately from families disadvantaged in myriad ways, it is clear that further reform is needed, in particular reform that improves access and affordability, before Thailand's system of "universal secondary education" can be fully realized.

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Figure One. Comparison of Secondary Enrollment Rates: Poorest and Richest Thai Household Quintiles

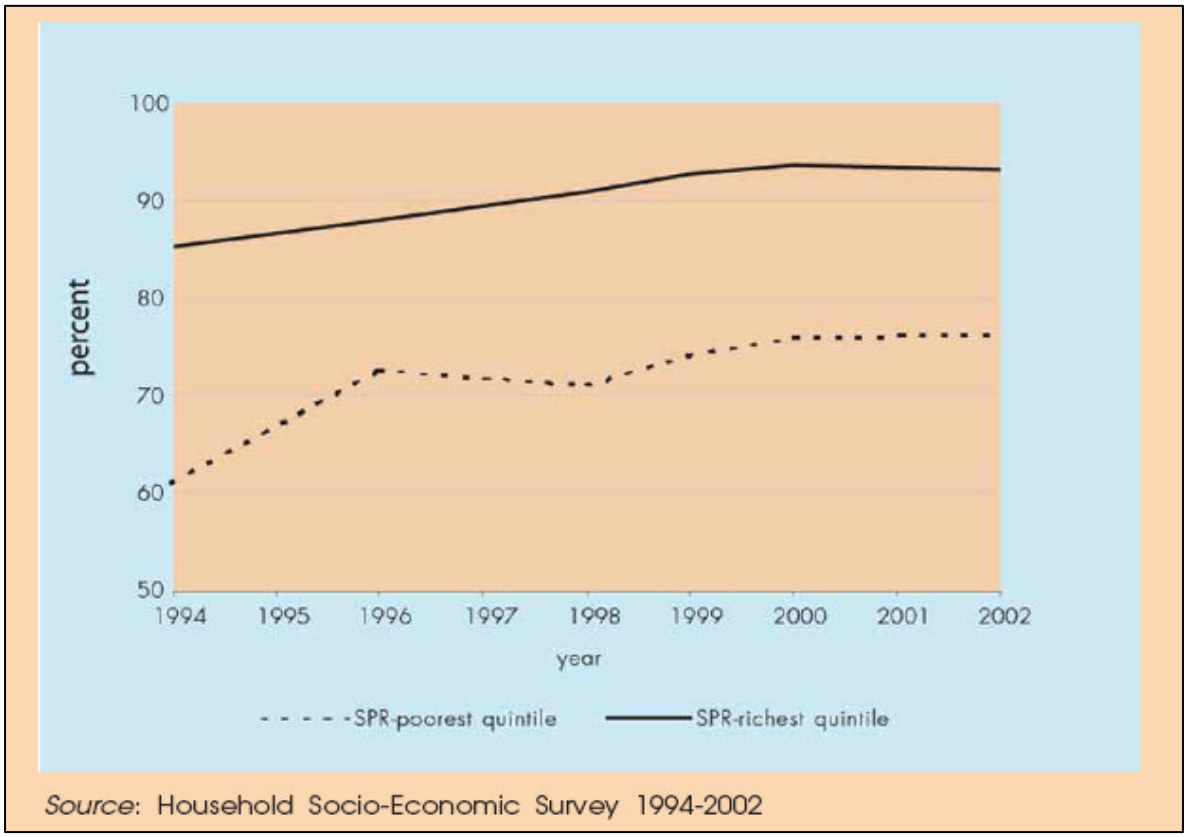

Figure Two. Map Indicating Locations of KDSS Study Sites

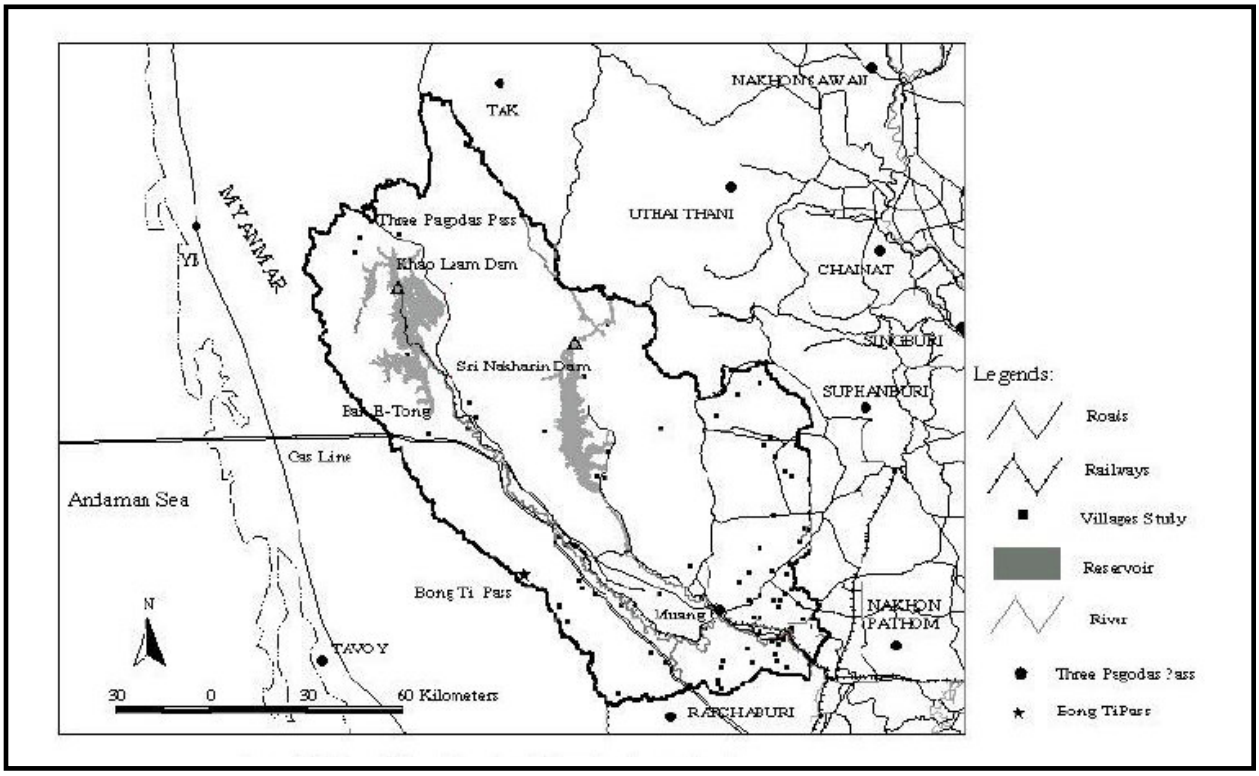

Figure Three. Map Indicating Kanchanaburi Province, Thailand, within Mainland Southeast Asia

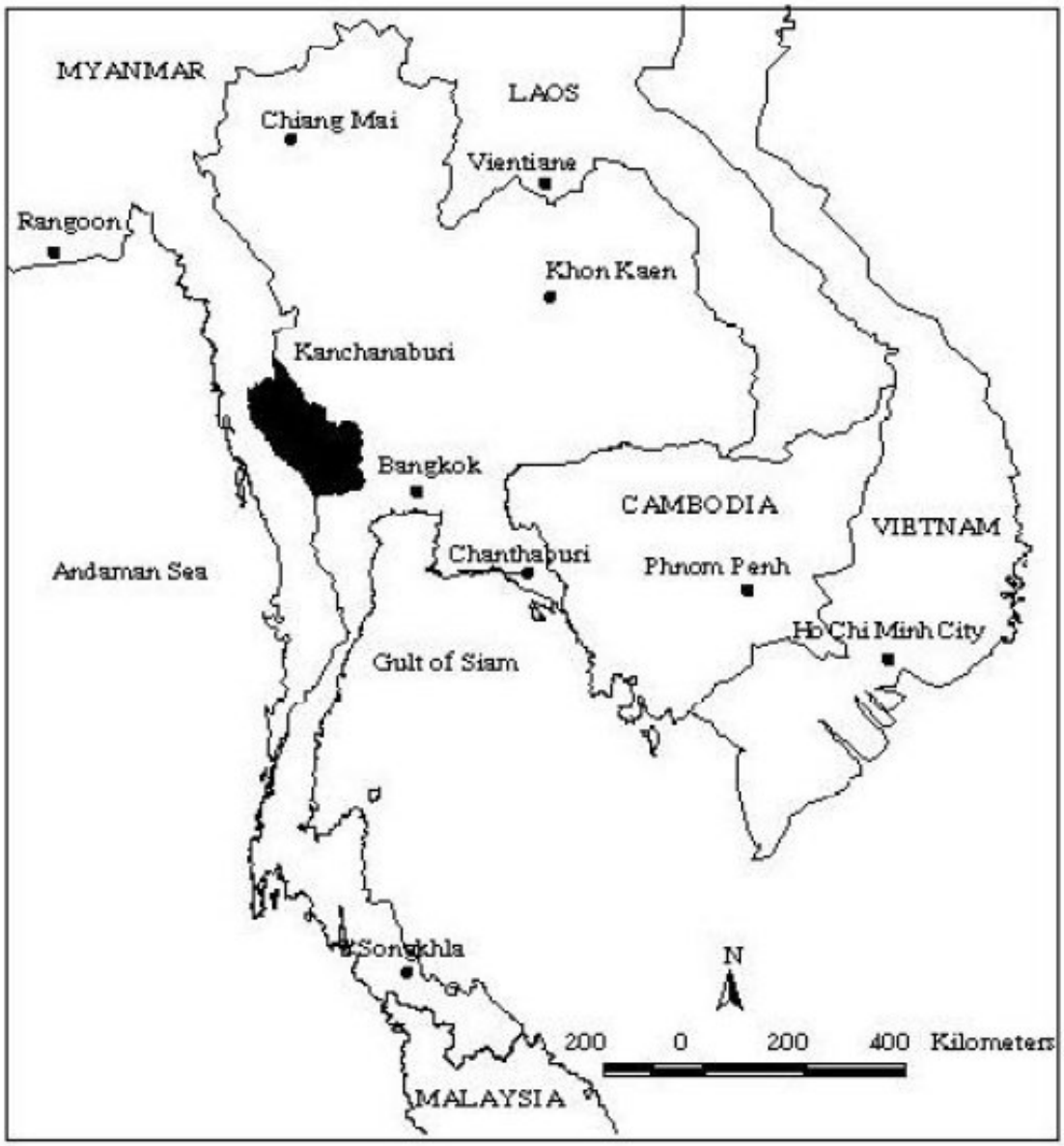

Figure Four

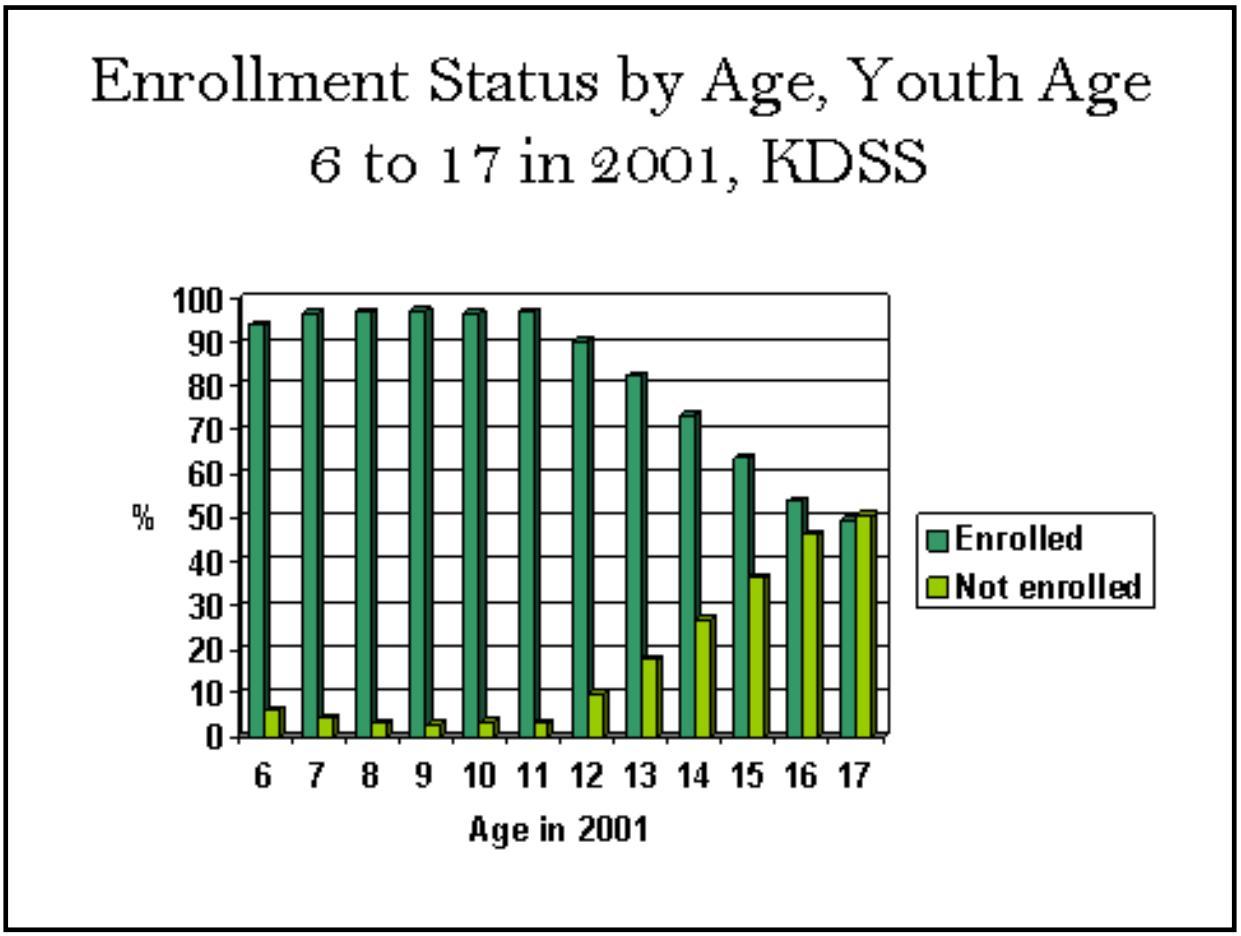
Enrollment Status by Age, Youth Age 6 to 17 in 2001, KDSS
100
90
80
70
60
50
40
30
20
10
0
%
6 7 8 9 10 11 12 13 14 15 16 17
Age in 2001
Enrolled
Not enrolled

Figure Five.

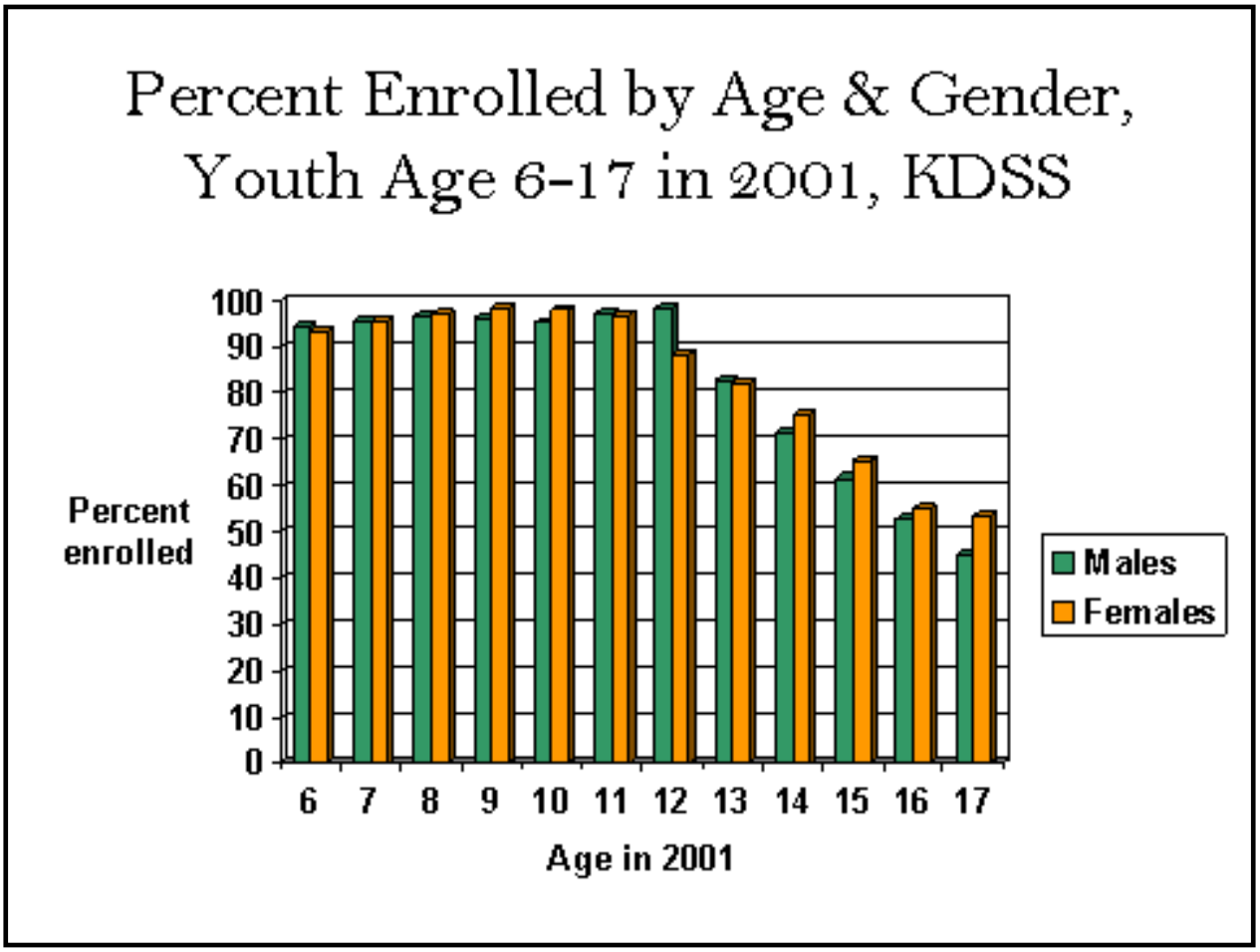
Percent Enrolled by Age & Gender, Youth Age 6-17 in 2001, KDSS
Percent enrolled
100
90
80
70
60
50
40
30
20
10
0
6
7
8
9
10
11
12
13
14
15
16
17
Age in 2001
Males
Females

Figure Six.

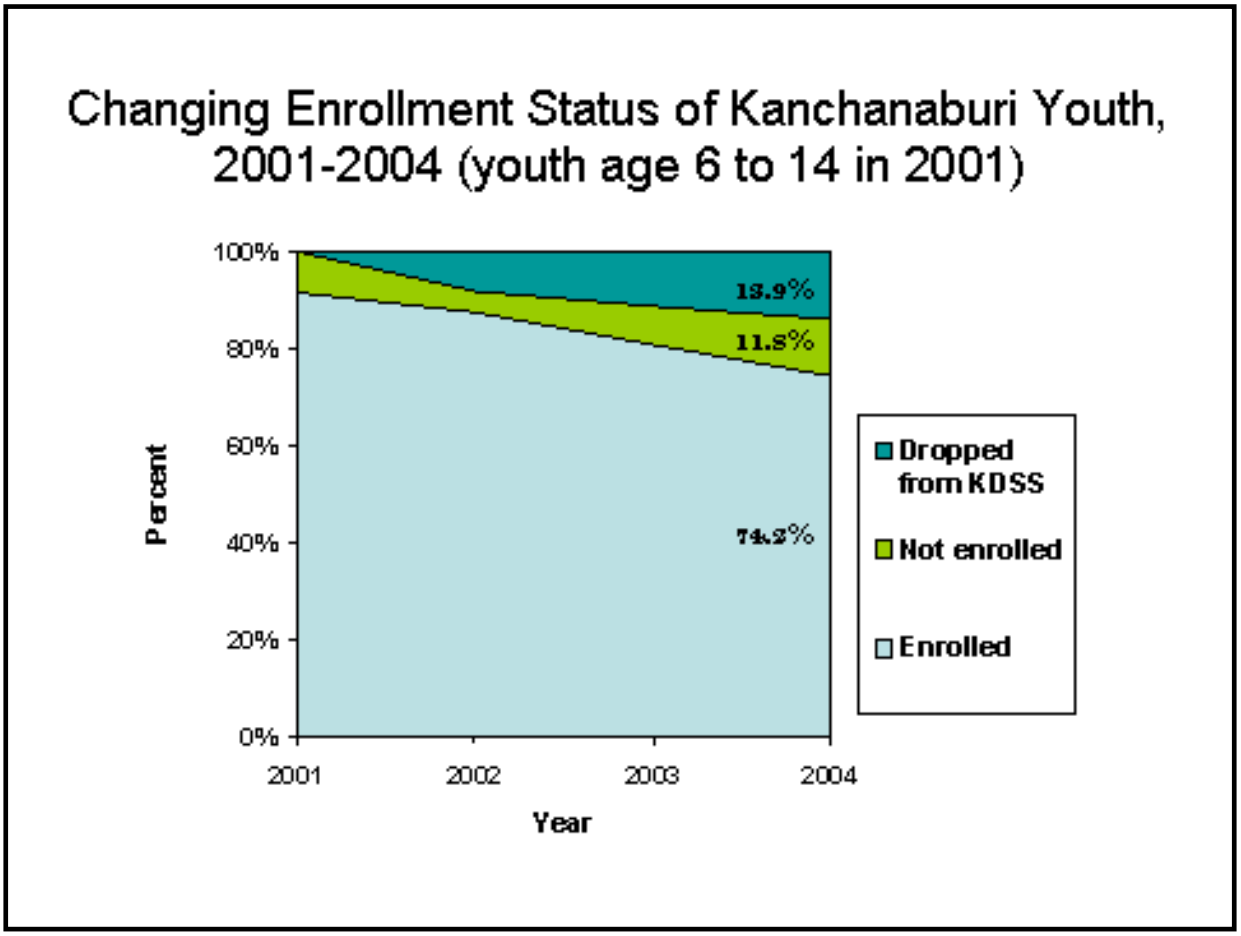
Changing Enrollment Status of Kanchanaburi Youth, 2001-2004 (youth age 6 to 14 in 2001)
100%
80%
60%
40%
20%
0%
Percent
13.9%
11.8%
74.2%
2001
2002
2003
2004
Year
Dropped from KDSS
Not enrolled
Enrolled

Table One. Descriptive Statistics, Kanchanaburi Youth Age 6 to 14 & in School in 2001

	%	(N)
KDSS Strata, 2001		
Urban-Semi-urban	19.2	1,693
Rice Field	16.0	1,416
Plantation	16.2	1,430
Uplands	28.9	2,548
Mixed Economy	19.7	1,743
Gender, 2001		
Female	49.0	4,329
Male	51.0	4,501
Foreign-born Person in Household, 2001		
Yes	8.1	715
No	91.9	8,115
Household Assets Wealth, 2001		
In Poorest 40% of Households	34.5	3,043
In Middle 40% of Households	40.8	3,600
In Wealthiest 20% of Households	24.8	2,187
Amount of Household Debt, 2001		
None	32.9	2,906
1-10,000 baht (1-227 USD)	24.6	2,170
10001-99,999 baht (227-2,270 USD)	28.1	2,480
100,000 baht or more (GT 2270 USD)	14.4	1,274
Parental Marital/Residential Status, 2001		
Both Parents Present	70.1	6,182
Neither Parent Present	14.4	1,271
Married Mother Present, Father Absent	6.7	588
Separated/Widowed/Divorced Mother Present, Father Absent	6.1	539
Married Father Present, Mother Absent	1.0	83
Separated/Widowed/Divorced Father Present, Mother Absent	1.8	155
Average Age of Surveyed Youth, 2001	9.30	2.80
Most Educated HH Member's Years of Schooling, 2001	7.40	3.70
Average Number of 0-15 year-olds in HH, 2001	2.23	1.11
Number of Adults Age 60+ in HH, 2001	0.31	0.61
Percent of Village Workforce in Agriculture	0.63	0.29
Percent of Village Workforce in Sales, Services, Labor	0.31	0.22
Percent of Village Workforce in Professional, Managerial, Clerical	0.07	0.08

Source: Kanchanaburi Demographic Surveillance System

Table Two. Crosstabulation: Individual, Household & Community Characteristics by School Attrition Status, 2001-2005		
	Still enrolled in 2004	Dropped out of school by 2004
KDSS Strata		
Urban-Semi-urban	91.0	9.0
Rice Field	84.7	15.3
Plantation	82.0	18.0
Uplands	84.6	15.4
Mixed Economy	87.0	13.0
Age - First Measured Year of Enrollment		
4-7	98.2	1.8
8-11	92.4	7.6
12-15	62.1	37.9
Years of Education Attained by Most Educated Adult in HH		
0-6	87.5	12.5
7-9	81.1	18.9
10-12	89.7	10.3
Greater than 12	94.8	5.2
Gender		
Female	88.7	11.3
Male	85.0	15.0
Foreign-born Person in Household		
Yes	86.3	13.7
No	78.7	21.3
Household Assets Wealth		
In Poorest 40% of Households	82.5	17.5
In Middle 40% of Households	87.1	12.9
In Wealthiest 20% of Households	93.1	6.9
Amount of Household Debt		
None	87.0	13.0
1-10,000 baht (1-227 USD)	84.1	15.9
10001-99,999 baht (227-2,270 USD)	86.3	13.7
100,000 baht or more (GT 2270 USD)	91.3	8.7
Other Children in Household Age 0-15		
Zero	69.0	31.0
One	85.2	14.8
Two or More	88.7	11.3
Persons in Household Age 60+		
Zero	86.4	13.6
One or More	84.5	15.5
Parental Marital/Residential Status		
Both Parents Present	87.1	12.9
Neither Parent Present	86.9	13.1
Married Mother Present, Father Absent	88.8	11.2
Separated/Widowed/Divorced Mother Present, Father Absent	83.9	16.1
Married Father Present, Mother Absent	85.2	14.8
Separated/Widowed/Divorced Father Present, Mother Absent	79.0	21.0
Agricultural Workforce in Village		
Over 75% of workforce engaged in agriculture	92.8	7.2
25-74% of workforce engaged in agriculture	87.2	12.8
Less than 25% of workforced engaged in agriculture	84.8	15.2
Professional/Managerial/Clerical Workforce in Village		
Over 10% of workforce engaged in professional/managerial	91.6	8.4
3-10% of workforce engaged in professional/managerial	86.7	13.3
Less than 2% of workforce engaged in professional/managerial	84.2	15.8
Services/Sales/Labor Workforce in Village		
0-20% of workforce engaged in sales/services/labor	84.5	15.5
21-50% of workforce engaged in sales/services/labor	87.3	12.7
Greater than 50% of workforce engaged in sales/services/labor	90.4	9.6

Source: Kanchanaburi Demographic Surveillance System

Table Three. Discrete-Time Logit Analysis - School Attrition in the Years 2001 to 2004 among Enrolled Youth Ages 5 to 14 in 2001

	Model 1 Coefficient/SE	Model 2 Coefficient/SE	Model 3 Coefficient/SE	Model 4 Coefficient/SE	Model 5 Coefficient/SE	Model 6 Coefficient/SE
Enrolled Youth's Age in 2001	0.775***	0.777***	0.777***	0.778***	0.778***	0.779***
	[0.031]	[0.032]	[0.032]	[0.032]	[0.032]	[0.032]
KDSS Strata, 2001						
Urban-Semi-urban (omitted)	--	--	--	--	--	--
	--	--	--	--	--	--
Rice Field	0.269	-0.076	0.029	-0.164	-0.192	-0.191
	[0.166]	[0.224]	[0.213]	[0.187]	[0.220]	[0.221]
Plantation	0.851***	0.460*	0.566**	0.434**	0.394*	0.398*
	[0.207]	[0.249]	[0.243]	[0.204]	[0.233]	[0.235]
Uplands	0.037	-0.346*	-0.25	-0.309*	-0.353*	-0.351*
	[0.172]	[0.197]	[0.193]	[0.163]	[0.184]	[0.186]
Mixed Economy	0.717***	0.403**	0.495***	0.345**	0.316*	0.324*
	[0.165]	[0.171]	[0.169]	[0.151]	[0.166]	[0.166]
Female	-0.348***	-0.345***	-0.346***	-0.350***	-0.350***	-1.875
	[0.087]	[0.086]	[0.086]	[0.086]	[0.086]	[1.203]
Foreign-born within Household	0.483**	0.493**	0.490**	0.477**	0.478**	0.489**
	[0.208]	[0.215]	[0.212]	[0.221]	[0.221]	[0.221]
Most Educated HH Member's Years of Schooling	-0.201***	-0.195***	-0.198***	-0.190***	-0.190***	-0.191***
	[0.018]	[0.019]	[0.019]	[0.018]	[0.019]	[0.019]
Household Assets Wealth Index, 2001						
In Poorest 40% of Households (omitted)	--	--	--	--	--	--
	--	--	--	--	--	--
In Middle 40% of Households	-0.486***	-0.466***	-0.468***	-0.467***	-0.464***	-0.465***
	[0.081]	[0.082]	[0.082]	[0.084]	[0.083]	[0.084]
In Wealthiest 20% of Households	-0.790***	-0.737***	-0.752***	-0.715***	-0.709***	-0.712***
	[0.143]	[0.147]	[0.146]	[0.146]	[0.146]	[0.147]
Amount of HH Debt (THB)						
None (omitted)	--	--	--	--	--	--
	--	--	--	--	--	--
1-10,000 baht	0.339***	0.327***	0.333***	0.313***	0.314***	0.311***
	[0.099]	[0.098]	[0.098]	[0.098]	[0.099]	[0.098]
10001-99,999 baht	-0.091	-0.141	-0.127	-0.153	-0.157	-0.159*
	[0.095]	[0.096]	[0.097]	[0.094]	[0.096]	[0.096]
100,000 baht or more	-0.371***	-0.428***	-0.413***	-0.433***	-0.438***	-0.435***
	[0.121]	[0.120]	[0.121]	[0.118]	[0.118]	[0.119]
Number of Children Age 0-15 in household	0.027	0.022	0.024	0.021	0.021	0.02
	[0.032]	[0.032]	[0.032]	[0.032]	[0.032]	[0.032]
Any Adult Age 60+ in HH (omitted - no adults 60+ in HH)	-0.221***	-0.227***	-0.223***	-0.241***	-0.240***	-0.247***
	[0.083]	[0.083]	[0.083]	[0.082]	[0.082]	[0.082]

Table Three. Discrete-Time Logit Analysis - School Attrition in the Years 2001 to 2004 among Enrolled Youth Ages 5 to 14 in 2001 (Continued)

	Model 1 Coefficient/SE	Model 2 Coefficient/SE	Model 3 Coefficient/SE	Model 4 Coefficient/SE	Model 5 Coefficient/SE	Model 6 Coefficient/SE
Parental Marital/Residential Status, 2001						
Both Parents Present (omitted)	--	--	--	--	--	--
	--	--	--	--	--	--
Neither Parent Present	0.169	0.192	0.188	0.188	0.192	0.197
	[0.138]	[0.141]	[0.141]	[0.140]	[0.142]	[0.142]
Married Mother Present, Father Absent	0.072	0.11	0.099	0.107	0.109	0.114
	[0.155]	[0.152]	[0.152]	[0.156]	[0.156]	[0.156]
Separated/Widowed/Divorced Mother Present, Father Absent	-0.032	-0.015	-0.019	-0.02	-0.018	-0.012
	[0.160]	[0.162]	[0.162]	[0.162]	[0.162]	[0.163]
Married Father Present, Mother Absent	0.419	0.436	0.429	0.448	0.448	0.446
	[0.290]	[0.286]	[0.287]	[0.286]	[0.285]	[0.286]
Separated/Widowed/Divorced Father Present, Mother Absent	0.624***	0.647***	0.639***	0.658***	0.658***	0.652***
	[0.241]	[0.246]	[0.244]	[0.248]	[0.248]	[0.245]
Percent of Local Labor Force Working in Agriculture	--	0.802**			-0.692	-1.482***
	--	[0.325]			[0.680]	[0.287]
Percent of Local Labor Force Working in Sales, Services, Labor & Transport	--	--	-0.740*		-0.855	-1.063*
	--	--	[0.379]		[0.829]	[0.575]
Percent of Local Labor Force Working in Professional, Managerial, Clerical Positions	--	--	--	-4.364***	-4.782***	-6.808***
	--	--	--	[0.965]	[1.076]	[1.172]
Female * Percent of Local Labor Force in Agriculture	--	--	--	--	--	1.746
	--	--	--	--	--	[1.187]
Female * Pct of Local Labor Force in Sales, Services, Labor & Transport	--	--	--	--	--	0.491
	--	--	--	--	--	[1.268]
Female * Pct of Local Labor Force in Professional, Managerial, Clerical Positions	--	--	--	--	--	4.429*
	--	--	--	--	--	[2.480]
Year 2001-2002	17.538***	17.552***	17.546***	17.571***	17.569***	17.567***
	[0.457]	[0.494]	[0.456]	[0.454]	[0.815]	[0.508]
Year 2002-2003	17.715***	17.750***	17.740***	17.750***	17.753***	17.749***
	[0.447]	[0.479]	[0.452]	[0.443]	[0.809]	[0.503]
Year 2003-2004	17.781***	17.824***	17.812***	17.823***	17.826***	17.823***
	[0.461]	[0.491]	[0.465]	[0.459]	[0.807]	[0.509]
Constant	-28.707	-28.999	-28.321	-28.245	-27.495	-26.81
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Observations (person years)	30,191	30,191	30,191	30,191	30,191	30,191
Pseudo R2	0.39	0.40	0.40	0.40	0.40	0.40

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Source: Kanchanaburi Demographic Surveillance System (KDSS)