Demand for private tuition classes under the free education policy. Evidence based on Sri Lanka

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Abstract

Private tuition classes are growing phenomenon in Sri Lanka especially among students who prepare for competitive national school qualifying examinations. It is one of major education issues under the free education policy in Sri Lanka. It can tarnish the real purpose of free education policy. In this paper, I examine the demand for private tuition classes in Sri Lanka by using two waves of Household Income and Expenditure Surveys (HIES) conducted by the Department of Census and Statistics (DCS) of Sri Lanka in 1995/96 and 2006/07.I find that the demand for private tuition classes has increased in recent time among households. It seems that the private tuition expenditure has changed from a luxury good in 1995/96 to a necessity good in 2006/07. If the increased demand for private tuition classes is reflecting parents' concerns on inadequate and poor, but free education in public schools, the Sri Lanka government needs to reconsider its free education policy.

Keywords: Private tuition classes, Household expenditure, Free education policies, Tobit estimator.

1. Introduction

Sri Lanka is one of a few countries in the world that offer free education from primary school leads to university level. Sri Lankans have been benefiting the free education policy started in 1945.Although per capita GDP is low, Sri Lanka has archived high literacy, school enrollment and school completion rates comparable to those of developed countries. Not only school fees are free but some other generous incentives are also given to Sri Lankan students. For instance, public schools provide free text books up to junior secondary school and free uniforms up to senior secondary school. Moreover, free meals are also provided for needy students. All these benefits reduce the cost of education and help students to study without facing burden from education related costs. While all these generous incentives help to improve education level in Sri Lanka, education has become highly competitive as the labor wage depends more on the education level of the labors (Ranasinghe and Hartog, 1997).In Sri Lanka, national school qualifying examinations are highly competitive. Thus, the high competition has created a recent and growing phenomenon called ‘private tuition classes’. These private tuition classes are not governed by the government or any other local government authorities. The private tuition classes are held both weekends and weekday after school mainly in urban cities. Students attend these private tuition classes to obtain additional skills and techniques to pass the highly competitive school qualifying examinations. Many parents send their children to these tuition classes by paying tuition fees.

Private tuition classes are common, not only in developing countries like Sri Lanka but in many other developed countries. For example, students in developed countries, like Japan, South Korea, the United States, and the United Kingdom, are also taking

additional private tuition classes. Bray (2007) emphasizes that many students in developing countries, especially in Asia, are attending private tuition classes and that trend of attending tuition classes is growing in most of the countries. Although private tuition classes have become a large scale education industry, the implications and other cultural effects of the private tuition classes have not been investigated rigorously by policy makers and educational planners due to unavailability of high-quality data.

Private tuition classes are one of a major education issue under the free education policy in Sri Lanka. However, to my knowledge, no quantitative research has investigated the determinants of household private tuition expenditure using nationwide household level survey data. Therefore, this study attempts to examine the determinants of private tuition expenditure in Sri Lanka. The data used in this paper come from two nationwide Household Income and Expenditure Surveys(HIES) in Sri Lanka surveyed in 1995/96 and 2006/07.Using both descriptive and econometric analysis, I investigate the determinants of private tuition expenditure and economic burden for private tuition expenditure at the household level. I also try to explore the change of household private tuition expenditure situation over the time. The major findings of this paper are as follows: household private tuition expenditure has changed from a luxury good in 1995/96 to a necessity good in 2006/07.Household economic burden for private tuition expenditure has increased significantly in recent time. Rural households show less demand for private tuition classes. The highly educated parents seem to have stronger demand for children's private tuition classes.

This paper structured as follows. In section 2 I discussed the background of the research question and private tuition situation in Sri Lanka. Section 3 presents the data and

descriptive analysis. Section 4 describes the econometric framework and variables. Section 5 discusses the estimation results. Finally section 6 concludes the paper with discussing policy implications.

2. Background of the research problem and private tuition classes in Sri Lanka

2.1 Background of the research problem

Demand for private tutoring is a widespread phenomenon in many countries. There is a growing literature related to private tutoring in recent years. Lack of official data and statistics, however, hinder the study of private tutoring. Bray (2007) reviews the literature related to private tutoring. He compiled data from various sources and presents a comprehensive review related to private tutoring around the world. He finds that private tutoring widely varies with culture, the nature of main stream education systems, and the scale of economies. Several authors have investigated the determinants of private tutoring quantitatively. Tansel and Bircan (2006) have examined the household private tuition expenditure in Turkey. They find that households with higher income spend more on their children's private tutoring and higher parental educational level seems to increase spending on children's private tutoring. According to their findings, private tutoring has a unitary elasticity which indicates private tutoring is neither a necessity nor a luxury good in household budget in Turkey. They have also found that household expenditure on private tutoring is higher in urban areas compare to rural areas. Dang (2007) has investigated the determinants of expenditure on private tutoring and impacts of private tutoring on student's academic performance in Vietnam. His findings indicate that private tutoring is a necessity good in the household budget for primary and lower secondary school students in Vietnam. His results also suggest that private tutoring seems to

increase student's academic performance. Moreover, ethnic minority households spend less on private tuition classes for their children who attend primary schools than ethnic majority households do. Bray and Kwok (2003) have examined the demand for private tuition classes in Hong Kong and found that about 49% of sampled secondary school students receiving private supplementary tutoring. Kim and Lee (2004) have studied the parent's expenditure on private tuition in South Korea using national wide household survey. They argue that the demand for private tutoring has been increased due to the government's strict education policies. Psacharopoulous and Papakonstantinou (2005) have found that private tutoring expenditure is inelastic in Greece. Ha and Harpham (2005) found that richer and more educated households in urban areas of Vietnam spend more on private tuition classes compare to poor and uneducated households in rural areas.

In Sri Lanka, studies are limited to private tuition classes. This may be due to unavailability of data on private tuition classes. De Silva (1994) has investigated the private tutoring status in Sri Lanka. According to his survey, 80% of grade 6 students attended some form of private tuition classes in 1990.This proportion was 75% for grade 11 students. Also 62% of grade 13 students who follow arts stream received private tuition. The proportion was 67% for commerce students and 92% for science students. He also found that more students go to private tuition classes for science related subjects like Physics, Mathematics, and Chemistry. Since his study, private tuition classes have become more popular and the household private tuition expenditure seems to have increased significantly.

2.2 Private tuition classes in Sri Lanka

Private tuition classes are widespread and unofficial education industry especially in Sri Lanka especially in urban areas. Although some students attend private tuition classes at the beginning of their schools, majority of students attend the private tuition classes to prepare for school qualifying examinations at the end of Grade 5, Grade 11 and Grade 13. Since these three school qualifying examinations are very competitive and very important in their life, most of the students attend private tuition classes. Private tuition classes are not governed or administrated by Sri Lankan government. There are three types of private tuition education in Sri Lanka.

First type of private tuition education is one-to-one instruction in which teachers visit students or students visit teachers. A teacher could be a qualified teacher, an undergraduate student, or an upper grade school student. They are usually paid hourly rates which vary widely according to the qualifications and experiences. Classes can be given any time of the day but usually after school or weekends. This is the most expensive type of tuition class in Sri Lanka because instruction is given by one-to-one. Therefore only rich households can afford this type of private tuition classes. Second type of private tuition is provided by qualified teachers to small group of students. The class size can vary from two to fifty students depending on the popularity of a teacher and the student population of the area. In Sri Lanka, this type of tuition class is called as ‘Group Tuition Class’. Teachers in these classes are usually public school teachers and provide education for additional money. It is not illegal for public school teachers to teach after school hours or weekends. So many public school teachers teach in these tuition classes. Most students go to ‘Group Tuition Classes’ when they are nearing their school qualifying examinations. Students who prepare for the scholarship examination at grade 5

usually take private tuition classes for Mathematics and first language subjects. Students who sit for General Certificate of Education (GCE) Ordinary Level (O/L) examination at Grade 11 usually take additional private tuition classes for subjects like Mathematics, Science, English etc. GCE Advanced Level (A/L) students at grade 13 usually go to private tuition classes depending on their major stream such as Bio-Science (Physics, Chemistry, Biology), Physical Science (Physics, Chemistry, Combined Mathematics), Commerce (Business Studies, Economics, Accounting) and Arts (various arts subjects).The fees of this second type of private tuition classes are usually charged on monthly basis and they vary with the popularity of teachers. Third type of private tuition classes are known as 'Hall Tuition Class'. The class size of these types of tuition classes is very large. It can be between fifty and one-thousand students depending on teacher's popularity, student population and location of the class. Classes are usually held in very large halls and instruction is given by using microphones. This type of private tuition classes is popular among GCE O/L and GCE A/L students. Most of the teachers in this type of classes are very famous. They may be school teachers or university lectures. Classes are usually held on weekends but some times in week days. Since the number of students is very high, fees charged by instructor is the cheapest among three types of private tuition classes. This type of hall tuition classes are only located in large urban cities. Therefore some times students from rural areas travel long distance to attend this type of classes.

3. Data and Descriptive Analysis

3.1 Data

This study is based on the Household Income and Expenditure Survey (HIES) of Sri Lanka conducted by the Department of Census and Statistics (DCS). According to DCS (2008), DCS conducts Household Income and Expenditure Survey once in every five years. The first survey has been conducted in 1980/81 namely Labor Force and Socio-Economic Survey and continued till 1990.In 1990, this survey was separated in to Labor force survey and Household Income and Expenditure survey. Therefore, DCS has conducted Household Income and Expenditure survey as a separate survey since 1990.Genarally HIES selects 25000 household units as a sample for all country. DCS collect the data using direct personal interviews. Last HIES has been conducted in 2006/07 covers all districts in Sri Lanka excluding Northern Province and Trincomoalee district in Eastern Province due to security reasons. Sample selection of the survey has been implemented according to the proportionately to the number of housing units in each district. Also the data collection has been conducted in 12 monthly rounds to capture the seasonal variation of income and expenditure patterns of households (DCS, 2008). HIES usually gathers household information on demographic characteristics, household expenditure, and household income.

I use both HIES (2006/07) and HIES (1995/96) survey data for analysis. By comparing the two surveys, I can grasp the change of household demand for private tuition classes on children's education. The surveys ask detailed questions on education expenditure. For example, I can obtain not only the expenditure on education but what type of education expenditure such as tuition fees, expenditure on school text books, expenditure on stationeries, boarding fees etc.Also it has specific individual data such as age, education level, job etc.Since the purpose of this study is to identify the determinants of

household private tuition education expenditure, I only select households that have students ages from 6 to 21 for this study.

3.2 Descriptive statistics

3.2.1 Sampled households and private tuition expenditure

In Table 1, I find that students are more likely to attend private tuition classes in recent time. Sri Lankan students usually start their schooling when they reach above 5 years old. They take first national level school examination when they are in grade5.Students take first school qualifying exam called general certificate of education ordinary level(GCE O/L) when they are aged above 15 and second qualifying examination called general certificate of education advanced level(GCE A/L) when aged 18 or above. Students can repeat the examination if they fail to pass. Therefore I take households that have students aged 6 to 21 years as our sample cohort. There are 13863 households have students between aged 6 and 21 years in 1995/96 sample and 11628 households in 2006/07 sample. The total number students who are aged 6 to 21 are 30170 in 1995/96 and 21438 in 2006/07.Out of those total households, 76.74% of households have not spent money on private tuition classes and 23.26% of households have used money on students private tuition classes in 1995/96. But we can see that only 36.33% of households have not spent money on private tuition in 2006/07.Outof total 11628 households, 63.67% of households have spent money on private tuition classes. This indicates a considerable increase of proportion of households that spend money on private tuition classes.

3.2.2 Private tuition expenditure by income level

In table 2, I figure out the clear difference in private tuition expenditure by household income levels. First, the proportion of households with positive private tuition expenditure increases highly from bottom to top income quartile in 1995/96 survey. However, the tendency disappears in the 2006/07 survey. There is not much difference in proportion of households with positive tuition expenditure by household total expenditure quartiles. Thus, richer households are more likely to spend money on tuition classes in 1995/96.Second, for each quartile, the percentage of households with positive private tuition expenditure has increased over time. For instance, the percentage of bottom income quartile households with positive private tuition expenditure has increased from around 6% in 1995/96 to 60% in 2006/07.Thus, poor households also seem to send their children to private tuition classes in recent time.

3.2.3 Private tuition expenditure by demographic characteristics

In table 3, I find that household private tuition expenditure is varied with demographic characteristics. I use sector of household reside and ethnicity of the household as demographic characteristics. In Sri Lanka, households may divide into three main sectors. They are urban sector, rural sector and estate sectors. Rural sector is the largest household sector consists of various districts that are usually still under developed. Urban sector consists of various urban areas usually have better infrastructure facilities. Then estate sector consists of several areas mainly where tea plantations situated. It is usually the least developed area in terms of infrastructure facilities. Then, I divide households based on their ethnicity. Sinhalese and Tamils are the main ethnic groups live in Sri Lanka. Sinhalese consist of 70% of total population and Tamils consist of 20%.Tamil community divided in to two major sects one who live mainly in north and east part of

Sri Lanka called as ‘Sri Lankan Tamils’ and other who live in estate sector called as ‘Up Country Tamils’. Another 10% of total population are belongs to Muslim and other minor communities. Table 3 indicates that households live in urban sector are more likely to spend money on private tuition classes in the 90s. For instance, 40.48% of urban households have spent money on private tuition classes and only 19.76% have spent in rural households. Estate sector have reported the least percentage of households which spent money on private tuition classes. Only 14.85% of estate sector households have spent money on children’s private tuition classes in 1995/96 survey.

But over the time, households seem to spend money on children’s private tuition classes regardless of the living area. For instance, 65.04% of rural households have spent money on private tuition classes in 2006/07 survey. This is dramatic increase compare with 1995/96 survey results. Percentage of urban households that spend spent money on private tuition classes have also increased but not as high as rural households. The percentage of estate sector households that spend money on children’s private tuition classes seem to increase significantly in recent time, however, estate sector households still have reported least percentage compare with rural and urban sector households. This may be due to the less development in terms of infrastructure facilities such as schools, hospitals, houses, roads etc in the estate sector.

Next I find that the households belong to Tamil ethnicity group are less likely to spend money on private tuition classes compare with Sinhalese and other ethnic groups. Only 16.72% of total Tamil households seem to spend money on children’s private tuition classes in 1995/96. Around 24.32% of Sinhalese and 25.03% of other ethnic group households have spent money on children’s private tuition classes in 1995/96. The same

trend can be observed in 2006/07. Percentage of Tamil households that spend money on private tuition classes are the lowest, however, the percentage have increased significantly in 2006/07.This result is as expected. Because most of the Sri Lankan Tamil community lives in northern part of Sri Lanka where civil war had been taken place from year 1983 to 2009 and some live in estate sector where least developed area in terms of infrastructure facilities. Thus, access to private tuition classes may be difficult for Tamil community compare with other communities.

3.2.4 Private tuition expenditure by household head's level of education

The results in table 4 indicate that education level of parents has positive relationship on household private tuition expenditure. I observe that the percentage of households with positive private tuition expenditure has increased with the level of household head's education. About 55.29% of households that have positive private tuition expenditure are headed by above university level educated person in 1995/96.But this percentage is only 9.53% for households that is headed by a person with no schooling. This trend is similar for 2006/07, however, the percentages have increased significantly in 2006/07.Ranasinghe and Hartog (2002) argue that Sri Lankan children's schooling attainments depends on parents' education and employment status. This result might give a reason for higher achievement of children from higher educated parents though I did not investigate academic performance of children in this study. Households that parents have higher education background may demand children's education more than those of lesser educated parents. Therefore, may spend more money on their children's education such as private tutoring.

3.2.5 Percentage of private tuition expenditure in total household expenditure

In table 5, I find significant difference of household budget share for private tuition expenditure. In 1995/96, around 23% of households with school aged children spend money on private tuition classes and majority of them allocate 1-5% of total household expenditure on private tuition classes. However, in 2006/07, around 64% of households send their children to private tuition classes. Around 37% households allocate between 0% and 1% of total household expenditure on private tuition classes in 2006/07, however, only 4% of households allocate between 0% and 1% in 1995/96.Thus,many households seem to allocate at least few percent of their budget on children's private tuition classes in recent time.

4. Econometric Framework

In this section, I discuss the econometric framework and variables that we use in the following estimation models. First, I estimate an Engle curve model for household private tuition expenditure. Second, I estimate a model for household economic burden of private tuition classes.

4.1 Determinants of Household Private tuition expenditure

An Engle curve form of demand for private tuition expenditure is adapted assuming linear relationship between dependant and independent variables. The dependant variable is private tuition expenditure of households censored at zero because some households do not spend money on private tuition classes. Following Tanzel & Bircan (2006), Dang (2007), Kim & Lee (2010), I estimate censored regression model for household's demand for private tuition expenditure as follows.

$$Y_i^* = X\beta + \varepsilon_i, \quad (1)$$

$$Y_i = 0 \text{ if } Y_i^* \leq 0, \quad (2)$$

$$Y_i = Y_i^* \text{ if } Y_i^* > 0, \quad (3)$$

Where Y_i^* is the latent private tuition expenditure of household *i*, and Y_i is the observed private tuition expenditure of household *i*.*X* is a vector of independent variables that can affect household private tuition expenditure, including household characteristics, household head characteristics, and regional characteristics. ε_i is an error term.

As Deaton (1997) emphasizes, heteroscedasticity is often found problem in household income and expenditure survey data. To reduce this problem, I use log transformation on expenditure data. Thus, our dependant variable is the log of the household private tuition expenditure. But it creates a problem of undefined value of log of zero as some households do not spend money on private tuition expenditure. To overcome this issue, I add a value of one in the place of zero to the household private tuition expenditure. Our independent variables consists of a number of household characteristics such as the household total expenditure per month as a proxy for the total household income, the number of children in the household, the number of adults in the household, reported ethnicity of household etc. I also add two dummy variables for the households having only girls or boys. I include a year dummy for the 2006/07 survey data and an interaction term of total the household expenditure with the year 2006/07 dummy to capture the time difference. Several characteristics of the household heads have been included as independent variables. They include age and age squared of the household head, the education level of the household head, the employment status of the household head, and the education level of the spouse of the household head. Regarding the employment

status of household head, I include several dummy variables named as ‘formal’, ’informal’, ’owner’ to indicate employment status of the household head. The formal workers are workers who in the government sector, semi-government sector or private sector. Informal workers are own account workers or unpaid family workers. Finally the owner workers are entrepreneurs who usually do some form of businesses. Moreover, I also include several dummy variables for household head’s income earnings livelihood such as agriculture, employment and other sources. Household head education usually means father’s education and mother’s education consider as spouse’s education. The regional characteristics refer to sector (Urban, Rural) variables. Estimation of censored regression model is implemented by using Tobit estimator as it is the obvious choice for censored model. Tobit estimator uses maximum likelihood function method which assumes normality and homoscedastic error distribution. Both conditional and unconditional marginal effects of Tobit model will be calculated.

4.2 Determinants of Household economic burden for private tuition expenditure

Next, I estimate household economic burden for private tuition classes, defined as the percentage of the private tuition expenditure in the total household expenditure. I set the economic burden of private tuition classes as dependant variable. Inflation factor is a potential problem of analyzing two decades of private tuition expenditure data since survey data is in nominal values. Therefore, the economic burden for private tuition expenditure may be indicator when I analyze two cross sectional data as it gives the change of demand for private tuition classes in real terms. Explanatory variables are same as the model in section 4.1 with the exception of household total monthly expenditure variable. I omit the household total monthly expenditure from the explanatory variables

as it may be endogenous to economic burden of private tuition expenditure variable. Tobit estimator is used as estimation technique similar to section 4.1.

5. Estimation Results

5.1 Determinants of Household Private Tuition Expenditure

The Tobit estimation results for household private tuition expenditure and the associated conditional and unconditional marginal effects in table 5, suggest the demand for private tuition classes has increased over the time. In my estimation model, the household private tuition expenditure and the household total expenditure are both in logarithms form. Thus, the estimated coefficient gives expenditure elasticities. The private tuition expenditure elasticities conditional on positive private tuition expenditure are 1.40 in 1995/96 and 0.08 in 2006/07.The unconditional private tuition expenditure elasticities are 1.87 in 1995/96 and 0.10 in 2006/07.All elasticity values are statistically significant This indicate that private tuition was a luxury good of household budget in 1995/96 but became a necessity of household budget in 2006/07. Dang (2007) also found private tutoring is a necessity good for Vietnam primary and secondary school students.

The age of household head seems to have positive impact on private tuition expenditure at a decreasing rate, because the coefficient values of household head's age and age squared are statistically significant with positive and negative signs. This may indicate that the middle aged household heads are more likely to spend money on their school aged children's education. Similar result is also found by Tanzel and Bircan (2006) in Turkey.

The education level of father and mother have statistically significant positive impact on children's private tuition expenditure as both coefficients of household head's years of

education and spouse's years education are positive and statistically significant. The unconditional marginal effects results suggest that holding other things constant, a year increase in father's years of education increases household private tuition expenditure by about 6% while a year increase in mother's years of education only increase private tuition expenditure by about 2%. In most Sri Lankan households, fathers are household heads except for few mother headed households. Thus, the impact of father's years of education seems to be higher than mother's years of education. This finding is in contrast with Kim and Lee (2010), Tanzel and Bircan (2006) as they found mother's years of education have higher effect than that of fathers in Korea and Turkey.

There appears to be significant difference on household private tuition expenditure among rural and urban households, and the ethnic majority and minority households. The rural households are less likely to spend money on children's private tuition classes compare with urban households indicated by statistically significant and negative coefficient estimate. For instance unconditional marginal effect results suggest that rural households are about 18% less likely to spend money on children's private tuition classes compare with Sinhalese households. This result is as expected because people in the rural areas are relatively poor and also have lack of facilities. The Sinhalese households who belong to the ethnic majority are more likely to spend money on private tuition classes than ethnic minority households. Because the coefficient value for ethnic majority Sinhalese has lower negative value than two ethnic minority variables. Also I could not find significant difference of private tuition expenditure between households who earn income from agriculture or from other employment.

Number of children especially aged between 6 and 18 seems to be a factor of household private tuition expenditure as expected. I can see positive highly significant coefficient estimates for variables that represent number of children who are between age 6 and 18. For example, unconditional marginal effect results suggest that the number children who are aged between 10 and 14 increases by 1 child, household private tuition expenditure increase by around 29%. Sri Lankan students usually take school qualifying examinations when they are in grade 5(age 10), grade 11(age 16) and grade 13(age 18).Therefore, the households that have students of these ages are more likely to spend money on private tuition classes. In contrast, Tanzel and Bircan (2006) found in Turkey that the number of children decreases the household private tuition expenditure.

Finally, there appears to be no significant difference of private tuition expenditure between households with only female children and households with only male children indicating no special priority given to boys' education. This result is contrary to the results of Himaz (2010) as she found a bias favoring girls on education expenditure allocation in Sri Lankan households.

5.2 Determinants of Household Burden for Private Tuition Expenditure

According to the regression results in table 6, household economic burden for private tuition expenditure is higher in recent days especially among households in urban area. The unconditional marginal effects indicate that the economic burden for private tuition expenditure in 2006/07 is about 78% higher than that of in 1995/96.Also the urban households seem to have 11% higher economic burden than other households. The variables that represent age of household head, education level of household head, education level of spouse, number of school aged children in the households, number of

adults in the household, urban households have positive association with economic burden for private tuition expenditure. In contrast, the rural households, female and male children only households, livelihood of household head's income earning variables are negatively associated with household burden for private tuition expenditure.

6. Conclusion and Policy Implications

Private tuition classes are wide spread and growing phenomenon in Sri Lanka especially among the students who take national school qualifying examinations. This is a growing concern for education policy makers as Sri Lanka provides free education up to university level. The private tuition classes may increase the social inequalities and damage the purpose of free education policy. This paper has investigated the determinants of private tuition expenditure and the determinants of economic burden for private tuition expenditure in Sri Lankan households using two national wide household survey data. The results imply that private tuition has become necessity good in Sri Lankan household budget in recent time. The richer households are more likely to spend money on children's private tuition classes, however, the private tuition expenditure gap has been narrowing in over the time. The education level of parents is found to be an important factor of household private tuition expenditure. The positive relationship between level of parental education and household private tuition expenditure indicates high educated parents are more likely to spend money on children's private tuition classes. Majority Sinhalese households are more likely to spend money on children's private tuition classes compare with minority communities. The number of school aged children seems to increase household private tuition expenditure, however, no significant difference in terms gender has found.

The growing demand for private tuition classes has several social implications (Bray, 2007). It may increase the social inequalities as richer households are more likely to spend money on additional private tutoring. The purpose of Sri Lankan free education policy is to give equal opportunity to every child regardless of their income level. Therefore, private tuition classes can harm this purpose. Moreover, it can increase racial inequalities. The gap of education level of rural, urban or majority, minority communities can be worsened due to private tuition classes.

Parents send their children to private tuition classes due to several reasons. Firstly, national school qualifying examinations has become more competitive in recent time. In order to pass competitive examinations, students seem to attend private tuition classes. Secondly, the quality of education in public schools may be low because many schools have lack of educational facilities especially in rural areas. The government and educational policy makers need to take steps to overcome these issues. Sri Lankan government needs to re-consider the free education policy to every child up to university level in Sri Lanka. Sri Lankan government allocate large amount of money to implement free education policy. Instead, government can provide scholarships to needy students and improve the quality of education in public schools by charging some tuition fee especially in higher secondary schools. The results of this paper suggest that parents are willing to pay better quality education. Also educational policy makers can introduce less competitive national school qualifying examinations. For example, if government increases the number of public universities and introduce private universities, A/L examination may become less competitive.

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Table 1: Proportion of households with zero and positive private tuition expenditure in Sri Lanka

Year	Number of Households	Households with zero private tuition expenditure	Households with positive private tuition expenditure
1995/96	13863	10639 (76.74%)	3224 (23.26%)
2006/07	10677	3843 (35.99%)	6834 (64.01%)

Source: Author's calculation based on HIES 1995/96 and HIES 2006/07 surveys

Table 2: Proportion of households with positive private tuition expenditure by total household expenditure quartiles in Sri Lanka

Year	Total household expenditure quartile	Households with positive private tuition expenditure (%)
1995/96	First quartile	6.38
	Second quartile	13.99
	Third quartile	24.55
	Forth quartile	48.11
2006/07	First quartile	59.74
	Second quartile	63.81
	Third quartile	64.03
	Forth quartile	68.45

Source: Author's calculation based on HIES 1995/96 and HIES 2006/07 surveys

Table 3: Proportion of households with positive private tuition expenditure by demographic characteristics

Year	Households with positive private tuition expenditure (%)					
	Rural	Urban	Estate	Sinhala	Tamil	Other
1995/96	19.19	40.48	14.85	24.32	16.72	25.03
2006/07	64.38	62.87	58.19	64.77	59.45	63.55

Source: Author's calculation based on HIES 1995/96 and HIES 2006/07 surveys

Table 4: Proportion of households with positive private tuition expenditure by household head's education level

Year	Households with positive private tuition expenditure (%)			
	No Schooling	Primary Schooling	Secondary Schooling	University Graduate
1995/96	9.53	13.61	29.84	55.29
2006/07	57.61	61.95	65.17	71.43

Source: Author's calculation based on HIES 1995/96 and HIES 2006/07 surveys

Table 5: Percentage of households and percentage of private tuition expenditure in total expenditure

Private tuition expenditure as a percentage of total monthly expenditure	Percentage of Households (%)	
	1995/96	2006/07
0%	76.74	35.99
0-1%	3.96	36.47
1-5%	14.78	23.95
5-10%	3.51	2.74
10% or higher	1.01	0.85
Total	100	100

Source: Author's calculation based on HIES 1995/96 and HIES 2006/07 surveys

Table 6: Tobit maximum likelihood estimation results and marginal effects for private tuition expenditure

	Tobit Results		Marginal effects (Unconditional)		Marginal effects (Conditional on being uncensored)	
Household characteristics						
ln (Total household expenditure)	3.881 ***	(0.000)	1.666 ***	(0.000)	1.266 ***	(0.000)
Year 2006/07 dummy	35.362 ***	(0.000)	19.220 ***	(0.000)	18.313 ***	(0.000)
ln (Total household expenditure) × Year 2006/07 dummy	-3.672 ***	(0.000)	-1.576 ***	(0.000)	-1.198 ***	(0.000)
Ethnicity(Tamil)	-0.336 ***	(0.001)	-0.140 ***	(0.001)	-0.108 ***	(0.001)
Ethnicity(Others)	-0.395 ***	(0.001)	-0.163 ***	(0.001)	-0.126 ***	(0.001)
Household location (Rural sector)	-0.214 ***	(0.009)	-0.093 **	(0.011)	-0.070 **	(0.010)
Employment status(Formal)	0.519 **	(0.011)	0.223 **	(0.011)	0.169 **	(0.011)
Employment status(Informal)	0.428 **	(0.037)	0.184 **	(0.037)	0.140 **	(0.037)
Household livelihood (Agriculture)	-0.048	(0.612)	-0.020	(0.611)	-0.015	(0.611)
Household livelihood (Other sources)	0.205 ***	(0.009)	0.089 ***	(0.009)	0.067 ***	(0.009)
Only female children	-0.519 ***	(0.000)	-0.217 **	(0.019)	-0.167 ***	(0.000)
Only male children	-0.545 ***	(0.000)	-0.228 ***	(0.000)	-0.175 ***	(0.000)
Number of Adults in the households	0.092	(0.206)	0.040	(0.206)	0.030	(0.206)
Number of children in the households(Age 0 to 5)	-0.335 ***	(0.000)	-0.144	(0.409)	-0.109	(0.409)
Number of children in the households(Age 10 to 14)	0.468 ***	(0.000)	0.201 ***	(0.000)	0.153 ***	(0.000)
Number of children in the households(Age 15 to 18)	0.347 ***	(0.000)	0.149 ***	(0.000)	0.113 ***	(0.000)
Number of children in the households(Age 19 to 21)	-0.929 ***	(0.000)	-0.399 ***	(0.000)	-0.303 ***	(0.000)
Household head characteristics						
Household head's age	0.094 ***	(0.000)	0.040 ***	(0.000)	0.031 ***	(0.000)
Household head's age squared	-0.001 ***	(0.000)	-0.0003 ***	(0.000)	-0.0003 ***	(0.000)
Household head's years of education	0.126 ***	(0.000)	0.054 ***	(0.000)	0.041 ***	(0.000)
Spouse's years of education	0.041 ***	(0.000)	0.018 ***	(0.000)	0.013 ***	(0.000)
Regional characteristics						
ln(number of teachers in the district)	-0.142 *	(0.060)	-0.061 *	(0.060)	-0.046 *	(0.060)
ln(average household income in the district)	0.376 ***	(0.007)	0.161 ***	(0.007)	0.123 ***	(0.007)
Constant	-41.286	(0.000)				

Note: Total number of observation is 24480. Pseudo R2 is 0.0964. Numbers in parentheses are p-values.
*** indicates significant at 1 percent level, ** indicates 5 percent level and * indicates 10 percent level.

Table 7: Tobit maximum likelihood estimation results and marginal effects of household burden for private tuition expenditure

	Tobit Results		Marginal effects (Unconditional)		Marginal effects (Conditional on being uncensored)	
Household characteristics						
ln (Total household expenditure)	2.708 ***	(0.000)	0.905 ***	(0.000)	0.759 ***	(0.000)
Year 2006/07 dummy	30.834 ***	(0.000)	15.883 ***	(0.000)	15.131 ***	(0.000)
ln (Total household expenditure) × Year 2006/07 dummy	-3.317 ***	(0.000)	-1.109 ***	(0.000)	-0.930 ***	(0.000)
Ethnicity(Tamil)	-0.207 **	(0.023)	-0.068 **	(0.020)	-0.057 **	(0.021)
Ethnicity(Others)	-0.446 ***	(0.000)	-0.141 ***	(0.000)	-0.121 ***	(0.000)
Household location (Rural sector)	-0.244 ***	(0.001)	-0.083 ***	(0.001)	-0.069 ***	(0.001)
Employment status(Formal)	0.474 ***	(0.009)	0.159 ***	(0.009)	0.133 ***	(0.009)
Employment status(Informal)	0.340 *	(0.062)	0.114 *	(0.062)	0.096 *	(0.062)
Household livelihood (Agriculture)	-0.115	(0.168)	-0.038	(0.013)	-0.032	(0.166)
Household livelihood (Other sources)	0.173 **	(0.013)	0.058 **	(0.013)	0.049 **	(0.013)
Only female children	-0.355 ***	(0.000)	-0.116 ***	(0.000)	-0.098 ***	(0.000)
Only male children	-0.392 ***	(0.000)	-0.128 ***	(0.000)	-0.109 ***	(0.000)
Number of Adults in the households	0.033	(0.613)	0.011	(0.613)	0.009	(0.613)
Number of children in the households(Age 0 to 5)	-0.339 ***	(0.000)	-0.113 ***	(0.000)	-0.095 ***	(0.000)
Number of children in the households(Age 10 to 14)	0.380 ***	(0.000)	0.127 ***	(0.000)	0.107 ***	(0.000)
Number of children in the households(Age 15 to 18)	0.361 ***	(0.000)	0.121 ***	(0.000)	0.101 ***	(0.000)
Number of children in the households(Age 19 to 21)	-0.565 ***	(0.000)	-0.189 ***	(0.000)	-0.159 ***	(0.000)
Household head characteristics						
Household head's age	0.079 ***	(0.000)	0.026 ***	(0.000)	0.022 ***	(0.000)
Household head's age squared	-0.001 ***	(0.000)	-0.0002 ***	(0.000)	-0.0002 ***	(0.000)
Household head's years of education	0.119 ***	(0.000)	0.040 ***	(0.000)	0.033 ***	(0.000)
Spouse's years of education	0.031 ***	(0.000)	0.010 ***	(0.000)	0.009***	(0.000)
Regional characteristics						
ln(number of teachers in the district)	-0.052	(0.443)	-0.017	(0.443)	-0.014	(0.443)
ln(average household income in the district)	0.504 ***	(0.000)	0.168 ***	(0.000)	0.141 ***	(0.007)
Constant	-32.836	(0.000)				

Note: Total number of observation is 24480. Pseudo R2 is 0.0676. Numbers in parentheses are p-values.
*** indicates significant at 1 percent level, ** indicates 5 percent level and * indicates 10 percent level.