

Indigenous Peoples, Poverty and Development

Chapter 7: Laos

Ethno-linguistic Diversity and Disadvantage

Elizabeth M. King

World Bank

Dominique van de Walle

World Bank

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1 Introduction

Laos (officially, the Lao People's Democratic Republic) is one of Southeast Asia's poorest countries and probably also the region's most ethnically diverse country. Its population of five million has four broad ethno-linguistic families: the Lao-Tai (67% of the population), the Mon-Khmer (21%), Hmong-Lu Mien (8%), and the Chine-Tibetan (3%). These categories further subsume 49 distinct ethnicities and some 200 ethnic subgroups (World Bank 2006b).¹

There are pronounced disparities in living standards across these ethno-linguistic groups, with some groups faring much worse than others. The groups are geographically dispersed, and sometimes categorized not by their linguistic family but rather by whether they live in the country's lowlands, midlands or highlands. Many live in ethnically homogeneous villages. The historically politically, economically and socially dominant Lao-Tai are the primary residents of urban areas, and also live in the high density, agriculturally productive lowland areas around Vientiane and the Mekong corridor. The Mon-Khmer people, whose presence in present day Lao PDR predates all the other groups, typically live in midland rural areas of the North and South. The Hmong-Lu Mien people are found in the uplands and high mountains in the north and the Chine-Tibetan are located in the northern highland areas.

Lao PDR is a predominantly rural country: in 2003 agriculture contributed 48 percent of the country's gross domestic product and employed 80 percent of its labor force (World Bank 2006a). Rural Lao-Tai households are often engaged in the cultivation of lowland irrigated paddy-rice. In contrast, non-Lao-Tai households typically practice subsistence-oriented semi-permanent or shifting agriculture in ways adapted to their specific agro-ecological environments; they grow upland rice, often supplemented by corn and, in many more isolated areas, poppy (Ireson and Ireson 1991, Evrard and Goudineau 2004).² Many are also reliant on the collection of forest products and, although often blamed for deforestation, they are also negatively affected by encroaching commercial logging by the government and military for whom this has become a profitable source of foreign exchange (Ireson and Ireson 1991). Some non-Lao-Tai minority groups are still semi-nomadic, moving to new areas when their lands are depleted, but others have become sedentary. They often live in areas with limited access to transport infrastructure, marketing opportunities and social services, and many have low levels of human development outcomes, have no tradition of literacy, and do not speak Lao, the official national language.

Significant geographic variations in living standards and by elevation, as well as a desire on the part of the government to assimilate the non-Lao-Tai, have encouraged the

¹ There are several ethnic classification systems in Lao PDR and depending on the system used the number of ethnic groups vary from about 50 to more than 200 (Pholsena 2006). An alternative classification that is commonly used is based on geographic location. Hence, Tai-Kadai is called *Lao Loum* or Lao people of the valleys; Mon-Khmer are *Lao Theung* or the Lao people of the hillsides, and Tibeto-Burman and the Hmong-Mien are the *Lao Soung* or Lao people of the highlands.

² In 1998, 45% of the country's villages were dependent on swidden agriculture for their livelihoods (State Planning Committee and National Statistical Center 1999).

government to promote various types of poor area programs. Since the late 1980s there have been efforts to resettle highland villagers in lowland “focal” areas where basic public services such as schools and health facilities already exist, or can be more efficiently and cheaply provided (Cohen 2000; Evrard and Goudineau 2004). Since 2003, the government has also had a program that focuses interventions on 72 out of 143 total districts, identified as “priority districts.”

Observers have claimed that these programs have failed and even worsened the welfare of relocated households due to a lack of support and the infrastructure necessary to adapt to the new and foreign environments. Many have succumbed to diseases such as malaria to which they have no resistance (Cohen 2000). Indeed, it has been argued that the government is more interested in the resettling and assimilating the ethnic groups into Lao-Tai culture than in raising their living standards per se (Ireson and Ireson 1991, Baird and Shoemaker 2007).³

This paper examines various aspects of the living standards of Lao PDR’s ethnic minority groups relative to that of the historically dominant Lao-Tai ethno-linguistic group. The analysis draws primarily on data from the Lao Expenditure Consumption Survey of 2002/3 (LECS3), a nationally representative household survey that covered 8,100 households. Unlike the earlier surveys, this survey collected information on ethnic group affiliation of household members. It also collected an array of demographic and socioeconomic information about the sample households, including measures of consumption, household assets, household size, education levels and health status of household members, utilization of public services, and employment and time use. Because of data inadequacies, we undertook consistency checks on the data related to consumption, schooling, health, employment and time use, and other background information on households and individuals. The checks include (but are not limited to) cross-checking the responses to related questions and verifying responses against response codes and skip patterns. We use the data for the survey questions that pass these tests and discard the responses to questions that do not or avoid using the survey information altogether; in particular, employment, labor force participation and health cost data appear to have problems.

For our analysis we also use data from a school survey module which was added to the LECS3. The module was applied to all the primary schools in the same LECS3 survey villages; it collected data on a variety of school characteristics, including information on

³ “Resettlement, then, is a strategy for the development of ethnic minorities that was conceived by lowland Lao and is carried out by Lao and culturally assimilated ethnic minority men. While forest land use and resettlement policy is only one aspect of development for government personnel, it is a life and death issue for minorities. Projects so far have been clumsy, culturally insensitive efforts to attract upland minorities to an area by constructing physical structures such as roads, schools, clinics, or dams, but which include few or no programmatic activities such as agricultural extension, training or public health outreach. Donor agency and government personnel administer resettlement resources according to their conception of what is good for the minorities or for national development goals. Thus, resettlement becomes another means by which ethnic minorities are Laoized as they are “developed.” (Ireson and Ireson 1991, pp.935-36).

individual teachers and the school head.⁴ About 80 percent of children in the sample live in a village with a primary school. In cases where there was no primary school in the village, the most attended school and the second most attended school outside the village were surveyed, provided these schools were located in villages contiguous to the sample village.

For simplicity, we classify the population into just two ethnic groups — the Lao-Tai (henceforth referred to as LT) and the non-Lao-Tai (NLT). Just three percent of survey households (264 of 8,092) have both LT and NLT members, but three-fourths of these mixed households are in urban areas. These mixed households are classified as LT if there are at least as many LT as NLT members. Moreover, since the NLT ethnic groups predominantly live in rural areas and so have small urban sample sizes, we either do not show them under the urban category or simply focus on rural areas. The maps in Figure 1 show the provincial distribution of the LT population alongside the average altitude of provinces, demonstrating that the LT population tends to reside in the lowlands and midlands as compared with the NLT population.

<Figure 1 about here>

2 Poverty profile

Throughout the paper, we use real household per capita consumption expenditures to measure overall living standards. This measure includes the value of consumption from own production and imputed housing costs. It accounts for spatial price differences across the urban and rural areas of four regions: Vientiane, North, Center and South.

In 2002/3, one-third of Lao PDR's population was poor, but the incidence of poverty was substantially higher for the NLT than for the LT at 50.6 and 25.0 percent, respectively (Table 1).⁵ In general, urban areas were less poor than rural areas; specifically, poverty was lowest in the urban areas of the highlands (14.4%) and highest in the rural highlands (45.2%). Among urban areas, the midlands had the top incidence of poverty (37.7%). These patterns are repeated for the LT and NLT populations except that, interestingly, the incidence of poverty was slightly higher for the NLT in the rural lowlands (55.1%) than in the highlands (50.0%). The urban midlands deserve special mention as the NLT have a headcount index of 63% in those areas, the highest poverty incidence among either ethnic group in urban or rural areas. There is also a deep pocket of poverty among the LT residing in the urban midlands, albeit much smaller at 27.3%. Both the depth and severity of poverty as measured by the poverty gap index and the squared poverty gap mirror the patterns for the headcount index.

<Table 1 about here>

⁴ The primary school module was developed by Elizabeth King, Keiko Miwa and Dominique van de Walle. The principal respondent of the questionnaire was the school principal, responding to questions about personal and educational characteristics as well as about the facilities in the school and its physical condition, its parent-teacher-association, school fees and other school characteristics. All teachers in the sample schools were also interviewed to elicit individual characteristics, including educational attainment, teaching experience, and activities as a teacher.

⁵ We use the government's poverty line which is based on the cost-of-basic-needs method and incorporates spatial price differences (Richter et al., 2005).

Comparing the characteristics of LT and NLT households and the places where they live, along most dimensions the LT have, on average, more favorable attributes than the NLT.⁶ They have more education: 5.4 years of schooling versus 2.9 for household heads (predominantly male), and 3.7 years versus 1.1 for their spouses. They have better access to basic social and economic infrastructure. Nationally, 61 percent of the LT live in villages with electricity versus 22 percent of the NLT; 86 and 21 percent of LT reside in places with primary and lower secondary schools, respectively, compared to 79 and 5 percent of NLT; and 17 versus 7 percent have health posts in their villages. These patterns persist after controlling for income: similar disadvantages appear for the NLT relative to the LT when we examine only the poor or even the non-poor among them. However, there are a few reversals for the urban NLT, more of whom live in places with upper secondary schools, hospitals and health posts.

The receipt of remittances whether from other parts of Laos or abroad is quite low at 3.2 percent of the population nationally, or 2.7 percent of all households. But this proportion varies with living standards and by urban and rural location (Figure 2). The well-off LT population, whether residing in urban or rural areas, is more likely to receive remittances. At the highest consumption levels, over 30 percent of them receive remittances; at the poorest levels, around 10 percent do. The likelihood of receiving remittances rises with consumption also for the urban NLT up to a maximum of about 10 percent among the richest people. There is no such economic gradient for the rural LT; the incidence of remittances for them hovers around only 2 to 5 percent across the entire distribution. Because of this pattern in remittances, they exacerbate both consumption and inter-ethnic inequality.

<Figure 2 about here>

What explains the differences in living standards among ethnic groups in Lao PDR? Following the literature, we estimate the relationship between household welfare, measured as household per-capita consumption, and a set of household and community endowments captured by geographic variables (Ravallion and Wodon 1999; van de Walle and Gunewardena 2001).⁷ Household characteristics include the log of household size and demographic composition variables: shares of children of different gender in the 0-6 and 7-16 age brackets; shares of male and female adults (17-55); and the share of elderly which is the left out variable. Household demographics may not be exogenous because family members can choose to cohabit or not and because fertility is at least partly a behavioral outcome. Ideally, we would also like to control for whether household members speak Lao, irrespective of their ethnicity, but this information is not available.

⁶ See Appendix Table 1 for a comparison along a fuller list of household characteristics.

⁷ We estimate the statistical relationship between the log of per capita expenditures of households and their household characteristics and geographic or locational variables, using multivariate regression analysis. The analysis is undertaken separately for each of the four gender-ethnic groups.

However, recognizing that per capita household expenditure may be an imperfect measure of welfare, the inclusion of demographic controls help account for differences in welfare at given expenditures per person. Such heterogeneity might arise through likely economies of scale in consumption or differences in needs for different age groups.

We include a dummy variable for whether or not the household receives remittances from abroad. This too is likely to be endogenous to living standards, but the arguments for including this variable outweigh those for leaving it out. We expect this variable to reflect unobserved attributes of the household such as those related to social networks that may be crucially important to welfare.

A few explanatory variables describe the head of household: age and age squared, and gender. Household human capital is assumed to be exogenous to current consumption and is measured as a series of dummy variables for the highest education level of the household member who has completed the most formal schooling, allowing us to measure the incremental returns to extra levels of schooling. There are eight possible levels: no schooling (the left out level); some primary school; completed primary school (5 years); some lower secondary; completed lower secondary (3 years); some upper secondary school; completed some upper secondary school; vocational education or university education.

Given that the vast majority of rural households rely on agriculture for their livelihoods, we would have liked to include controls for each household's access to land, both amounts and quality, but the data on this front are weak. The LECS3 asks only whether the household has access to or owns land and its value if the land were to be sold; however, the responses do not seem reliable. Furthermore, given how widespread swidden cultivation still is for many households in the uplands, it is not clear that these data would mean much.

Finally, we include a full set of variables identifying the villages in which the households live, as well as whether those villages are located in the highlands or lowlands (as opposed to the left out midlands category). In this particular setting we expect that location is largely exogenous and has a direct causal effect on living standards; we also expect the village effects to help deal with the potential bias from unmeasured factors that are common within a village. Apart from government resettlement programs to focal ("priority") sites, mobility in rural areas appears to be limited. Villages are small and the village effects should adequately capture differences in inter-village access to land and education, local infrastructure, geo-environmental attributes, prices, and other community level factors. This helps deal with the likely correlation between the included variables — notably education — and location. Without geographic fixed effects a bias is probable.⁸

⁸ Research has shown the importance of controlling for geographic fixed effects in similar settings in neighboring countries. See Jalan and Ravallion (2002) for Southwest China and van de Walle and Gunewardena (2001) for Northern Vietnam. In all regressions, we estimate the standard errors using the Huber–White correction for heteroscedasticity and we correct for cluster sampling of households within villages using the robust cluster option in STATA.

Table 2 presents the results for the entire sample and separately for the two ethnic groups by urban and rural location.⁹ We find that the structure of returns to household characteristics is not the same for the LT and NLT groups, so the following discussion focuses on the disaggregated ethnic- and location-specific regressions (columns 2 to 5).¹⁰ Because the urban NLT sample includes only 213 households, the coefficients for that sample may be less precisely estimated.

<Table 2 about here>

A larger household size significantly reduces per capita consumption for all groups. Controlling for household size, demographic composition appears to be of less consequence to living standards in urban than in rural areas. One surprising exception is the significant negative coefficient of the share of infant and toddler girls but not of boys in the same age bracket for the urban LT. Why the effect of small children on per capita consumption would differ by gender is not obvious. Children of that age typically require considerable care as is implied by the negative coefficients for both sexes in rural areas. A possible explanation is that urban LT households consume more and invest in very young sons more than they do in young daughters. Studies have examined the hypothesis that a strong son preference may lead parents to provide inferior care for daughters in terms of food allocation, prevention of diseases and accidents, and treatment of sick children (Arnold et al. 1998). Some studies have found little evidence of discrimination against girls in feeding (Haddad et al. 1996; Basu 1993), but other studies conclude that the discriminatory behavior might depend on the number and sex composition of surviving children (e.g., Mishra et al. 2004 on India).

In rural areas and relative to the left-out elderly group, more prime-age LT adults, whether male or female, are associated with significantly higher living standards. This is not the case for the NLT for whom the returns to prime age adults are not significantly different from the returns to elderly adults. However, a larger share of members between the ages of 6 and 16 exerts a negative effect not found for the LT. For both rural ethnic groups, a larger share of small children negatively impacts per capita consumption expenditures. Male headship tends to have a significant positive effect as does the age of the head with turning points in the late 40s and early 50s.

Controlling for other characteristics, there are significant, large returns to education, although the pattern of returns differs across the groups. In urban areas, returns to lower levels of education are not significantly different from the returns to no or some primary schooling for the NLT, while the LT get significant returns from the completion of lower and upper secondary schooling. The picture is quite different in rural Laos where there are pronounced and significant returns to schooling at all levels although the completion of a schooling level tends to do more for consumption than having only completed part of the level. Still, the returns tend to be larger and more consistently statistically significant for the LT. For example, the impact on per capita consumption of the most educated

⁹ Summary statistics for the included variables are given in Appendix Table 2.

¹⁰ Chow tests reject the null hypothesis that the parameters are the same for the different groups when geographic fixed effects are excluded ($F= 3.37 (59, 536)$).¹⁰ Tests also reject the same models for the urban LT and NLT ($F= 3.37 (20, 106)$) and for the rural LT and NLT ($F= 4.66 (21, 432)$).

household member having completed primary school is 10% of original consumption for the NLT versus 17% for the LT. Completion of lower secondary school results in a per capita expenditures increase of 15% for the rural NLT and 26% for the rural LT. The returns to vocational education are strongest for the urban NLT and those to University are strongest for the rural LT.

The regressions also attest to powerful geographic effects on living standards. The village fixed effects (not shown in Table 3) are overwhelmingly significant and have strong explanatory power, almost doubling each regression's explanatory power. As in similar settings in Vietnam (van de Walle and Gunewardena 2001), the returns to education are substantially over-estimated for the rural disadvantaged minority groups as well as for the rural LT groups when geographic fixed effects are not accounted for. This result probably reflects geographic differences in the supply (and quality) of education services. Places with better endowments and hence higher living standards are also the places where households will tend to invest more in education. If both the amounts of education and its quality are higher in places where living standards are also higher, then not accounting for quality will tend to over-estimate the returns to education. For both groups then, the returns to schooling depend on where they live. Furthermore, even controlling for village effects, the coefficients on whether the household lives in the highlands relative to the midlands are highly significant. The lowlands dummy has a significant (and negative) effect on living standards only for the urban LT.

Receiving transfers from abroad significantly raises consumption for all groups except the urban NLT. Strikingly, in rural areas, receipt of remittances reduces inequality between the LT and NLT because relatively more NLT households receive remittances, but as we saw earlier, the households receiving remittances remain few.

3 Education: Convergence, with Persistent Differences

In the following sections we turn to the schooling levels of the ethnic groups in Lao PDR. Investments in education are one of the best hopes for improving the lifetime prospects of a child—even a child from a poor family—and for Lao PDR we see both progress and persistence in schooling inequalities. First, we describe the historical trend in education levels. Since higher mortality rates in older ages might affect average schooling years, we limit the age range from 18 to 60 years. Second, we focus on recent education outcomes.

Educational progress over time

To derive historical changes without long time-series data, we examine the differences in the average completed years of schooling of adults of different ages.¹¹ Comparing urban and rural populations, LT and NLT, as well as males and females, we find a steady increase in educational attainment over the last 40 years for all groups and important relative changes among those population groups (Figure 3). In general, progress was significantly higher for the LT than for the NLT. One notable finding is that, in both

¹¹ The average years of schooling attained is defined as highest grade completed rather than the actual number of years enrolled in school. Due to grade repetition, the highest grade attained can imply fewer years of schooling than the number of years actually spent in school. We have no separate information on grade repetition from the surveys.

urban and rural areas, LT women showed the largest improvement. In urban areas, LT women rose to equal the average schooling years of LT men; in rural areas, LT women narrowed the gap with LT men to just over a year and overtook NLT men some 20 years ago. In contrast, there is no sign of any gender convergence between men and women in the NLT groups.¹² Although rural NLT women lag furthest behind, NLT men also perform badly in comparison to the LT. Indeed, there are signs of divergence between ethnic groups, with a widening schooling gap between the rural LT and NLT.

<Figure 3 about here>

The average completed years of schooling started from a low base of two years nationally around 1960, and increased to five and a half years—an annual rate of increase of 0.08 of a school year, or one full school year every 12 and one half years. Educational attainment was higher throughout for urban populations (3.9 years increasing to 8.2 years in 2002/3) and lower for rural populations (1.6 to 4.6 years in 2002/3). Among all gender and ethno-linguistic groups, rural NLT women have the least schooling during the period, as well as the smallest yearly gain over the last 40 years—just 0.04 of a school year per year. Even among those in the youngest birth cohort, these women had 6.6 fewer years of schooling than urban LT men, the group with the most schooling. The urban-rural distinction is, of course, evolving over time due to rural-urban migration and the upgrading of rural to urban areas, so this makes the urban progress over the period all the more impressive but may also account for the relative stagnation in the literacy rate in recent years.

The overall increase in years of schooling translates into higher literacy, defined as the ability to read and write.¹³ Plotting the literacy rate against age, we see that urban LT men have the highest literacy rate which is upwards of 90 percent (Figure 4). The continuous increase in schooling years of urban LT women shows up in a sharp rise in their literacy rate more than 30 years ago, leading to a convergence in the literacy rates of male and female 18-year-olds. In rural areas, LT men have become more literate, but they have been overtaken by urban LT women. Rural LT women also have surpassed rural NLT men, but rural NLT women continue to have the lowest literacy rate, reaching only 30 percent for the youngest cohorts.

<Figure 4 about here>

¹² Figure 2 shows three age-group moving averages.

¹³ The answers given to questions about whether one can read and whether one can write correspond almost perfectly across individuals. For this reason we aggregate the two into one measure of literacy. Note also that there are two possible measures of literacy – whether one can read and write with or without difficulty. When we define literacy more strictly as being able to read and write without difficulty, literacy rates drop significantly, especially for poor groups.

Current education patterns

Lao PDR's school cycle starts with five years at the primary level, followed by three years each at the lower and upper secondary levels.¹⁴ Some students go directly from primary or lower-secondary school to teacher-training or vocational training which may take an additional year or two; alternatively, some graduate from the upper-secondary level to a university education. Ideally, a student enters primary school at age six and finishes university education at age 22.¹⁵

To assess school enrollment numbers, we use three different measures: age-specific enrollment rates for three different age groups (6-10, 11-13, and 14-16) which correspond to the official age groups for the first three education cycles; net enrollment rates for the three education cycles; and gross enrollment rates for the three cycles.¹⁶ The net enrollment and gross enrollment rates would be equal if all enrollees in a school cycle belong only to the official age group—but high rates of grade repetition and entry into school that is spread out over several ages result in the gross enrollment rate greatly exceeding the net enrollment rate. We emphasize this point because many children in Lao PDR begin the primary cycle later than the prescribed entry age of six, entering instead only at age nine or ten; correspondingly, children remain in the primary cycle until their middle to late teens.¹⁷ Rural children enter school, if ever, later than do urban children, and so a larger percentage of them—male or female, poor or nonpoor, and LT or NLT—are still at the primary level even in their late teens.¹⁸

Likewise, the net enrollment and age-specific enrollment rates would be equal if students of a particular age group are enrolled only in the official school cycle for that age group; again, grade repetition and late entry lead to these rates being unequal. Because of late entry into school relative to the official start age for school, especially in rural areas, gross and net enrollment rates that are based on the official school ages can give a misleading picture of schooling in the country. In Lao PDR among children in the official primary school-age group (ages 6–10), the gross enrollment rate was 114.9 percent and the net enrollment rate 70.4 percent, according to LECS3 (Table 3).¹⁹ The difference between the

¹⁴ Pre-primary school can play an important role in preparing children intellectually, psychologically and socially for entering primary school, but in Laos few children attend pre-primary school, perhaps reflecting the high fees and low supply of those facilities. In our sample, only 11 percent of all children aged 10 to 18 ever attended kindergarten, although there is a large difference between urban and rural children (24.9 percent versus 5.4 percent).

¹⁵ Currently, a bachelor's degree course at the University of Lao is 5 years.

¹⁶ See Appendix 1 for a definition of these measures.

¹⁷ LECS3 includes a question asking respondents about their age of starting school, so this information is not a computed age of entry.

¹⁸ However, the average age at which children start school has declined markedly over time. In 2002/3, nearly 80 percent of those aged 10 entered school by age 8; by comparison, just slightly more than 20 percent of those aged 18 did so.

¹⁹ We examined the reliability of the LECS3 schooling data and various enrollment definitions. Our estimates of enrollments include children who were on vacation during the survey who also stated that they were going to return to school the following year. We also use information on whether those vacationing children were in school previously and had completed at least one year. If so, then we considered them as enrolled; if they had not attended school previously, then even if they reported an intention to attend school the following school year, we considered the child as not enrolled. In the broader education literature, parental aspirations or expectations about their children's schooling are considered (at least) partial information about schooling outcomes. The percentages of children on vacation but expected to return to school are higher in urban than in rural areas. Because of this pattern, the aggregate enrollment rates are

two rates indicates that many primary school students are either younger or older than the official ages for the cycle, which is 6-10 years. Since it is much less likely that the enrollees are younger than six, the explanation must be that about half of primary school students are older than 10. The age-specific enrollment rate for the 6-10 age cohort was 71.8 percent, indicating that only 1.4 percent of the children attending school in this age group are enrolled in another school cycle, most likely at the lower-secondary level. At older ages, as children fall behind in their schooling, this gap between the net enrollment rate and the age-specific rate widens.

<Table 3 about here >

Enrollment drops off sharply after the primary cycle. At the lower-secondary level, the overall net enrollment of those ages 11-13 was just 22.7 percent, the gross enrollment was 58.6 percent, and the age-specific enrollment rate was 82.6 percent. The much larger age-specific enrollment rate indicates that the majority of children ages 11 to 13 attends school but most are still at the primary level. A similar picture emerges at the upper-secondary level: the net enrollment rate was 13.4, the gross enrollment rate was 30.9, and the age-specific enrollment rate was 60.6. Thus, each enrollment rate measure paints a very different picture for Lao PDR.

The enrollment rates also mask wide variation by gender, ethnolinguistic affiliation and residence. The patterns in these differences are clear: urban children are more likely to be in school than rural children, LT children are more likely to be in school than NLT children, boys are more likely to be in school than girls, and nonpoor children are more likely to be in school than poor children. By looking across all these groups at once, we note more extreme disparities, indicating that multiple sources of disadvantage compound inequalities. Taking poverty into account as well as gender, ethnicity and residence, age-specific participation rates for children ages 6-10 range from 43.2 percent for poor NLT girls in rural areas to 92.5 percent for nonpoor LT boys and girls in urban areas—an immense difference (Table 4). Differences between these two groups are also large with respect to gross enrollment rates (70 versus 132.7 percent) and net enrollment rates (42.6 versus 89.4 percent). Hence, although Lao PDR has achieved significant progress in closing education gaps over the past decades, reducing education inequalities is still a huge challenge that policy and the economy must address.

<Table 4 about here>

As one would expect, the group inequalities at the secondary levels are even larger than at the primary level. The net enrollment rate at the lower-secondary level ranges from a low of 4.7 percent for rural NLT girls to a high of 45.0 percent for urban LT boys, a ten-tuple difference (Table 5). At the upper secondary level, the range is even wider: the overall net enrollment ranges from 1.6 percent for rural NLT girls to a high of 23.8 percent for urban LT boys (Table 6). These net enrollment rates, however, do not capture the proportion of youth who are actually in school in either of the two secondary cycles. To illustrate this point, consider that although only 4.7 percent of rural NLT girls ages 11-13 are enrolled in lower-secondary schools, 59.0 percent of them are actually in school, though most are

inflated when considering the children on vacation. In general, they were higher by some 10 percentage points, depending on location. However, when we disaggregate enrollment rates by urban and rural residence, this discrepancy is not quite as large. If all the children on vacation during the survey are considered as not enrolled, enrollment rates are greatly understated.

probably still in primary schools. Similarly, although only 1.6 percent of rural NLT girls ages 14-16 are enrolled in upper-secondary schools, 31.1 percent of them attend school, most being in either primary schools or lower-secondary schools. These large gaps are a result of children starting primary school much later than the official entry age of 6, and of some failing and repeating grades. In settings where these phenomena are frequent, age-specific enrollment rates, instead of gross or net enrollment rates, provide helpful aspects about schooling outcomes.

<Tables 5 and 6 about here>

Introducing the poverty dimension adds to the overall picture of large education inequalities. The net enrollment rate at the lower-secondary level among the poor, rural NLT children is just 1.9 percent for girls and 3.9 percent for boys, as compared with 7.6 percent and 10.5 percent for nonpoor, rural NLT girls and boys, respectively. The gross enrollment rates at this level are also low for poor, rural NLT children—just 8.9 percent for girls and 20.0 percent for boys—but these indicate that at least three times the number of these youth are actually continuing on to the lower-secondary level, but at older ages than 13. By comparison, poor, rural LT youth are enrolled in secondary schools at significantly higher rates. For example, 12.4 and 13.7 percent of boys and girls, respectively, are enrolled at the lower secondary level, percentages that are higher even than those of nonpoor, rural NLT youth. These gaps are wide also when comparing the nonpoor, rural youth: LT youth are more than twice as likely to be enrolled in lower secondary schools as NLT youth.

The numbers for the NLT population hide considerable heterogeneity across the minority groups that make up the NLT ethnic category. Focusing on just the net enrollment rates at the primary education level, we see that some sub-groups fare much worse than others (Table 7). For example, in the rural population, compared to LT boys aged 6-10 of whom 77.8 percent were enrolled in primary schools, the net enrollment rate was 55.7 percent for Mon-Khmer boys and 35.9 percent for Chine-Tibetan boys. Among rural girls, compare 77.7 percent for LT girls with 53.0 percent for Mon-Khmers and 30.2 percent for Chine-Tibetans. In urban areas, ethnolinguistic differences are not significant except for Mon-Khmer children whose lower enrollment rates were much lower than those of other groups, but the limited size of the NLT urban sample weakens such comparisons.

<Table 7 about here>

Education inequalities are evident in the extreme by the proportion of youth who have never attended school. For this, we look at a slightly older group because school entry is typically late. Overall, 10 percent of children ages 10-16 had never attended school in Laos, but there are notable differences in this proportion by gender and ethnicity as well as by urban-rural residence. In rural areas, 34.3 percent of NLT girls and 6.0 percent of LT girls had never attended school. The corresponding numbers for rural boys are 17.2 percent and 3.8 percent, truly immense differences even within rural areas (Table 8). Poverty further accentuates the gaps, even just among girls: In rural areas, 39.8 percent of NLT girls and 10.6 percent of LT girls from poor families have never attended school as compared with 28.4 percent of NLT girls and 4.2 LT girls from nonpoor families. The challenge of just getting children to enter school is obviously still a crucial challenge for Lao PDR—and it is plainly evident that efforts to remedy this should be targeted to minority children from poor, rural households.

<Table 8 about here>

Access and the quality of schools

The availability of schools within a reasonable distance from the household has been shown to be an important determinant of whether or not a student goes to school (see Orazem and King 2008 for a review of the literature).²⁰ As noted above, nationally 84 percent of the population lives in a village with a primary school, but this proportion varies across population groups, with LT households more likely to have access than NLT households. In both urban and rural areas, this measure of school supply does not necessarily mean that children residing in a village without a school do not have access to a primary school as they may attend school in neighboring villages. In urban areas, perhaps because of better means of transportation, children are more likely to attend school in the next village or locality.

Our survey of primary schools in the same villages as LECS3 sample households provides detailed information about the schools that children were attending.²¹ The data show that rural schools are far more likely to have multigrade classrooms than urban schools. Nearly half of rural LT households and 65.6 percent of rural NLT households have schools that have multigrade classrooms (Table 9). In such classrooms, the teacher has to impart lessons to students of widely different ages and grades, a very challenging job to do well. By comparison, only 8 percent of urban LT households have schools that have multigrade classrooms. This immense difference between urban and rural schools probably reflects an imbalance in the deployment of teachers among provinces and schools, resulting in an oversupply of teachers in some areas and severe undersupply in others (ADB 2000).²²

<Table 9 about here>

Balancing teacher supply is not just about getting the numbers right, however. The quality of schools depends on who the teachers are and how well prepared they are to teach, and so the distribution of teacher characteristics matters also. In urban areas, less than one-third of teachers are men; the opposite is true in rural areas where teaching probably represents a coveted opportunity for wage employment for more educated men. LT children are taught predominantly by LT teachers (90 percent in urban areas and 70 percent in rural areas) while a much smaller proportion of NLT children are taught by LT teachers. This pattern suggests that schools tend to rely on local teachers, especially in rural areas. This has pros and cons: Because local teachers are more likely to stay on, teacher attrition is going to be less of a problem; because local teachers know the local language and customs, they are likely to be better able to communicate with students and

²⁰ Besides availability, other supply factors are also expected to influence that decision and, according to educators, whether students learn or not. Studies have focused on measurable indicators such as the pupil-teacher ratio, educational background and work experience of teachers, the availability of textbooks and learning materials, and the physical condition of school buildings as indicators of school quality. Others have also used the performance of students on standardized tests (controlling for their socioeconomic background and innate ability) as a measure of school quality.

²¹ The school survey was fielded at the same time as the LECS3. As explained earlier, if a village did not have a school at the time of the survey, the closest school that village children attended was covered by the survey.

²² This deployment issue is partly a result of a quota system that requires newly trained teachers to return to their home district after training, thus restricting mobility and the capacity of the school system to balance teacher supply.

parents; but because local teachers in NLT areas may themselves have limited facility in the majority language, they may not be adequately effective in teaching their students the national curriculum.

The education and experience of the average teacher are highest in urban areas for the LT and lowest in rural areas for the NLT, although the gap is not so large. On average, urban teachers have 10 years of schooling and about 12-15 years of experience; teachers in schools accessible to NLT children in rural areas have, on average, nine years each of schooling and experience in schools. The latter may well reflect the more recent expansion of schools in areas where the rural NLT live.

Finally, based on a set of school characteristics, the schools that are accessible to children from urban households and LT households are better equipped than the schools accessible to rural and NLT populations.²³ The disparities are smaller with respect to the basic inputs of classrooms with blackboards and functioning roofs, but much greater with respect to whether the school has electricity or drinking water. On average, the large majority of households, urban or rural, have access to primary schools that have classrooms with blackboards and about three-fourths have schools that have non-leaking roofs. In urban areas, 68.6 percent of LT households have access to schools with electricity, while in rural areas, only 33.8 percent of LT households do; and in both urban and rural areas, it is much worse for NLT households than LT households.

Using a multivariate analysis (described below), we find that multigrade schools are associated with lower enrollment rates and that children who have access to a complete primary school are 25 percent more likely to be enrolled. Better school infrastructure—as measured by the availability of electricity, the existence of desks for each student, and the physical condition of classrooms (as measured by the proportion of classrooms with non-leaky roofs)—also promotes enrollment, though this association is considerably weaker than having a complete school without multigrade classrooms. The distance from the primary school to a city or to a lower-secondary school and the average time it takes for a student to walk from home are negatively related to enrollment, supporting further that school supply matters.

Determinants of school enrollment

Here we examine the determinants of schooling in Lao PDR using a set of individual and household data that reflect the factors discussed above using multivariate regression analysis. We estimate a model with individual, household, community, and school variables for the two subgroups based on ethnolinguistic affiliation, and then for more disaggregated samples based on all three characteristics at the same time. We find striking differences in the normalized coefficients of the probit model, estimated as marginal effects, between LT and NLT children (Table 10). Indeed, Wald tests reject equality of the models across these groups.

<Table 10 about here>

²³ Past studies on Asian countries have found that distance to school deters enrollment (Anderson, King, and Wang 2002 for Malaysia; Maliki 2005 for Indonesia), tuition reduces enrollment (Behrman and Knowles 1999 for Vietnam), and having more educated teachers increases enrollment (World Bank 2005 for Cambodia).

In addition to gender, urban-rural location, and ethnolinguistic affiliation, the regressions include measures of household welfare (proxied by consumption expenditures), parental education, the age-gender composition of the household, and village and school characteristics.²⁴ However, we highlight only the regression results that pertain to ethnic differences; the full results are described in King and van de Walle (2008). To aid interpretation, we transformed the estimated probit coefficients into marginal effects, evaluated at the means. Standard errors in all estimated regressions have been corrected for heteroscedasticity and clustering at the village level.

The results confirm the inequalities across ethnolinguistic groups documented above: NLT children (except for Mon-Khmers) are significantly less likely to attend school than LT children, and this relative disadvantage is largest (by 20 percent) for Chine-Tibetans.²⁵ These results emerge even when controlling for household expenditures which measure the family's ability to incur schooling costs and also for a host of household, school, and community characteristics.²⁶ Interactions between province and urban-rural location—38 residence dummy variables in all—capture geographical variation and heterogeneity not captured by other included variables, including an area's ability to supply schools and the local demand for an educated labor force.²⁷ Although a strict urban-rural dichotomy is seldom an accurate representation of economic difference across areas, our results indicate that urban areas are associated with higher enrollment, controlling for other

²⁴ The elasticity of demand for schooling with respect to household income or expenditure can be larger than in developed countries. For example, elasticities reported by (or derived from reported estimates) by Bhalotra and Heady (2003) for Pakistan and Handa (2002) for Mozambique are near or greater than 1.

²⁵ The results confirm that enrollment rates peak at ages 9–11 and decline thereafter. A disability lowers a child's probability of attending school by 13 percent. Household size does not matter for enrollment, but the composition of the household does. Controlling for household size, the higher is the proportion of household members under six or 6–16 years of age, the lower is the probability that a child is in school. This negative association (of 15–24 percent) is largest with respect to the share of under-six children. One interpretation of these results is that they capture the effect of schooling costs, both direct and opportunity costs, on families with more children. Surprisingly, even the number of adult men relative to adult women in the household is negatively associated with school enrollment, albeit with less statistical significance.

²⁶ All else equal, increasing log per capita consumption of the household by one unit—increasing the level of consumption by a factor of almost three—increases the probability of a child going to school by 6 percent. The probit regression of schooling on per capita expenditures (and no other regressors) gives a highly significant (z -stat = 11.2) estimated coefficient of 0.21—more than three times the size of the partial regression coefficient including the controls. Controlling for other observable characteristics, however, this coefficient falls, suggesting a considerably lower importance of living standards for achieving universal primary school enrollment. Related to the expenditure variable is the completed education level of the household head and his or her spouse, but having controlled for household expenditures, these education variables are probably measuring parental preferences for schooling. We expect more educated parents to value their children's schooling more highly—indeed child enrollment is associated positively with parents' education, albeit at a weaker level than expenditures. Our estimates also include school factors for which we have measures. In general, these variables pertain to the school nearest to the household, whether within the community or in the next village or city—that is, the school attended by most households in the sample area. Compared with the basic model without school variables, the coefficients of the household and child characteristics in the expanded model remain qualitatively the same, but there is loss in coefficient size for some due to a positive correlation between household and community variables and the added school variables. The ethnicity variables also lose statistical significance, except for the variable representing Chine-Tibetan affiliation. In addition a child is now more likely to be enrolled in school in male-headed households.

²⁷ With one exception we obtained positive coefficients for the urban-province variables; with two exceptions we obtained negative coefficients for the rural-province variables.

characteristics. Furthermore, the altitude of the village measures the specific effect of living in highland areas where schools tend to be of lower quality and are more difficult to reach. And even while controlling for ethnolinguistic affiliation, residing in highland villages is associated with a 7-percent lower probability of being enrolled.

Disaggregating the full sample by urban-rural residence yields some striking effects which suggest that keeping the geographic samples together hides important differences between them. Highlighting the results that pertain to ethnolinguistic grouping, we find that only the Chine-Tibetan children are significantly less likely to be enrolled in school as compared with the LT children. Disaggregating by gender, we find significant ethnolinguistic differences are more pronounced for girls than for boys. Compared with boys, girls from the Chine-Tibet group are much less likely to be in school than those from the LT group. Living in the highlands or a priority district has a greater (negative) effect on girls, indicating that girls' enrollment is more highly correlated with the household's living standard and the economic value of schooling in the community.

Finally, we estimate the same probit models separately for each of four groups defined by residence, gender, and ethnolinguistic affiliation.²⁸ Several differences among the four groups are noteworthy:

- Breaking down the rural sample reveals that the demographic composition variables are significant only for girls and that the size of the coefficients for these variables is far larger for NLT girls than for LT girls. The results strongly suggest that girls' enrollment is reduced by household demands on their time—school-age girls are expected to substitute for adult women caring for younger children and performing chores. The coefficient of the share of girls ages 6–16 is somewhat smaller than the other coefficients, perhaps indicating that the presence of other school-age girls diminishes the burden on any one school-age girl in the household.

- School-age girls are the only subgroup for whom per capita household consumption has an insignificant effect on the probability of going to school.

- Disability has a considerably larger (and significant) negative effect on enrollment for rural LT girls than for other subgroups.

- Having a complete primary school without multigrade classrooms in the village is the school attribute that has the largest and most consistently significant effect on enrollment across the models. Disaggregating the samples reveals that among the rural groups, the effect is largest for the NLT, partly reflecting the greater shortage of such schools faced by rural NLT children. This effect is larger for girls, possibly because of a greater reluctance to send girls outside the village to attend school due to risk and cost.

- Living in a highland village has a significant negative effect on enrollment only for rural LT girls. Having controlled separately for school supply conditions that partly

²⁸ For the rural subgroups, Wald tests reject the hypothesis that the models for boys and for girls are equal within the Lao-Tai population ($\chi^2(55) = 234.7$, probability $> \chi^2 = 0.0000$) or within the non-Lao-Tai group ($\chi^2(55) = 322.6$, probability $> \chi^2 = 0.0000$). The tests also reject equality of models among the rural ethnolinguistic groups for girls ($\chi^2(57) = 4126.5$, probability $> \chi^2 = 0.0000$) and for boys ($\chi^2(57) = 6760.2$, probability $> \chi^2 = 0.0000$). For the urban subgroups the tests reject equality of models for boys and girls ($\chi^2(57) = 1795.8$, probability $> \chi^2 = 0.0000$). The urban sample includes too few observations to disaggregate by ethnolinguistic group.

measure the cost of schooling, this result suggests that girls' enrollment is also responsive to the perceived returns to education, which are likely to be low in the rural highlands.

4 Health

In this section we turn to patterns regarding health status, illness and disability, and health service utilization. We are interested in health indicators over the life course, but we do not have panel data on any one individual. Instead, we assume that the current average health status at different ages in the population approximates the health profile and the corresponding health care needs in the country. The health status of current children may be a poor predictor of the health status of future children because of future improvements in, say, public health, but the health status of young children today could serve as predictors of the future (adult) health concerns in a country.²⁹

The LECS3 collected information on a number of health-related factors, including self-reported health status, long-term and temporary illness, and the use of health services.³⁰ Self-reported measures of health are typically used in behavioral models, but their validity has been questioned because they may bring reporting biases that are systematically associated with the respondent's background characteristics. Since self-reported health reflects perceived health, it may measure something different from actual health, such as a person's belief that s/he can competently cope with a challenging physical situation. For the LECS3 there was only one respondent for the household questionnaire which may have attenuated this reporting bias but could have introduced measurement error because the respondent may not have accurate information about another household member's health status.

Self-reported health status

The survey asked the respondent to rate his or her health status as "very good", "good," "average," "bad," and "very bad."³¹ Transforming these responses into a dichotomy of "bad health status" and "not bad health status," the graphs in Figure 5 show that people feel a worsening of their health status with age; at the maximum about one-fifth reported

²⁹ Alderman and Behrman (2006) reviewed studies that show that low birthweight significantly affects later life outcomes in developing countries. Also, infections in very young children can have deleterious long-run consequences; inflammations early in life can lead to the development of atherosclerosis (Finch and Crimmins 2004). A study by Phimmasone et al. (1996) documents significant differences in "the prevalence of both stunting and wasting when comparing subgroups of children: urban children are less stunted and wasted than rural children, children of the lowland majority less than children of ethnic minorities, and children whose mothers had completed primary education less than children whose mothers had never been to school" (p. 5)

³⁰ The survey questions considered in this analysis are: How would you evaluate your health? Do you have any long-term illness, disability or permanent mark from an accident? Does this affect your ability to work/go to school or conduct other daily activities? Did you have any temporary health complaints in the past 4 weeks? Did your health complaints disrupt work, school or daily activities? During the last 4 weeks, did you seek treatment at a health facility or health provider for your health problem? What kind of health care facility or provider did you visit in the past 4 weeks? How many times did you visit a traditional health practitioner or traditional birth attendant in the past 4 weeks to obtain health care?

³¹ Respondents were also asked to compare their health status with the health status of others. We do not show these results because they are very similar to the responses to the question about rating their health status.

that they were in bad health at age 60 compared with 5 percent at age 30.³² Starting with the top graph, we see a notable difference between males and females in the LT urban residents, with women being more likely to report bad health than men from adolescence. In fact, urban men, regardless of ethno-linguistic affiliation, are less likely to report being in bad health, when compared with the rural population (not shown in the graph). As the bottom graph shows, in rural areas, from about age 20 LT men, like LT men in urban areas, are less likely to report bad health than rural women in general and also less than NLT men although this divergence occurs at a later age than 20.

<Figure 5 about here>

We estimate a regression of self-reported health status against reported illness and disability and a few background characteristics as a simple check on whether or not self-reported health status is related to specific health complaints (Table 11). First, we find that living standards are negatively associated with the probability of being in bad health using our two measures. We also find that self-reported bad health is positively associated with age, although the size of the association is quite small when we control for the existence of a health problem, implying that aging alone does not have a huge effect on the self perception of own health status. Having an illness or disability, whether a long-term condition or a temporary problem, however, is strongly associated with self-reported health. Those people with a long-term illness or disability were 30 percent more likely to report being in bad health; those who had suffered a temporary illness four weeks prior to the survey were 15 percent more likely to do so. Women were more likely to report being in bad health, while the LT and urban residents were less likely to be in bad health. As with age, these associations are small in magnitude once the existence of a long-term or a temporary health problem has been taken into account. We examine also gender-ethnicity interaction terms but they are not statistically significant.

<Table 11 about here>

Patterns in illness and disability

LECS3 obtained separate data on long-term illness and disability and temporary health problems. We continue to examine age curves since they suggest life cycle patterns in health problems and show differences in such patterns across population groups.

Among children under 15, less than 5 percent are reported to be afflicted with long-term illness and disability. This prevalence rate increases with age, and by age 60, 10-15 percent of the population is reported to have long-term health conditions (Figure 6). There are no distinct differences across population groups during early childhood; beyond early adulthood the prevalence rates diverge. The patterns that emerge are that the prevalence rates for the rural males and females are higher than those for urban males and females. Focusing on rural areas, NLT men have a higher prevalence of long-term illness or disability than LT men, especially after age 40 (middle graph). The pattern among rural women is not as clear.

³² To help discern the patterns, we use STATA's "lowess" command to smooth the curves; this is a non-parametric estimate using moving averages. For each distinct value of x it produces a fitted value y by running a regression in a local neighborhood of x, giving more weight to points closer to x. The size of the neighborhood is called the *bandwidth*; we use .4 throughout this paper, one-half the command's maximum smoothing.

<Figure 6 about here>

The age pattern of the incidence of temporary health illness (during the four weeks prior to the survey) is quite different from that of the prevalence of long-term ailment or disability. Its distinct V-shape is not surprising: Early childhood diseases such as diarrhea, fevers and common respiratory illness likely account for the high incidence of temporary health problems from birth (an incidence rate of 20-30 percent) (Figure 7). This incidence falls until early to late adolescence (below 10 percent) before it starts to rise and reach about 25 percent at age 60 as the effects of aging manifest themselves.

<Figure 7 about here>

There is more divergence in the rate of temporary health illness across population groups than in the prevalence of long-term illness or disability. In the simple dichotomies by gender, residence and ethno-linguistic affiliation, we find that the incidence of temporary health problems is higher among females than males from late adolescence, among rural than urban residents from late adolescence, and among the NLT than LT people from childhood. Combining the gender, residence and ethnolinguistic groupings, we find that in rural areas male LT have the lowest incidence and female NLT have the highest incidence of temporary health problems, but the curves diverge only after childhood. In urban areas, focusing on just the LT population, an interesting pattern is that urban boys have a higher incidence of temporary health problems than urban girls, but as in rural areas, from adulthood the incidence rates for men are lower than those for women.

The number of days of primary activity (such as work or school) missed as a result of illness is a common measure of the severity of illness; but because this measure reflects not only the severity of illness but also the opportunity cost of missed days of work or school, its interpretation is not straightforward. For the same illness, one person might continue to work while another might stop. Keeping this in mind, we see that similar to illness prevalence, this variable tends to increase with age, although this pattern seems quite unstable for urban LT males. In rural areas, due to illness very young children miss primary activities for an average of five days over a four-week period, and 60-year-olds miss 6-10 days of activities over the same period. There are no clear differences across the population groups, except that NLT males tend to report fewer missed days of their primary activity from early adolescence compared with LT males or females. This is striking given that NLT males are the most likely to report illness or disability.

Health service utilization

We examine the percentage of the population reporting illness who sought care or treatment at a health facility or provider four weeks prior to the survey.³³ Focusing first on utilization rates by age, in urban areas these rates start at about 25 percent for LT infants of both sexes and then drops as these children get older (Figure 8). At all ages in rural areas, there is a significant difference between the LT and NLT populations: on average, LT males and females are about 10 percentage points more likely to seek treatment when ill than the NLT population, indicating perhaps both limited access to and demand for services within the NLT population. There is no clear gender difference as we see among the urban LT population, but if one considers only on a two-way disaggregation by gender and ethno-linguistic affiliation, a more defined life-cycle pattern

³³ The question pertains to public and private facilities or providers, as well as traditional healers.

emerges for females than for males—although only for the LT population. Women’s utilization rates increase after age 10 and eventually reach their peak during their childbearing and childrearing ages (and exceed those of men) before declining just as men’s utilization rates start to rise around age 50.

<Figure 8 about here>

Summing up the group differences with respect to health, LT males tend to report the best health status, have the lowest prevalence of illness or disability, and are more likely to seek treatment when ill than any of the NLT groups. By comparison, rural NLT females are the most likely to report being in bad health, have the highest incidence of temporary health problems, and like NLT males are less likely to seek treatment when ill than the LT groups. NLT men are not far off from NLT women in terms of illness rates, but they miss fewer days of primary activity when they are sick than any LT group in rural areas.

5 Time use and child labor

Child labor is a topic that has received much attention recently because of concerns about human rights violations and also because of its potentially adverse long-run impact on child development, in particular on schooling and health status (Edmonds 2008). The LECS3 survey allows us to examine not only whether a child is employed for pay but also what work activities a child engages in. The survey contains a time use module covering all household members; unfortunately, the module was applied only to members aged 10 years and above, so the possibility that children below 10 might be working cannot be explored. Table 12 shows the average number of hours per day spent on various activities for children (10 through 16). For comparison, Table 13 shows time use by adults aged 17 through 55. Each table is broken down by gender, urban and rural location, and ethno-linguistic affiliation.

A few caveats related to measurement are worth noting; these measurement problems are common to most, if not all, time use studies. First, the reporting of time use is always tricky because of imperfect recall; because an adult respondent might not be aware of the activities of all household members, especially by those who spend time outside the home; and because of joint activities, that is, activities that are undertaken simultaneously (e.g., caring for a child while cooking). The LECS3 mitigates the problem of imperfect recall by using as the reference period the “last 24 hours” prior to the survey, and prods the respondent about time spent on specific activities. Second, time use is highly seasonal and so a short recall period and a survey conducted once will not capture the variation in time use during the year for a specific individual. For example, children are in school for only part of the week and only part of the year. However, this is less of an issue when looking at sample averages across individuals or households. The LECS3 sampling design and the interview schedule, whereby households from a given geographic area are interviewed at different times of the year, reduces the problems related to the seasonality of incomes and many activities. Third, as with all household surveys, children who live outside the home are going to be missing. If those children reside outside the home for work or schooling purposes, then the data obtained from children remaining at home are likely to underestimate work and school hours of children.

The time use of school-age children suggests that the ethnic and gender inequalities are likely to persist in the near future. Rural children attend fewer hours of school than urban

children (Table 12). The length of the school day is prescribed, so this lower average reflects the fact that more children in rural than in urban areas are out of school. However, among rural children, it is NLT children who spend the least time at school per day (2.6), especially girls (2.1 hours versus 3.1 hours for the boys). In this group, poor girls spend even less time at 1.8 hours per day on average, again reflecting their lower rate of enrollment. Instead, they spend an average of five hours each day working both on agriculture and on home production — collecting wood and water and looking after younger siblings and elderly family members.

<Table 12 about here>

In urban Laos, poor NLT girls also work harder than any other group at 4.9 hours a day on average, but our sample size is too small to support a strong statement about this. Otherwise, the biggest differences across urban children appear to be in the composition of their work hours. NLT children spend more of their non-home production-related working time on agricultural production, while their LT counterparts are more likely to be employed for a wage or on a family business. Within each ethnolinguistic group, gender differences are relatively clear and there appears to be an economic gradient.

Adults work an average of 6-8 hours within a 24-hour period. Because home production work can total as many as five hours, the total work hours for women exceed that of men, with the largest gap (about two hours) being among urban NLT men and women (Table 13). As expected, most of the non-home production work in rural areas is in agriculture, while it tends to be in wage and self-employment in urban areas. However, in both urban and rural areas, the LT engage in more off-farm work than do the NLT. Focusing on just the rural population, on average, both LT men and women work more hours than NLT men and women when we exclude time spent on ‘travel’ and ‘other’ from this total. Travel could be work related and it could not be; it is unclear what ‘other’ refers to. If this time is considered also as work, then rural NLT women work the most, followed by LT women, NLT men and LT men, in that order. For all groups there is a clear economic gradient: Poor women work many more hours than men do, and they also work more than non-poor women but this difference derives mainly from home production. Consistent with the work patterns, LT men have the most leisure hours and NLT women have the least; and while leisure hours converge as per-capita consumption rises, this convergence does not include NLT women.

<Table 13 about here>

6 Conclusions

The household survey evidence discussed here confirms that despite a clear narrowing in disparities in literacy and completed schooling among ethno-linguistic groups in Lao PDR, non-Lao-Tai (NLT) ethno-linguistic minority groups are disadvantaged in numerous respects relative to the Lao-Tai (LT) majority. While one in four LT lives in poverty, one in two among the NLT does so. NLT adults continue to have fewer years of completed formal schooling and their children are less likely to attend school, partly because they have poorer access to schools and to schools that have adequate instruction. A larger

share of the NLT population lives in villages that have no health facilities at all. They predominantly live in isolated rural highland areas far from public services and basic infrastructure services. Similar to the rural LT households, rural NLT households are primarily farmers, but by and large they derive livelihoods from cultivating less productive lands in harsher upland areas and rely much more on forest products as an income source than do the rural LT households. They have successfully adapted their agricultural and livelihood practices to survive in such environments.

Amid the above litany of disadvantages of the NLT relative to the LT, it is important to recognize that the somewhat arbitrary aggregation of households into LT and NLT ethno-linguistic groups hides a clearer picture of disparities. Some among the NLT ethnic groups are considerably worse off in many respects than others. And among them, those who live in rural areas are typically more disadvantaged although we also noted some deep pockets of urban poverty as well. Finally, an important dimension of further disadvantage is gender. NLT adult women and girls lag behind NLT men in numerous ways. Disadvantage is felt along all these dimensions in varying degrees. This fact must be front and center when thinking about policies to redress inequalities and raise living standards for all.

Existing government policies focus on providing access to basic services, land tenure and agriculture. Some of these policies require that highland NLT households abandon their villages and environments and re-settle in lowland “focal” areas where it is easier to supply public services and they can engage in more productive paddy wet-rice cultivation. These relocation policies are also promoted as ways to safeguard forests and the environment by putting an end to swidden agriculture. However, many observers have been critical of the policies, their underlying assumptions and their results. Critics note that in practice the relocation areas are typically already occupied by LT who have made claims on much of the productive land and resent the incoming households and the associated pressure on resources (Cohen 2000, Evrard and Goudineau 2004, Rigg 2006, Baird and Shoemaker 2007). The infrastructure and social services are often inadequate, resulting in a decline in living standards, and NLT households have had trouble adapting to the new environments and creating livelihoods there. They also face health problems such as malaria that were not common in the highlands.

Policies that promote a LT-centric development approach are not likely to be broadly successful. The results of this study cast doubt on this approach. Our regressions of household per capita consumption suggest that the underlying models of living standards and human development are structurally different across the groups. This in turn suggests that to be successful, policies aimed at raising welfare levels must be tailored to each group’s specific needs and capabilities. Looking forward, our study suggests that policies must also address female disadvantage in order to ensure that future generations of NLT have better human capital. Failure to do so may well mean that existing disparities and the currently high poverty levels found among the NLT ethno-linguistic minorities will be reproduced in the next generation.

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Appendix 1. Three education enrollment rates

The following equations define three enrollment measures that are commonly used and indicate how they are related:

$$\text{Age-specific Enrollment Rate}_j = (\sum_{i=1,2,3} \text{Enrolled}_j^i) / \text{Population}_j$$

$$\text{Net Enrollment Rate}_i = \text{Enrolled}_j^i / \text{Population}_j$$

$$\text{Gross Enrollment Rate}_i = (\sum_{j=6-10,11-13,14-16} \text{Enrolled}_j^i) / \text{Population}_j$$

where j refers to one of three age groups (6-10, 11-13, 14-16), and i pertains to one of three school cycles (1=primary level, 2=lower-secondary level, 3=upper-secondary level). In principle, j could include any age group older or younger than the three age groups specified here, and i could include a pre-school cycle and the university level. We define the age-specific enrollment rate of children of age j to pertain to any school enrollment, irrespective of grade or cycle, and the gross enrollment rate in school cycle i to include all students in that cycle, irrespective of age.

Figure 2. Incidence of remittances by per capita consumption

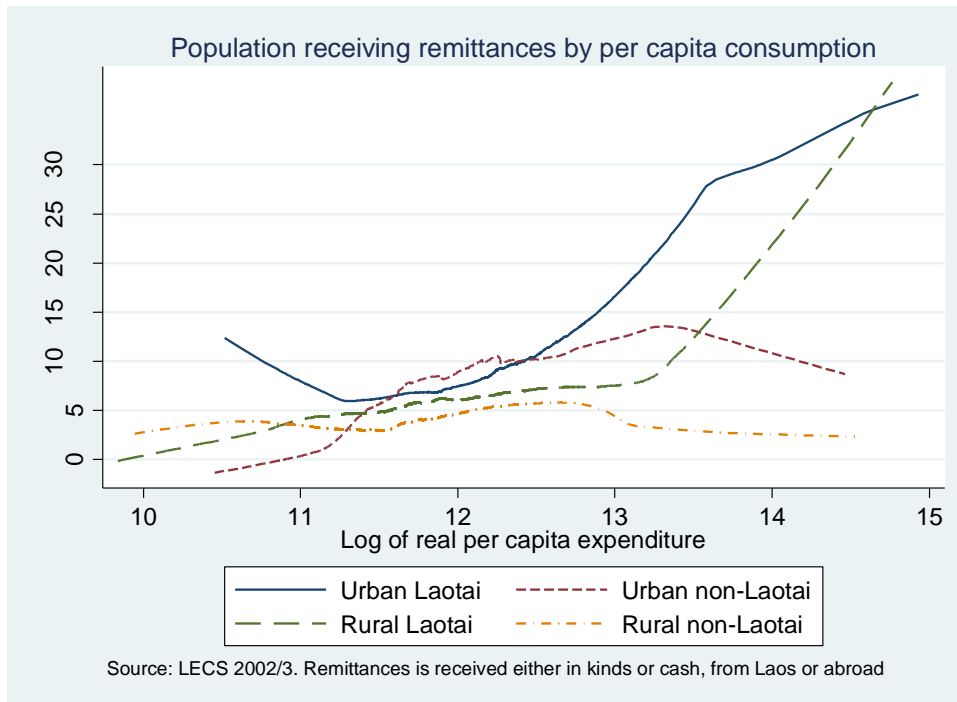
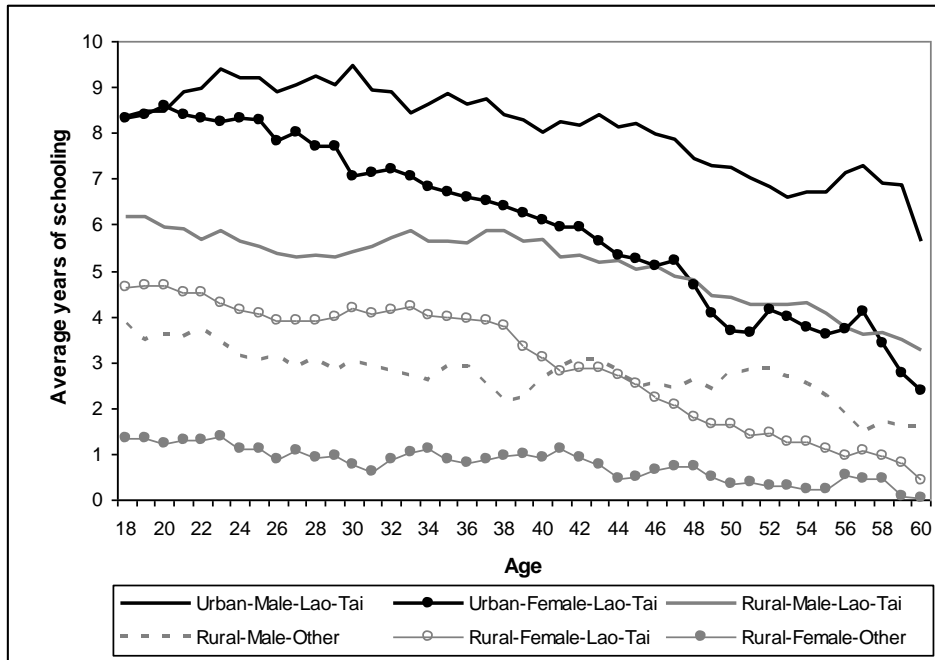


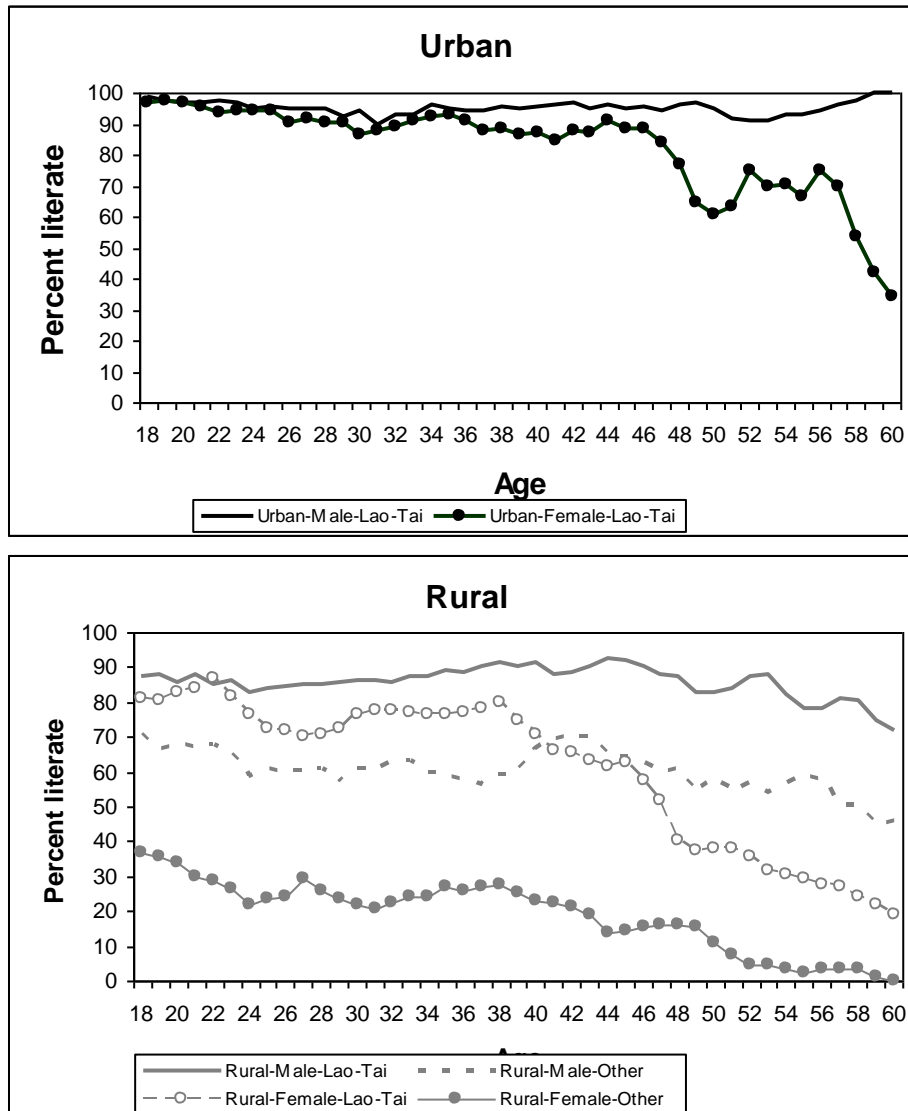
Figure 3. Average years of schooling, by age, gender, and ethno-linguistic group, 2002/03



Note: Data for urban non-Lao-Tai are not plotted because of small sample size. Graphs have been smoothed using three-year moving averages. Because the number of observations dwindles with age due to mortality, only data for those up to age 60 are plotted.

Source: LECS3, 2002/03.

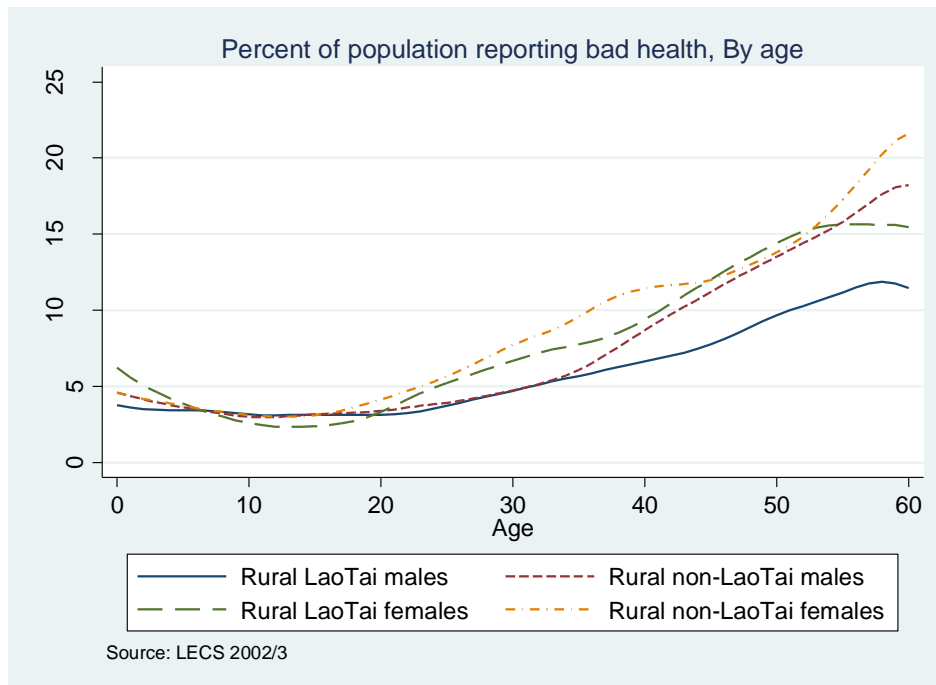
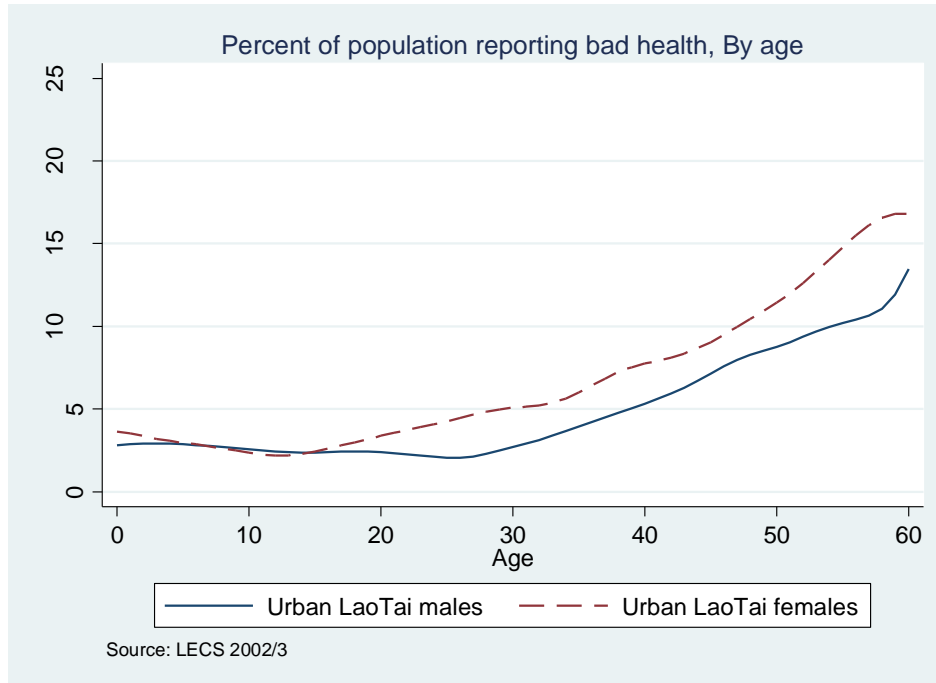
Figure 4. Literacy rates, by age, gender and ethno-linguistic group, 2002/03



Note: Data for urban non-Lao-Tai are not plotted because of small sample size. Graphs have been smoothed using three-year moving averages. Because the number of observations dwindles with age due to mortality, only data for those up to age 60 are plotted.

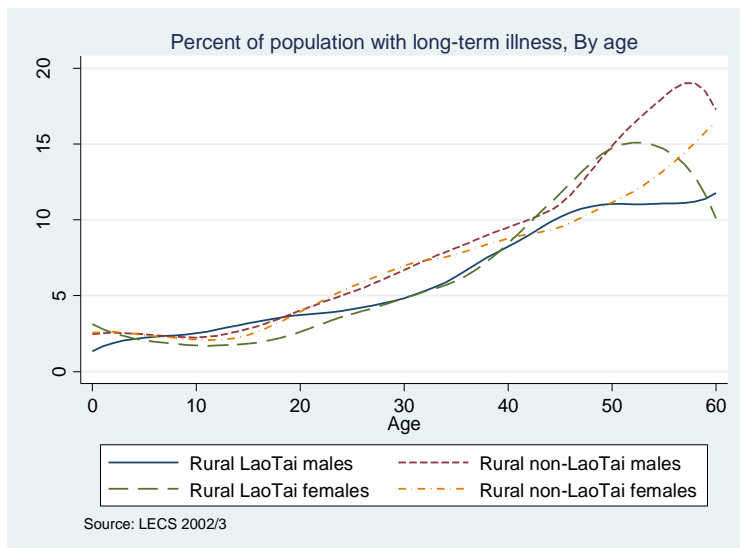
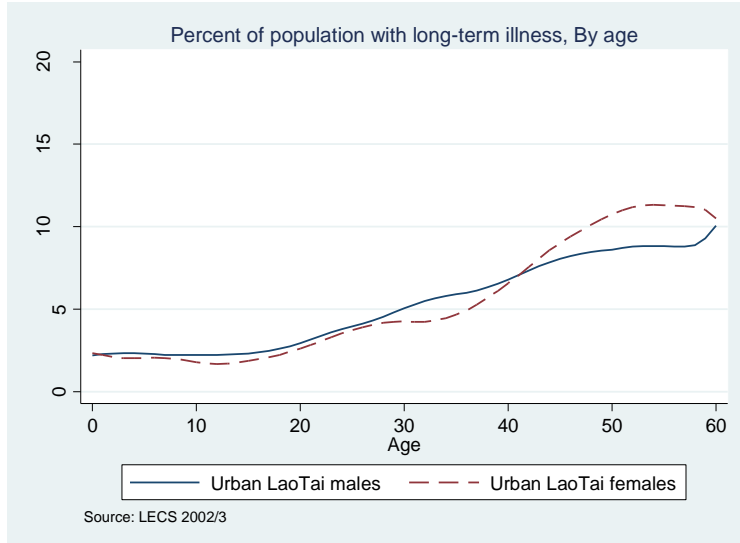
Data source: LECS3, 2002/03.

Figure 5. Self-reported health status over four weeks prior to survey



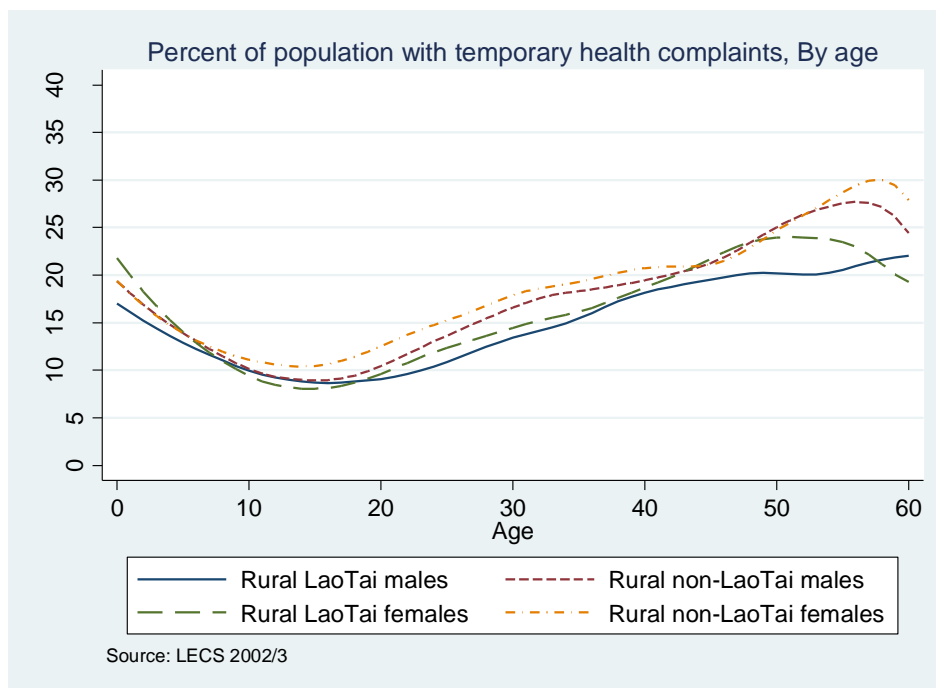
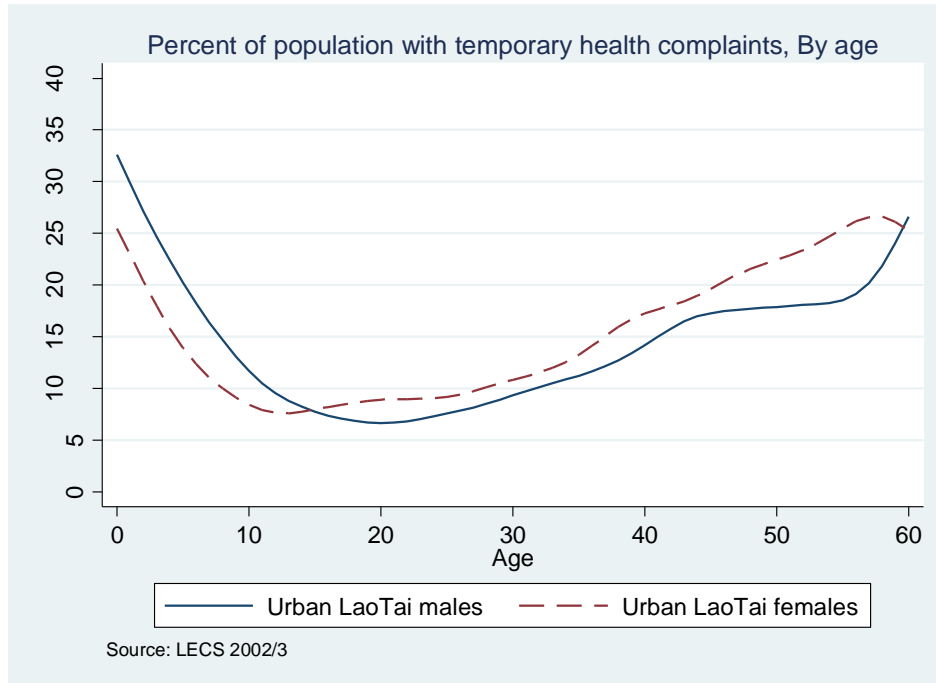
Notes: Because of the small NLT urban sample, we have omitted the NLT curves. Graphs have been smoothed using STATA’s “lowess” smoothing command with a bandwidth of 0.4 (see footnote x). Because the number of observations dwindles with age due to mortality, only data for those up to age 60 are plotted.

Figure 6. Prevalence of long-term illness or disability



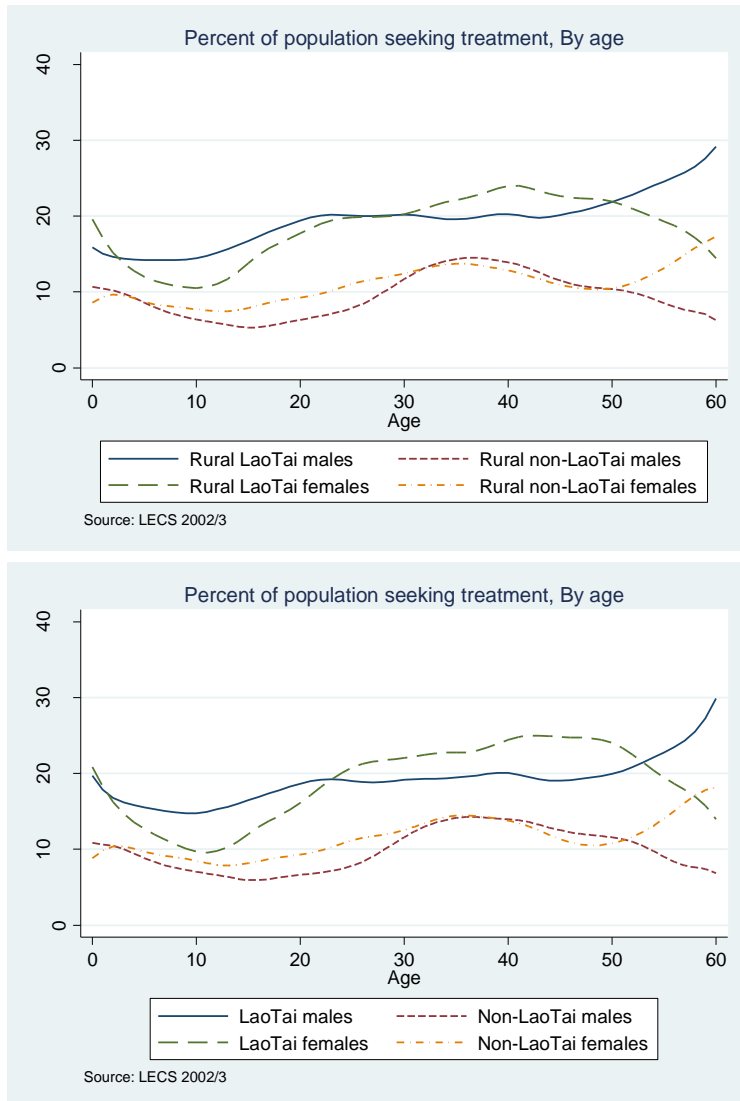
Notes: Graphs have been smoothed using STATA’s “lowess” smoothing command with a bandwidth of 0.4 (see footnote x). Because the number of observations dwindles with age due to mortality, only data for those up to age 60 are plotted

Figure 7. Incidence of temporary health problems over 4 weeks prior to survey



Notes: Graphs have been smoothed using STATA’s “lowess” smoothing command with a bandwidth of 0.4 (see footnote x). Because the number of observations dwindles with age due to mortality, only data for those up to age 60 are plotted

Figure 8. Demand for treatment at a health facility or provider



Notes: Graphs have been smoothed using STATA's "lowess" smoothing command with a bandwidth of 0.4 (see footnote x). Because the number of observations dwindles with age due to mortality, only data for those up to age 60 are plotted

Table 1. Poverty by ethnicity, urban/rural and elevation

	Lao Tai	Urban Non-Lao Tai	Total	Lao Tai	Rural Non-Lao Tai	Total	Lao Tai	Total Non-Lao tai	Total
Lowlands									
Poverty headcount (%)	15.85	36.98	17.19	28.42	55.07	33.62	23.83	52.56	28.18
Poverty gap (%)	3.15	6.85	3.38	5.70	15.46	7.61	4.77	14.27	6.21
Poverty severity (%)	0.96	1.83	1.01	1.64	5.83	2.45	1.39	5.27	1.98
No.	6665	700	7365	12948	4130	17078	19613	4830	24443
Midlands									
Poverty headcount (%)	27.29	62.59	37.73	28.11	49.44	36.24	27.96	51.13	36.48
Poverty gap (%)	5.94	16.90	9.18	7.79	13.15	9.83	7.46	13.63	9.73
Poverty severity (%)	1.78	6.17	3.08	3.35	4.60	3.83	3.07	4.80	3.71
No.	830	490	1320	4477	3019	7496	5307	3509	8816
Highlands									
Poverty headcount (%)	12.78	18.39	14.37	30.27	50.01	45.17	28.33	49.51	43.91
Poverty gap (%)	2.32	2.04	2.24	7.35	12.79	11.45	6.79	12.62	11.08
Poverty severity (%)	0.76	0.47	0.68	2.64	4.52	4.06	2.43	4.46	3.92
No.	316	168	484	3413	12383	15796	3729	12551	16280
Total									
Poverty headcount (%)	16.84	43.79	19.58	28.60	51.13	37.71	24.97	50.62	33.56
Poverty gap (%)	3.39	9.83	4.04	6.33	13.50	9.22	5.42	13.24	8.04
Poverty severity (%)	1.03	3.21	1.25	2.10	4.85	3.22	1.77	4.74	2.77
No.	7811	1358	9169	20838	19532	40370	28649	20890	49539

Source: LECS 2002/03

Table 2: Determinants of living standards

Variables	(1) All	(2) Urban Lao- Tai	(3) Urban Non- Lao-Tai	(4) Rural Lao-Tai	(5) Rural Non- Lao-Tai
Log household size	-0.502*** (0.017)	-0.561*** (0.046)	-0.538*** (0.173)	-0.533*** (0.026)	-0.423*** (0.023)
Lao-Tai household	0.095*** (0.028)				
Share of male adults, 17 to 55	0.101* (0.057)	0.017 (0.165)	0.093 (0.328)	0.210** (0.087)	0.058 (0.081)
Share of female adults, 17 to 55	0.110* (0.062)	0.076 (0.187)	0.441 (0.350)	0.147* (0.088)	0.027 (0.085)
Share of males aged 6 to 16	-0.113** (0.053)	-0.096 (0.161)	0.123 (0.474)	-0.044 (0.072)	-0.272*** (0.080)
Share of females aged 6 to 16	-0.134** (0.053)	-0.108 (0.165)	-0.058 (0.596)	-0.051 (0.071)	-0.301*** (0.071)
Share of boys aged 0 to 5	-0.335*** (0.060)	0.026 (0.201)	0.381 (0.651)	-0.425*** (0.087)	-0.453*** (0.082)
Share of girls aged 0 to 5	-0.392*** (0.059)	-0.464** (0.208)	0.623 (0.676)	-0.431*** (0.092)	-0.443*** (0.076)
Male household head	0.125*** (0.028)	0.158*** (0.055)	0.124 (0.195)	0.106** (0.043)	0.124** (0.048)
Age of household head	0.014*** (0.003)	-0.0005 (0.011)	0.100** (0.042)	0.017*** (0.004)	0.011*** (0.004)
Age of head squared/1000	-0.137*** (0.029)	0.002 (0.110)	-0.977** (0.417)	-0.165*** (0.040)	-0.114** (0.049)
Most educated member has:					
Some primary	0.059*** (0.022)			0.089 (0.057)	0.048** (0.024)
Completed primary	0.116*** (0.024)	0.037 (0.079)	0.032 (0.113)	0.161*** (0.058)	0.093*** (0.027)
Some lower secondary	0.120*** (0.026)	0.069 (0.080)	-0.033 (0.159)	0.167*** (0.058)	0.094*** (0.032)
Completed lower secondary	0.181*** (0.027)	0.150** (0.070)	0.028 (0.128)	0.229*** (0.060)	0.141*** (0.036)
Some upper secondary	0.177*** (0.033)	0.128 (0.090)	0.096 (0.122)	0.245*** (0.063)	0.077 (0.055)
Completed upper secondary	0.230*** (0.032)	0.178** (0.078)	0.210 (0.160)	0.271*** (0.063)	0.213*** (0.071)
Vocational training	0.303*** (0.033)	0.243*** (0.084)	0.543*** (0.161)	0.362*** (0.063)	0.201** (0.079)
University	0.418*** (0.051)	0.374*** (0.099)	0.430*** (0.144)	0.502*** (0.096)	0.212 (0.210)
Received remittances from abroad	0.208*** (0.043)	0.375*** (0.105)	0.138 (0.195)	0.128** (0.053)	0.192*** (0.067)
Highlands	-0.698*** (0.029)	0.175*** (0.033)	0.460** (0.171)	0.762*** (0.076)	-0.211*** (0.024)
Lowlands	0.222*** (0.019)	-0.556*** (0.045)	0.489 (0.547)	0.042 (0.076)	0.105 (0.076)
Constant	11.996*** (0.067)	12.992*** (0.285)	9.477*** (1.142)	11.783*** (0.096)	12.229*** (0.103)
Observations	8063	1382	213	3497	2971

R-squared 0.558 0.368 0.551 0.538 0.583

Notes: Estimates are obtained by OLS regression on log of real per capita expenditure. Robust standard errors in parentheses are clustered at village level. *** p<0.01, ** p<0.05, * p<0.1. Village dummies are included but not reported for ease of presentation. The omitted categories are the share of elderly (55 & above), no education for the most educated member, and the midlands. For the urban samples, no & some primary education are omitted due to small number of observations in the no education category. We tried a version that included size squared and the dependency ratio but found they added no explanatory power.

Source: Lao PDR Expenditure & Consumption Survey 2002/3

Table 3: Enrollment rates, By school cycle and age group

	School cycle. (Corresponding official age group)		
	Primary level (6-10)	Lower secondary level (11-13)	Upper secondary level (14-16)
Age specific participation	71.8	82.6	60.6
Net enrollment	70.4	22.7	13.4
Gross enrollment	114.9	58.6	30.9
Observations	7,616	4,394	3,886

Notes: (a) Missing enrollment data are treated as missing. See also footnote x for discussion of data on enrollment. (b) All estimates are population-weighted.

Source: LECS3, 2002/3

Table 4: Primary school enrollment rates, By residence, gender, ethno-linguistic group, and poverty status

	Urban				Rural						Total
	Lao-Tai		Total		Lao-Tai		Non-LaoTai		Total		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
TOTAL											
Age specific enrollment (6-10)	89.6	91.8	88.3	90.1	79.4	79.6	56.0	49.4	69.7	66.3	71.8
Net enrollment	87.0	90.4	85.6	88.6	77.8	77.7	55.1	48.7	68.4	65.0	70.4
Gross enrollment	130.6	132.3	133.36	130.4	126.0	122.0	104.3	83.7	117.0	105.2	114.9
Observations	462	430	567	537	1,700	1,571	1,612	1,629	3,312	3,200	7,616
NON-POOR											
Age specific enrollment (6-10)	92.5	93.6	91.4	92.3	85.9	85.4	62.7	57.2	78.4	75.8	80.4
Net enrollment	89.4	92.2	88.1	91.0	84.0	83.3	61.5	56.5	76.6	74.1	78.5
Gross enrollment	128.8	131.4	131.2	130.6	134.1	129.6	113.1	96.1	127.3	118.2	124.7
Observations	367	349	418	399	1,138	1,020	735	708	1873	1,728	4,418
POOR											
Age specific enrollment (6-10)	78.9	84.5	78.8	83.1	65.5	68.1	50.1	43.2	57.2	54.1	58.4
Net enrollment	77.9	83.2	78.1	81.1	64.7	66.8	49.5	42.6	56.5	53.1	57.6
Gross enrollment	137.7	136.2	139.9	129.6	108.7	107.1	96.8	74.0	102.2	88.4	99.7
Observations	95	81	149	138	562	551	877	921	1,439	1,472	3,198

Notes: (a) Missing enrollment data are treated as missing. See also footnote x for discussion of data on enrollment. (b) The denominator for the net and gross enrollment rates is the number of children aged 6-10. (c) All estimates are population-weighted.

Source: LECS3, 2002/3

Table 5: Lower secondary school enrollment rates, By residence, gender, ethno-linguistic group, and poverty status

	Urban				Rural						Total
	Lao-Tai		Total		Lao-Tai		Non-LaoTai		Total		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
TOTAL											
Age specific enrollment (11-13)	94.6	91.3	94.1	91.1	89.6	83.3	76.5	59.0	84.8	74.6	82.6
Net enrollment	44.7	42.8	40.6	41.3	22.5	25.0	7.1	4.7	16.9	17.7	22.7
Gross enrollment	108.1	91.9	101.9	91.2	69.9	53.9	29.1	14.7	54.9	39.9	58.6
Observations	350	347	428	395	999	1,017	751	804	1,750	1,821	4,394
NON-POOR											
Age specific enrollment (11-13)	96.0	92.3	95.3	91.9	90.1	86.0	79.5	66.2	87.2	80.5	86.4
Net enrollment	49.5	47.5	45.9	46.5	26.0	29.3	10.5	7.6	21.8	23.3	28.7
Gross enrollment	120.9	96.6	114.6	96.2	77.8	62.6	38.8	20.6	67.2	51.0	71.3
Observations	280	284	324	309	732	716	355	393	1,087	1,109	2,829
POOR											
Age specific enrollment (11-13)	89.4	86.8	90.2	88.0	88.2	76.3	73.7	51.9	80.3	64.1	74.7
Net enrollment	25.9	21.6	23.0	21.7	12.4	13.7	3.9	1.9	7.8	7.8	10.1
Gross enrollment	58.2	70.3	59.5	72.7	46.7	31.5	20.0	8.9	32.2	20.1	32.1
Observations	70	63	104	86	267	301	396	411	663	712	1,565

Notes: (a) Missing enrollment data are treated as missing. See also footnote x for discussion of data on enrollment. (b) The denominator for the net and gross enrollment rates is the number of children aged 11-13. (c) All estimates are population-weighted.

Source: LECS3, 2002/3

Table 6: Upper secondary school enrollment rates, By residence, gender, ethno-linguistic group, and poverty status

	Urban				Rural						Total
	Lao-Tai		Total		Lao-Tai		Non-LaoTai		Total		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
TOTAL											
Age specific enrollment (14-16)	81.1	74.6	81.5	73.8	67.4	51.7	57.8	31.1	64.2	44.3	60.6
Net enrollment	23.8	32.0	23.2	30.5	11.9	11.1	3.2	1.6	9.1	7.7	13.4
Gross enrollment	68.4	57.6	66.8	54.6	30.6	25.1	7.6	2.59	23.0	17.0	30.9
Observations	371	385	429	438	887	848	627	657	1,514	1,505	3,886
NON-POOR											
Age specific enrollment (14-16)	85.6	75.8	85.5	76.0	71.7	56.7	65.5	31.0	70.2	49.8	66.5
Net enrollment	26.1	33.6	26.2	32.9	13.1	13.3	4.6	3.0	11.1	10.5	16.6
Gross enrollment	74.0	60.8	73.4	59.6	33.9	29.1	11.1	4.1	28.4	22.4	38.1
Observations	308	317	342	340	656	625	293	323	949	948	2,579
POOR											
Age specific enrollment (14-16)	58.8	68.9	64.3	65.3	54.6	37.5	50.6	31.2	52.6	34.2	47.0
Net enrollment	12.3	24.2	10.4	21.4	8.3	4.9	2.0	0.3	5.1	2.5	5.9
Gross enrollment	40.6	42.4	39.1	35.9	20.7	13.6	4.3	1.1	12.4	7.0	14.5
Observations	63	68	87	98	231	223	334	334	565	557	1,307

Notes: (a) Missing enrollment data are treated as missing. See also footnote x for discussion of data on enrollment. (b) The denominator for the net and gross enrollment rates is the number of children aged 14-16. (c) All estimates are population-weighted.

Source: LECS3, 2002/3

Table 7: Net primary school enrollment rates, By residence, gender, ethno-linguistic group (%)

	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Lao-Tai	87.0	90.4	88.6	77.8	77.7	77.8	80.1	80.8	80.4
Observations	462	430	892	1,700	1,571	3,271	2,162	2,001	4,163
Mon-Khmer	70.4	69.5	70.0	55.7	53.0	54.3	56.4	53.8	55.1
Observations	47	57	104	952	978	1,930	999	1,035	2,034
Chine-Tibetan	84.0	91.3	87.1	35.9	30.2	33.3	41.9	36.4	39.4
Observations	19	15	34	195	177	372	214	192	406
Hmong-lu Mien	81.7	79.4	80.6	62.2	46.7	54.4	64.0	49.3	56.7
Observations	36	32	68	434	430	864	470	462	932
Other	--	--	--	36.1	32.4	33.8	36.3	35.9	36.1
Observations	3	3	6	31	44	75	34	47	81
Total	85.6	88.6	87.0	68.4	65.0	66.7	71.6	69.1	70.4
Observations	567	537	1,104	3,312	3,200	6,512	3,879	3,737	7,616

Notes: (a) Missing enrollment data are treated as missing. See also footnote x for discussion of data on enrollment. (b) The official age range for primary education is 6-10. (c) All estimates are population-weighted.

Source: LECS3, 2002/3

Table 8: Children aged 10-16 who have never attended school (%)

	Urban				Rural				Total		
	Lao-Tai		Total		Lao-Tai		Non-Lao-Tai		Total		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Total	1.9	1.8	2.1	2.2	3.8	6.0	17.2	34.3	8.6	16.3	10.0
Observations	839	830	992	954	2,253	2,200	1,678	1,770	3,931	3,970	9,847
Non-poor	0.9	1.5	1.1	1.7	2.1	4.2	13.8	28.4	5.2	10.9	6.2
Observations	682	681	769	740	1,641	1,565	787	849	2,428	2,414	6,351
Poor	6.1	3.1	5.5	4.3	8.5	10.6	20.4	39.8	14.7	25.8	18.0
Observations	157	149	223	214	612	635	891	921	1,503	1,556	3,496

Notes: Urban non-Lao-Tai estimates are not shown due to the small number of observations. All estimates are population weighted.

Source: LEC3, 2002/3

Table 9: Mean characteristics of accessible primary schools, by residence and ethno-linguistic group

	Urban		Rural		Total	
	Lao-Tai	Non-Lao-Tai	Lao-Tai	Non-Lao-Tai	Lao-Tai	Non-Lao-Tai
School						
% complete primary school	8.9	9.8	8.0	3.9	8.2	4.4
% with multigrade classrooms	8.0	14.9	46.9	65.6	37.0	61.4
Teachers:						
Male	0.3	0.2	0.7	0.8	0.6	0.7
Lao-Tai	0.9	0.5	0.7	0.3	0.7	0.4
Schooling (years)	10.1	9.9	9.8	9.4	9.9	9.4
Experience (years)	14.6	12.5	12.6	9.5	13.1	9.8
Facilities:						
% with electricity	68.6	32.6	33.8	25.4	42.7	26.0
% with drinking water	53.1	13.1	7.8	2.8	19.4	3.6
% with student toilet	70.4	33.7	21.0	14.2	33.6	15.8
% with library	21.1	20.3	9.5	7.7	12.4	8.8
% with phone line	43.7	22.8	12.4	5.1	20.4	6.6
% with principal's room	74.3	60.1	32.4	10.4	43.1	14.5
% with teachers' room	61.2	42.5	23.5	11.9	33.2	14.4
Classrooms:						
% permanent	43.7	32.1	28.4	21.3	32.4	22.0
% with blackboard	92.2	97.8	88.4	90.3	89.4	90.9
% without leaky roof	76.1	72.6	73.9	72.0	74.4	72.0
Each student has desk	95.2	94.2	93.9	80.8	94.2	81.9

Source: LECS3, 2002/3

Table 10: The probability of attending school for rural children 6 through 15 by gender and ethno-linguistic group, 2002/3

Independent Variable	Rural male Lao-Tai dF/dx	Rural female Lao-Tai dF/dx	Rural male non Lao-Tai dF/dx	Rural female non Lao-Tai dF/dx
A. Child/Household Characteristics:				
Log of per capita consumption	0.06 (3.14)	0.08 (4.47)	0.08 (2.42)	0.07 (1.55)
Log household size	0.01 (0.32)	-0.02 (0.76)	-0.01 (0.14)	-0.01 (0.13)
Age 7	0.10 (6.68)	0.08 (3.87)	0.19 (5.99)	0.19 (3.86)
Age 8	0.13 (9.68)	0.12 (7.44)	0.23 (7.33)	0.30 (7.50)
Age 9 to 11	0.20 (13.06)	0.20 (11.17)	0.40 (12.61)	0.45 (10.55)
Age 12	0.13 (9.59)	0.13 (7.19)	0.29 (11.12)	0.32 (6.57)
Age 13	0.13 (9.12)	0.10 (4.92)	0.28 (10.12)	0.26 (4.57)
Age 14 and up	0.11 (7.29)	0.04 (1.44)	0.25 (7.42)	0.17 (2.87)
Share of male adults, 17 and up	0.05 (0.41)	-0.28 (2.42)	-4.3e-03 (0.02)	-0.74 (2.89)
Share of males aged 6 to 16	-0.04 (0.41)	-0.28 (3.41)	-0.24 (1.30)	-0.75 (3.80)
Share of females aged 6 to 16	-0.02 (0.24)	-0.28 (3.35)	-0.24 (1.53)	-0.48 (2.43)
Share of boys aged 0 to 6	0.09 (0.95)	-0.35 (3.22)	-0.34 (1.78)	-0.45 (2.30)
Share of girls aged 0 to 6	-0.13 (1.15)	-0.25 (2.22)	-0.07 (0.38)	-0.64 (3.15)
Child is first or second born	-0.02 (1.17)	-0.02 (1.09)	0.02 (0.74)	0.03 (0.81)
Birth order is missing	-0.02 (0.57)	-4.4e-03 (0.16)	-0.08 (1.55)	-0.09 (1.82)
Male household head	- -	- -	0.60 (2.30)	0.07 (0.18)
Age of household head	-4.2e-03 (1.02)	3.8e-03 (0.79)	-0.01 (1.68)	0.01 (1.49)
Age of head squared	4.6e-05 (1.10)	-3.5e-05 (0.69)	1.3e-04 (1.57)	-1.3e-04 (1.18)
Child is disabled	-0.10 (1.47)	-0.37 (2.97)	-0.03 (0.32)	-0.03 (0.28)
Male head/spouse's yrs of schooling	0.01 (3.84)	1.1e-03 (0.38)	0.02 (3.21)	0.02 (2.90)
Female head/spouse's yrs of schooling	0.01 (2.80)	0.02 (5.83)	0.01 (1.47)	0.02 (2.44)

Table 10 (continued)

Independent Variable	Rural male Lao- Tai dF/dx	Rural female Lao-Tai dF/dx	Rural male non Lao-Tai dF/dx	Rural female non Lao-Tai dF/dx
B. School Characteristics:				
Electricity	0.02 (0.56)	0.06 (1.73)	0.07 (0.48)	0.26 (1.58)
Complete & not multi-grade	0.19 (9.04)	0.23 (8.27)	0.30 (4.79)	0.46 (5.32)
Each student has desk	-0.02 (0.61)	-1.3e-03 (0.03)	0.11 (2.30)	0.08 (1.12)
Share of leaky classrooms	-0.04 (1.85)	-0.04 (2.06)	-0.06 (1.16)	-0.07 (1.30)
Share of male teachers	0.02 (0.97)	-0.06 (2.37)	-0.07 (1.55)	-0.10 (1.39)
Share of Lao teachers	0.02 (0.62)	0.02 (0.52)	0.04 (0.74)	0.12 (2.09)
Teachers' years of schooling	3.5e-03 (0.62)	-0.01 (1.13)	-3.9e-03 (0.55)	0.01 (0.57)
Official principal	-0.03 (0.41)	-0.20 (2.71)	0.10 (0.63)	0.05 (0.20)
Principal is male	-0.02 (0.35)	0.11 (2.16)	-0.03 (0.29)	0.11 (0.99)
Principal is a Lao	-0.01 (0.50)	1.5e-03 (0.04)	-0.02 (0.31)	-0.25 (2.37)
Principal's years of schooling	5.8e-04 (0.10)	5.0e-03 (0.98)	-0.02 (1.41)	-0.01 (0.52)
Km to closest city	-2.6e-04 (1.73)	-3.6e-04 (2.21)	-1.2e-03 (3.70)	-5.8e-04 (1.10)
Km to closest paved road	3.2e-04 (1.58)	-5.9e-06 (0.02)	1.0e-03 (2.29)	1.3e-04 (0.22)
Km to closest lower sec. school	-1.4e-03 (2.37)	-9.4e-04 (1.63)	-9.8e-04 (1.38)	-1.8e-03 (1.36)
Tuition fees are compulsory	0.02 (0.93)	0.02 (0.90)	0.03 (0.83)	0.08 (1.54)
Exam fees are compulsory	-0.03 (1.66)	0.01 (0.65)	-0.03 (0.71)	-2.9e-03 (0.05)
Mean walking time to school	5.2e-05 (0.19)	1.2e-04 (0.43)	-8.9e-04 (2.70)	1.3e-04 (0.18)
C. Village Characteristics:				
High altitude lands	-1.8e-03 (0.09)	-0.06 (2.23)	-0.04 (0.87)	-0.01 (0.12)
Priority 1 districts	0.01 (0.30)	0.03 (1.21)	0.06 (1.59)	0.01 (0.25)
Priority 2 districts	-0.04 (1.49)	-0.05 (1.50)	-0.04 (0.62)	0.01 (0.06)
Number of observations	2749	2686	1832	1955
Pseudo R ²	0.25	0.33	0.27	0.24

Source: LECS3, 2002/3.

Note: A full set of province rural dummies are included in all regressions but not shown for ease of presentation. Z statistics based on standard errors corrected for heteroskedasticity and clustering at the village level are given in parentheses.

Table 11: Determinants of self-reported health status

	Health status is bad	Health status is worse compared to others
Log of real per capita expenditure	-0.0036*** (0.0012)	-0.0073*** (0.0014)
Age	0.0006*** (0.00004)	0.0009*** (0.00005)
Have long-term illness, disability or permanent mark from an accident	0.304*** (0.023)	0.343*** (0.024)
Have temporary health complaints in 4 weeks prior to survey	0.151*** (0.009)	0.158*** (0.010)
Age x Long-term illness	-0.0004*** (0.00009)	-0.0004*** (0.0001)
Age x Temporary illness	-0.00021*** (0.00007)	-0.00025*** (0.00008)
Female	0.0049*** (0.0012)	0.0031** (0.0014)
LaoTai	-0.0033** (0.0013)	-0.0019 (0.0015)
Urban	-0.0035** (0.0015)	-0.0052*** (0.0018)
Observations	46975	46979
Pseudo R-squared	0.342	0.324

Note: Estimates are obtained with dprobit regression for the population 0-60 years old. Standard errors are parentheses. *** p<0.01, ** p<0.05, * p<0.1

Source: LECS3, 2002/3

Table 12: Time use of children (excluding those on vacation) aged 10 to 16, By gender, poor/non-poor status and ethnicity

Activity	Lao-Tai									Non-Lao-Tai				
	Non-poor			Poor			Total			Non-poor			Poor	
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Urban														
Sleeping, eating & personal care	11.5	11.3	11.4	11.5	11.4	11.5	11.5	11.3	11.4	11.4	12.2	11.7	11.4	10.6
Leisure time	4.0	3.4	3.7	4.4	3.9	4.2	4.1	3.5	3.8	3.9	3.9	3.9	4.0	4.1
School	5.5	4.9	5.2	4.5	4.6	4.5	5.3	4.8	5.1	5.9	5.5	5.7	4.6	3.6
Total work	2.0	3.6	2.8	2.7	3.3	3.0	2.1	3.6	2.8	1.9	2.0	1.9	3.5	4.9
Work as employed	0.4	0.3	0.3	0.5	0.4	0.4	0.4	0.3	0.4	0.0	0.0	0.0	0.4	0.0
Own business work	0.2	0.5	0.4	0.1	0.3	0.2	0.2	0.5	0.3	0.1	0.0	0.1	0.0	0.0
Agricultural work	0.5	0.5	0.5	0.7	0.5	0.6	0.6	0.5	0.5	0.5	0.2	0.4	1.6	2.2
Home production	0.9	2.3	1.5	1.4	2.1	1.7	1.0	2.3	1.6	1.2	1.9	1.5	1.5	2.7
Travel, Other	1.0	0.9	0.9	0.9	0.9	0.9	1.0	0.9	0.9	1.0	0.5	0.8	0.6	0.8
Rural														
Sleeping, eating & personal care	11.6	11.5	11.6	11.8	11.6	11.7	11.6	11.6	11.6	11.6	11.5	11.5	11.8	11.5
Leisure time	3.9	3.7	3.8	4.2	3.7	4.0	4.0	3.7	3.9	3.9	3.2	3.5	4.5	4.0
School	4.9	4.1	4.5	3.8	3.0	3.4	4.6	3.8	4.2	3.7	2.4	3.0	2.5	1.8
Total work	2.7	3.8	3.2	3.2	4.9	4.1	2.8	4.1	3.5	3.4	5.1	4.3	3.8	4.8
Work as employed	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0
Own business work	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
Agricultural work	1.2	1.5	1.3	1.5	1.8	1.7	1.3	1.6	1.4	1.3	2.1	1.7	1.6	1.9
Home production	1.3	2.1	1.7	1.5	2.9	2.2	1.3	2.3	1.8	2.1	2.9	2.5	2.0	2.9
Travel/Other	0.9	0.8	0.9	1.0	0.8	0.9	1.0	0.8	0.9	1.4	1.8	1.6	1.4	1.8

Source: LECS3, 2002/3

Note: Population includes all children aged 10-16 not on vacation. Schooling includes time spent on homework. Home production includes time spent on cooking, washing, water, shopping, care for children/elderly, handicraft/weaving, sewing, textile care, construction, hunting/fishing.

Table 13: Time use of adults aged 17 to 55, By gender, poor/non-poor status and ethnicity (hours per day)

Activity	Lao-Tai									Non-Lao-Tai				
	Non-poor			Poor			Total			Non-poor			Poor	
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Urban														
Sleeping, eating & personal care	11.1	10.8	10.9	11.1	10.9	11.0	11.1	10.8	11.0	11.2	10.9	11.0	11.1	10.9
Leisure time	3.7	3.2	3.4	4.1	3.6	3.9	3.8	3.3	3.5	3.8	3.4	3.6	4.3	2.8
School	0.9	0.5	0.7	0.6	0.4	0.5	0.8	0.5	0.7	0.8	0.3	0.6	0.6	0.1
Total work	7.1	8.5	7.8	7.1	8.3	7.7	7.1	8.5	7.8	6.5	8.7	7.6	7.4	9.5
Work as employed	2.8	1.3	2.0	2.9	1.0	1.9	2.8	1.3	2.0	1.9	1.0	1.4	1.6	0.6
Own business work	2.0	2.9	2.5	1.2	1.8	1.5	1.9	2.8	2.3	1.5	2.6	2.0	1.6	1.5
Agricultural work	1.1	0.8	0.9	1.7	1.2	1.5	1.2	0.8	1.0	1.6	1.2	1.4	2.4	2.2
Home production	1.3	3.5	2.4	1.3	4.3	2.8	1.3	3.6	2.5	1.5	3.9	2.8	1.7	5.2
Travel, Other	1.2	0.9	1.1	1.1	0.8	1.0	1.2	0.9	1.1	1.5	0.8	1.2	0.6	0.7

Rural														
Sleeping, eating & personal care	11.4	11.2	11.3	11.4	11.4	11.4	11.4	11.3	11.3	11.5	11.3	11.4	11.4	11.4
Leisure time	3.9	3.4	3.6	3.7	3.0	3.4	3.8	3.3	3.6	3.2	2.4	2.8	3.3	2.6
School	0.4	0.3	0.3	0.3	0.2	0.2	0.4	0.2	0.3	0.2	0.1	0.2	0.2	0.1
Total work	6.6	8.0	7.3	6.8	8.4	7.7	6.7	8.1	7.4	6.4	8.0	7.2	6.3	7.6
Work as employed	0.7	0.2	0.5	0.5	0.1	0.3	0.7	0.2	0.4	0.3	0.1	0.2	0.2	0.1
Own business work	0.8	0.9	0.8	0.2	0.2	0.2	0.7	0.7	0.7	0.2	0.2	0.2	0.1	0.1
Agricultural work	3.2	2.9	3.0	3.9	3.2	3.6	3.4	3.0	3.2	3.7	3.6	3.6	3.3	3.3
Home production	1.8	4.0	2.9	2.2	4.8	3.6	1.9	4.2	3.1	2.3	4.1	3.2	2.7	4.2
Travel/Other	1.7	1.1	1.4	1.8	1.0	1.4	1.7	1.1	1.4	2.6	2.1	2.3	2.8	2.3

Source: LECS3, 2002/3

Note: Home production includes time spent on cooking, washing/cleaning, collecting wood & water, shopping, care for children/elderly, handicraft/weaving, sewing, text hunting/fishing.

Appendix Table 1. Basic household and population characteristics by urban/rural residence, ethnicity and 2002/3

		Urban			Rural			La
		LaoTai	Non-Laotai	Total	LaoTai	Non-Laotai	Total	
Total								
Household characteristics								
school years of head	Mean	6.9	5.3	6.7	4.7	2.7	3.9	
	SD	4.1	3.7	4.1	3.3	2.8	3.2	
school years of head's spouse	Mean	5	3.1	4.8	3.1	1	2.3	
	SD	3.6	3.5	3.6	2.8	1.8	2.7	
household size	Mean	6.4	7.4	6.5	6.7	7.6	7.1	
	SD	2.3	2.7	2.3	2.2	2.8	2.5	
dependency ratio	Mean	0.4	0.5	0.4	0.4	0.5	0.4	
	SD	0.2	0.2	0.2	0.2	0.2	0.2	
% pop with:								
remittances from Laos	Mean	5.6	2.8	5.4	3.8	2.0	3.1	
	SD	0.2	0.2	0.2	0.2	0.1	0.2	
remittances from abroad	Mean	4.0	5.3	4.1	3.2	2.5	2.9	
	SD	0.2	0.2	0.2	0.2	0.2	0.2	
pension & life insurance	Mean	1.9	1.9	1.9	0.2	0.7	0.4	
	SD	0.1	0.1	0.1	0.0	0.1	0.1	
% pop living in village with:								
road	Mean	99.7	98.8	99.6	81.1	66.6	75.2	
	SD	0.1	0.1	0.1	0.4	0.5	0.4	
electricity	Mean	97.5	93.3	97.1	44.3	16.1	32.9	
	SD	0.2	0.2	0.2	0.5	0.4	0.5	
primary school	Mean	83.6	70.2	82.2	87.6	80.0	84.5	
	SD	0.4	0.5	0.4	0.3	0.4	0.4	
lower secondary school	Mean	29.2	22.7	28.6	16.6	3.9	11.5	
	SD	0.5	0.4	0.5	0.4	0.2	0.3	
upper secondary school	Mean	11.3	14.1	11.6	4.9	1.0	3.3	
	SD	0.3	0.3	0.3	0.2	0.1	0.2	
technical school	Mean	8.0	2.1	7.4	0.4	0.4	0.4	
	SD	0.3	0.1	0.3	0.1	0.1	0.1	

hospital	Mean	9.0	15.2	9.6	1.3	1.1	1.2
	SD	0.3	0.4	0.3	0.1	0.1	0.1
dispensary/health post	Mean	23.2	24.3	23.3	14.6	5.7	11.0
	SD	0.4	0.4	0.4	0.4	0.2	0.3
Number of observations		7,897	1,358	9,255	21,002	19,532	40,534
Non-poor							
Household characteristics							
school years of head	Mean	7.1	5.7	7	5.1	2.9	4.4
	SD	4.2	4.1	4.2	3.4	2.9	3.4
school years of head's spouse	Mean	5.2	3.4	5.1	3.4	1.1	2.7
	SD	3.7	3.6	3.7	2.9	2	2.9
household size	Mean	6.2	6.8	6.2	6.2	6.9	6.4
	SD	2.2	2.7	2.2	2	2.6	2.2
dependency ratio	Mean	0.4	0.4	0.4	0.4	0.4	0.4
	SD	0.2	0.2	0.2	0.2	0.2	0.2
% pop with:							
remittances from Laos	Mean	6.4	5.0	6.3	3.8	1.9	3.2
	SD	0.2	0.2	0.2	0.2	0.1	0.2
remittances from abroad	Mean	4.2	6.7	4.4	3.5	4.4	3.8
	SD	0.2	0.3	0.2	0.2	0.2	0.2
pension & life insurance	Mean	1.7	1.8	1.7	0.2	0.5	0.3
	SD	0.1	0.1	0.1	0.0	0.1	0.1
% pop living in village with:							
road	Mean	99.8	99.6	99.8	83.9	72.8	80.4
	SD	0.0	0.1	0.0	0.4	0.4	0.4
electricity	Mean	97.8	92.9	97.4	47.0	19.4	38.2
	SD	0.1	0.3	0.2	0.5	0.4	0.5
primary school	Mean	82.4	80.5	82.3	88.1	79.1	85.2
	SD	0.4	0.4	0.4	0.3	0.4	0.4
lower secondary school	Mean	30.6	26.6	30.3	18.4	4.7	14.0
	SD	0.5	0.4	0.5	0.4	0.2	0.3
upper secondary school	Mean	11.8	18.2	12.3	6.4	2.0	5.0
	SD	0.3	0.4	0.3	0.2	0.1	0.2
technical school	Mean	8.5	3.0	8.1	0.6	0.8	0.6
	SD	0.3	0.2	0.3	0.1	0.1	0.1
hospital	Mean	9.3	8.8	9.3	1.7	1.3	1.6
	SD	0.3	0.3	0.3	0.1	0.1	0.1
dispensary/health post	Mean	24.1	32.7	24.7	15.0	6.1	12.2
	SD	0.4	0.5	0.4	0.4	0.2	0.3
Number of observations		6,562	762	7,324	14,726	9,362	24,088
Poor							
Household characteristics							
school years of head	Mean	5.8	4.9	5.6	3.9	2.5	3.1
	SD	3.9	2.9	3.7	2.9	2.7	2.9
school years of head's spouse	Mean	3.9	2.6	3.6	2.3	0.8	1.5
	SD	2.9	3.3	3.1	2.4	1.7	2.2
household size	Mean	7.7	8.2	7.8	7.9	8.3	8.1
	SD	2.3	2.5	2.3	2.3	2.8	2.5
dependency ratio	Mean	0.5	0.5	0.5	0.5	0.5	0.5
	SD	0.2	0.2	0.2	0.2	0.2	0.2

% pop with:								
remittances from Laos	Mean	2.1	0.0	1.6	3.7	2.1	2.8	
	SD	0.1	0.0	0.1	0.2	0.1	0.2	
remittances from abroad	Mean	2.7	3.4	2.9	2.4	0.7	1.5	
	SD	0.2	0.2	0.2	0.2	0.1	0.1	
pension & life insurance	Mean	3.1	2.0	2.8	0.2	0.8	0.5	
	SD	0.2	0.1	0.2	0.0	0.1	0.1	
% pop living in village with:								
road	Mean	99.2	97.8	98.9	74.1	60.7	66.8	
	SD	0.1	0.1	0.1	0.4	0.5	0.5	
electricity	Mean	96.1	93.8	95.6	37.5	13.0	24.1	
	SD	0.2	0.2	0.2	0.5	0.3	0.4	
primary school	Mean	89.6	57.0	82.2	86.6	80.8	83.4	
	SD	0.3	0.5	0.4	0.3	0.4	0.4	
lower secondary school	Mean	22.5	17.6	21.4	12.1	3.3	7.2	
	SD	0.4	0.4	0.4	0.3	0.2	0.3	
upper secondary school	Mean	8.7	8.7	8.7	1.0	0.2	0.5	
	SD	0.3	0.3	0.3	0.1	0.0	0.1	
technical school	Mean	5.8	1.1	4.7	0.0	0.0	0.0	
	SD	0.2	0.1	0.2	0.0	0.0	0.0	
hospital	Mean	7.5	23.3	11.1	0.3	0.9	0.7	
	SD	0.3	0.4	0.3	0.1	0.1	0.1	
dispensary/health post	Mean	18.8	13.5	17.6	13.6	5.4	9.1	
	SD	0.4	0.3	0.4	0.3	0.2	0.3	
Number of observations		1,335	596	1,931	6,276	10,170	16,446	7,

Source: LECS 2002/3

Notes: Dependency ratio is defined as (1-ratio of number of workers to household size). For categorical variables, standard deviations are of proportions rather than percentages. Standard deviations (SD) are estimated for the individual population.

Appendix Table 2. Descriptive statistics of variables included in the regressions

		Urban			Rural			Total		
		Lao-Tai	Non-LaoTai	Total	Lao-Tai	Non-LaoTai	Total	Lao-Tai	Non-LaoTai	Total
Real per capita expenditure (log)	Mean	12.144	11.775	12.094	11.89	11.606	11.76	11.962	11.617	11.826
	SD	0.594	0.551	0.601	0.535	0.467	0.524	0.564	0.475	0.557
Real per capita expenditure (1000 kips)	Mean	230.0	152.8	219.7	171.4	124.3	149.8	188.0	126.2	163.6
	SD	200.8	100.9	192.3	129.5	83.9	113.4	155.4	85.4	135.7
Household size	Mean	5.688	6.308	5.771	5.984	6.558	6.248	5.9	6.541	6.153
	SD	2.083	2.445	2.144	2.148	2.649	2.408	2.134	2.636	2.365
Lao-Tai household	Mean	1	0	0.867	1	0	0.541	1	0	0.606
	SD	0	0	0.34	0	0	0.498	0	0	0.489
Share of elderly	Mean	0.084	0.075	0.083	0.08	0.069	0.075	0.081	0.069	0.077
	SD	0.15	0.132	0.148	0.145	0.128	0.138	0.147	0.129	0.14
Share of male adults, 17 to 55	Mean	0.262	0.22	0.257	0.23	0.214	0.223	0.239	0.215	0.229
	SD	0.142	0.123	0.14	0.119	0.118	0.119	0.127	0.118	0.124
Share of female adults, 17 to 55	Mean	0.276	0.244	0.272	0.246	0.228	0.238	0.255	0.229	0.245
	SD	0.137	0.136	0.137	0.118	0.115	0.117	0.125	0.117	0.122
Share of males 6 to 16	Mean	0.145	0.168	0.148	0.162	0.144	0.154	0.157	0.145	0.153
	SD	0.157	0.157	0.157	0.154	0.144	0.15	0.155	0.145	0.151
Share of females 6 to 16	Mean	0.141	0.143	0.141	0.154	0.147	0.151	0.15	0.146	0.149
	SD	0.151	0.139	0.15	0.15	0.141	0.146	0.15	0.141	0.147
Share of boys 0 to 5	Mean	0.049	0.078	0.053	0.064	0.101	0.081	0.06	0.099	0.076
	SD	0.099	0.116	0.101	0.107	0.124	0.116	0.105	0.123	0.114
Share of girls 0 to 5	Mean	0.042	0.071	0.046	0.063	0.098	0.079	0.057	0.096	0.072
	SD	0.091	0.11	0.094	0.105	0.119	0.113	0.102	0.119	0.11
Male household head	Mean	0.904	0.953	0.91	0.959	0.971	0.965	0.943	0.97	0.954
	SD	0.295	0.212	0.286	0.198	0.167	0.184	0.231	0.17	0.209
Age of household head	Mean	47.052	43.075	46.521	44.177	41.348	42.878	44.992	41.463	43.6
	SD	11.332	10.804	11.34	11.737	12.498	12.174	11.694	12.398	12.1
Highest education of most educated member:										
Preprimary	Mean	0.005	0.033	0.009	0.027	0.164	0.09	0.02	0.155	0.074
	SD	0.071	0.179	0.093	0.161	0.37	0.286	0.142	0.362	0.261
Some primary	Mean	0.052	0.136	0.063	0.164	0.38	0.263	0.132	0.364	0.224
	SD	0.222	0.344	0.244	0.37	0.486	0.44	0.339	0.481	0.417
Completed primary	Mean	0.077	0.108	0.081	0.218	0.223	0.22	0.178	0.216	0.193
	SD	0.266	0.311	0.273	0.413	0.417	0.415	0.382	0.411	0.395
Some lower secondary	Mean	0.091	0.141	0.098	0.171	0.108	0.142	0.149	0.11	0.133
	SD	0.288	0.349	0.297	0.377	0.31	0.349	0.356	0.313	0.34
Completed lower secondary	Mean	0.167	0.221	0.174	0.188	0.075	0.136	0.182	0.085	0.144
	SD	0.373	0.416	0.379	0.39	0.264	0.343	0.386	0.279	0.351
Some upper secondary	Mean	0.081	0.089	0.082	0.068	0.014	0.043	0.072	0.019	0.051
	SD	0.273	0.286	0.275	0.252	0.117	0.204	0.258	0.136	0.22
Completed upper secondary	Mean	0.209	0.122	0.197	0.081	0.019	0.053	0.117	0.026	0.081
	SD	0.407	0.328	0.398	0.273	0.137	0.223	0.322	0.159	0.273
Vocational training	Mean	0.189	0.099	0.177	0.071	0.013	0.045	0.105	0.019	0.071
	SD	0.392	0.299	0.382	0.258	0.115	0.207	0.306	0.137	0.257
University	Mean	0.129	0.052	0.118	0.012	0.003	0.008	0.045	0.006	0.03

Received remittances from abroad	SD	0.335	0.222	0.323	0.11	0.055	0.089	0.208	0.079	0.17
	Mean	0.04	0.042	0.041	0.029	0.017	0.024	0.032	0.019	0.027
Highlands	SD	0.197	0.201	0.197	0.169	0.13	0.152	0.177	0.136	0.162
	Mean	0.041	0.154	0.056	0.155	0.623	0.37	0.123	0.591	0.308
Lowlands	SD	0.198	0.362	0.23	0.362	0.485	0.483	0.328	0.492	0.462
	Mean	0.846	0.528	0.804	0.623	0.218	0.437	0.686	0.238	0.509
	SD	0.361	0.5	0.397	0.485	0.413	0.496	0.464	0.426	0.5

Source: LECS 2002/3

Notes: A household is defined as Lao-Tai if there are equal or more Lao-Tai than non-Lao-Tai members.