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Free University Education in Sri Lanka: Is It Benefited for Poor Households?

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Abstract

Since 1944, Sri Lankans have had a free education system from grade one to university level. Sri Lanka has achieved nearly 100 percent enrollment at the secondary school level but is unable to provide university education for all students who qualified university entrance exam. The evidence shows that household spends significant proportion of their income on education. When poor households are unable to spend on education as rich households, the Sri Lankan education system has not become a level playing game. Hence, the main objective of this study is to identify the beneficiaries of free university education in Sri Lanka. The study is based on the secondary data collected from the Department of Census and Statistics in Sri Lanka. The logit regression model is used to calculate the probability of obtaining the degree of the individuals in different income deciles. Findings show that individuals living in urban and higher income deciles have more chance to obtain a degree than others. It indicates that the Sri Lankan free education system is more beneficial for rich households.

Keywords

Free education; State University; Social Equity; Income inequality

1. Introduction

Since 1944, Sri Lankans have had a free education system from grade one to the university level. Currently, the state university system consists of 17 Universities and 19 institutes. The expenditure on university education as a percentage of total government expenditure has been around 2% in the last three years. Annually 346,976 students sit for G.C.E. A/L and about 66% qualify to apply to state universities. Out of the total qualified students, only 25 percent of students get a chance to enter state universities. With the free education system though, Sri Lanka achieved nearly 100 percent enrollment at the secondary school level but was unable to provide university education for all students who qualified in the general certificate of advanced level (G. C. E. A/L) for university entrance. The main reason for the lower enrollment rate is the state university system has not been expanded to cater to the demand for higher education.

As there is a limited number of placements, there is a high competition to enter state universities. Though government schools provide education for G.C.E. (A/L) free of charge most parents send their students for tuition classes to train for the G.C.E.(A/L) examination. According to the Income expenditure survey 2019 conducted by the department of census and statistics on average family monthly expenditure on education is about 2400 rupees per month. A household in the urban sector's average expenditure on education is about 4130 rupees per month whereas rural and state sector expenditures are respectively 2948 rupees 114 rupees.

Theses evidence shows that the education system in Sri Lanka today does not provide equal or equitable opportunities on a level playing field for the students. Students from poor households are not able to compete with students from rich families as their parents do not have enough money to afford private tuition. Also, with this competition in the education

market, the cutoff marks for university entrance have been increased. As an example, to enter medical faculty at the state university students have to obtain at least two A pass and one B pass. As students may not obtain these results on the first attempt some students re-sit for the G.C.E. (A/L) exam one or two times. However, students from poor households may not be able to re-sit G.C.E. (A/L). This evidence shows that though the government provides free education, students from households with higher incomes have more advantages to enter state universities.

Hence the main objective of this research is to calculate the probability of obtaining a degree, for students from different socio-economic segments. The specific objective is to identify determinants of obtaining a degree or above qualification.

2. Literature review

Free education is a debatable concept in literature. According to the Universal Declaration of Human Rights 1948 everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. United Nations Educational, Scientific and Cultural Organization (UNESCO) works to achieve education for all. After the above declaration, many countries have introduced free education systems to achieve the motto of education for all.

However, there is a debate among researchers about the outcome and rationale of a free higher education system. Some researchers have pointed out the rationales behind the free-tuition higher education system. The government should provide free higher education as higher education has positive externalities. Expenditure on education can be identified as a capital expenditure because it creates human capital. Solow's growth model explains the relationship between human capital and economic growth. These researchers support the debate of the free higher education system as it is a significant determinant of economic growth.

On the other side, some researchers opposed to free higher education system on a different basis. In 1977 Psacharopoulo pointed out that free education has aggravated the social disparities rather than alleviated them. The main reason for that is though university education is free of charge the entrance to university depends on competitive exams. As there are a limited number of placements available in the state universities the competitive exam favours students from high-income families who can afford the substantial direct cost of private preparation for the university entrance examinations and the indirect cost of foregone earnings while the student is at university. By considering these factors England shifted from a free college system to a tuition fee system, and after two decades evidence shows that there is no significant difference between college enrollment rates among advantaged and disadvantaged students (Murphy, Scott-Clayton, & Wyness, 2019).

Marshall and Fukao (2019), Wiseman (2021), and Bray and Hajar (2023) have analyzed the impact of the shadow education system of private supplementary tutoring on students' performance. Private supplementary tutoring has been prominent in several rich countries of East Asia and also in lower-income countries such as India and Sri Lanka (Bray, 2022). According to Bray 2021, private tutoring may contribute to students' achievement, but it exacerbates social inequalities and can contribute to inefficiencies in education systems. This evidence shows that the direct cost of education has played a vital role in free education in favor of rich families.

3. Methodology

This study is based on the secondary data collected from the Income Expenditure Survey 2019 conducted by the Department of Censuses and Statistics Sri Lanka. For Sri Lankan state universities the entrance age is about twenty years hence individuals who are twenty or above may have an equal chance to enter state universities in Sri Lanka. Therefore, the sample of Individuals who are twenty and above years old has been selected from the income expenditure survey for this study.

The dependent variable of this study is a dichotomy variable which is equal if individuals are in university or obtained a degree or above qualification. Income deciles of the household, household size, Gender of household head, living sector, and gender of individual have been selected as independent variables.

The logit regression model has been used as a main analytical technique.

$$P_i = F(Z_i) = \frac{1}{1+e^{-z}} \quad (1)$$

$$Z = \beta_1+\beta_2 x_i+\beta_2 D_2 +\beta_3 D_3 +\beta_{4i} \sum_{n=2}^{i=1} D_{4i} + \beta_{6i} \sum_{n=9}^{i=1} D_{6i} \quad (2)$$

x_i = Household size
D_2 = 1 for male individual , 0 for otherwise
D_3 = 1 for male ihousehold head , 0 for otherwise
D_4 = 1 for Rural sector , 0 for otherwise
D_5 = 1 for Estate sector , 0 for otherwise

$D_6 = 1$ for househod income is in second income deciles , 0 for otherwise[1]

P_i is the probability of obtaining a degree level education and it is a function of Z. Marginal effect of changes in independent variables on probability (P_i) can be calculated using the below equation.

$$\frac{\partial p}{\partial x} = \frac{\partial z}{\partial x} = f(z)\beta \quad (3)$$

In function 1 (P_i) is a function of Z hence the impact of changing Z on P_i can be calculated using quation rule as presented in below equation 4.

$$f(z) = \frac{\partial p}{\partial z} = \frac{e^{-z}}{(1+e^{-z})^2} \quad (4)$$

In function 2 Z is a linear function of independent variables hence the impact of changing independent variables can be calculated using the linear function rule as in equation 5. For continuous variables, the marginal effect shows the impact of one unit change from its average on probability. For the dummy variables, it shows how probability changes when the dummy variable changes from one to zero.

$$\frac{\partial z}{\partial x} = \beta \quad (5)$$

As P is a function of z and z is a function of independent variables hence product rule (as in equation 03) can be used to identify the impact of changes in independent variables on probability.

4. Finding and discussion

There are about 56564 individuals who are age 20 years and above in the sample. Out of the total sample, only 4.20% of them have a degree or above education qualification. This indicates that the Sri Lankan free university education system serves only for small proportion of the population. The percentage of females with a degree and above qualification (4.6%) is significantly higher than the percentage of males (3.8%) with a degree and above qualification. The findings show that the gender of the household head is also a significant determinant of achieving higher education in Sri Lanka. The percentage of individuals with a degree and above qualification from male-headed households is significantly higher than the percentage among female-headed households.

Table 1. Degree and above qualification by income deciles

Deciles	Urban	Rural	Estate	All
1	1.0%	.8%	0	.7%
2	1.4%	.9%	0	.8%
3	2.3%	1.2%	0	1.2%
4	2.6%	1.5%	0	1.4%
5	4.5%	2.4%	.8%	2.0%
6	6.8%	2.4%	0	2.7%
7	7.0%	3.3%	1.2%	3.9%
8	11.2%	5.3%	0	5.7%
9	14.9%	7.0%	.8%	8.0%
10	24.7%	11.8%	5.0%	15.6%
All	7.60%	3.7%	0.80%	4.20%

The highest proportion of individuals with a degree and above qualification has been reported from individuals from the urban sector. The findings show that though education is free of charge only less than one percent of individuals who live in the estate sector have obtained a degree and above qualification. Further findings show that only 3.7% of individuals living in the rural sector have obtained a degree and above qualification whereas that percentage among individuals living in the urban sector is 7.6%. This may be due to two reasons. Reason one is schools in the urban sector have more facilities than the other two sectors and the income of households in the urban sector is higher than the other two sectors. Hence, students in the urban sector have more opportunities to obtain higher results for the G.C.E. AL examination. The

[1] D_6 to D_9 are dummy variable for income deciles . Reference group is 1st income desiles.

chi-square test statistics show that these percentages are significantly different which indicates that the living sector is a significant determinant of achieving higher education.

Table 1 shows degree and above qualification by income deciles. As school education and university education in Sri Lanka are free of charge individuals in all income deciles should have an equal chance to enter state universities in Sri Lanka. However, the findings in the below tables show that income is a significant determinant of university entrances. In general, only 4.20 percent have a university degree and above qualification but in the highest income deciles, about 15 percent of individuals have a degree or above qualifications. On the other hand, among the poorest income deciles less than 1 percent of individuals have a degree and above qualification. This indicates that though the government provides education free of charge more benefits go to rich people. Higher education supports people to move from the lower income bracket to the higher income bracket hence it reduces the income inequality in a country.

To identify the effect of the living sector and the income levels on university education income deciles and the percentage of individuals with degree qualifications were calculated by sector of living. The findings clearly show that in the estate sector, there is no individual with a degree and above qualifications in the poorest four income deciles. In the highest income deciles also only 5 percent of individuals have degree qualifications. It indicates that the free education system is more beneficial for rich individuals living in the urban and rural sectors. About 25 percent of individuals in the urban sector in the highest income deciles have degree qualifications. Among the rural sector, this percentage is about 12 percent. In the urban and rural sectors, there is about 1 percent of individuals in the poorest income deciles have degree qualifications.

According to the Chi-square test results presented in Table 2 below the overall model is significant. Expect the coefficient related to the second poorest income deciles all the coefficients in the model are significantly different from zero at the acceptable level of significance which indicates that all these factors are significant determinates of obtaining a degree and above qualification. The sign of all coefficients of income deciles is positive which indicates that the probability of obtaining a degree or above qualification is higher than the probability of obtaining a degree in the poorest income deciles. The sign of the living sector dummies is negative which indicates that the probability obtains a degree of individuals living in the urban sector is higher than the other two sectors. The sign of the household size is positive which indicates that the probability of obtaining a degree has increased with the increase of the family size.

Table 2. Regression results

Independent variables	Coefficients (Standard Errors)	Marginal effect
Income deciles		
2	0.076 (0.220)	0.000
3	0.545 (0. 201)	0.005
4	0.696 (0.195)	0.007
5	1.042 (0.186)	0.012
6	1.326 (0.181)	0.018
7	1.723 (0.175)	0.030
8	2.118 (0.171)	0.047
9	2.494 (0.168)	0.700
10	3.23 (0.166)	0.141
Sector		
Rural	-0.296 (0.048)	- 0.008
Estate	-1.300 (0.230)	-0.024
Gender	-0.244(0.043)	-0.006
Household size	0.093 (0.013)	0.002
Gender of Head of household	0.190 (0.055)	0.004
Constant	-5.098 (0.182)	
LR Chi2 (14)	2408.72	
Prob > Chi2	0.000	
Pseudo R2	0.122	

As explained in the methodology section marginal effects were calculated at mean to identify the impact of each independent variable on the probability of obtaining a degree. Marginal effects show the change in probability when the predictor or independent variable changes by one unit. For numerical variables, this represents the impact of probability due to instantaneous change in independent variables. For binary variables, it shows how probability changes when the value of the dummy variable changes from 0 to 1. The marginal effect related to household size is 0.0023 which shows that when household size increases by one unit from the mean household size probability of obtaining the degree of individual living in that household has increased by 0.0023.

The marginal effect related to 10^{th} income deciles is 0.1412 which shows that the probability of obtaining a degree of an individual who is in the 10^{th} income decile is 0.1412 higher than an individual who lives in other income deciles. It shows that the margin effect related to income deciles has increased when deciles move from lowest income to higher income.

The marginal effect of the rural sector is -0.008 which indicates that the probability of obtaining a degree for an individual living in the rural sector is 0.008 less than compared to individuals living in other sectors. Compared to the individuals who live in other sectors. Individuals living in the estate sector have a lower probability of obtaining a degree.

Based on the regression results probability was calculated at the mean level of each independent variable. The individuals who live in the lowest two income deciles have less than a one percent probability of obtaining a degree from university. The individuals who live in middle-income deciles (5^{th} and 6^{th}) have about a 2 percent probability of obtaining a degree from university. These findings further show that the Sri Lankan free higher education sector is more beneficial to rich people. The probability of obtaining a degree or above qualifications has varied with the living sector. Individuals who live in the urban sector have more chance to obtain a degree and above qualifications than others.

5. Conclusion and policy recommendation

The purpose of this research is to identify who are the beneficiaries of the free university education system in Sri Lanka. The findings clearly show that a free university education system is more beneficial to households in upper-income deciles. There are two main reasons for this situation. The reason is that there are limited placements in the public University in Sri Lanka. The second reason is university entrance exam (G.C.E. Advance level) is highly competitive and is not a level-playing field exam. Students from higher-income deciles have more advantage in getting higher scores for university entrance exams. On the other hand, students from lower-income deciles mainly rely on the free education system to get good results for the G.C.E. AL examination. Hence it is observed that students from higher income deciles have more chance to enter Government University than students from lower income deciles.

The long-term solution for this issue is to expand the university system in Sri Lanka to accommodate all qualified students to universities. However, as currently Sri Lankan economy is in a crisis situation providing free education for all might not be a sustainable solution. Hence government should encourage private investment in the higher education sector while introducing a full scholarship or loan system for students in poor households. Also, the government should strengthen the monitoring and evaluation system for the higher education sector.

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