Link Between Admission Standards and Student Undergraduate Performance at the Faculty of Arts of Sri Lankan Public Universities

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Introduction

Sri Lanka's Arts graduates have the lowest employment rate among graduates of the Sri Lankan (public) higher education system (Graduand employability census, 2012) and the problem of unemployment among Arts graduates has been persisting for the past few decades and has been the subject of much debate. The issue has been examined through the perspectives of students, the university system, and the private sector and government (as potential employers). Many studies point to structural unemployment, as the cause of the issue. A tendency on the part of the government to resolve the issue by hiring arts graduates is said to have led to more problems such as under-employment and relatively low salaries. Therefore, current solutions look to the private sector and require graduates to make themselves more 'employable' by acquiring skills required by the private sector, such as I.C.T and English language skills (Ariyawansa, 2011).

In the neo-classical model of human capital, engaging in education is seen as a form of investment in human capital where benefits accrue in the long term, in the form of higher earnings. Furthermore, the neo-classical human capital model elaborates that, irrespective of investments in human capital, different levels of innate ability of

individuals will be translated into different levels of productivity at the work place. Here ability is defined in relation to the demands of employment and therefore could mean physical strength or intellectual capabilities. Alternatively, there is also the idea that education performs a signaling function (Arrow, 1973), where educational attainment of prospective candidates may not necessarily have a direct relationship to productivity, but nevertheless acts as a signal of ability to interested employers. Accordingly, employers will therefore use education as a screening device as they believe it reflects innate ability.

Hanushek (1995) builds on the idea of education production functions which is similar to a (physical) production function relating inputs to outputs. Hence an education production function shows that student outcomes – schooling attainment (usually measured as years of schooling) or schooling achievement (reflected in a score in a standardized test or examination), depends on a multitude of input factors that affect student learning. A study by Harmon et al. (2011) with regard to the Irish tertiary education system, analyzes the relationship between socio-economic status and student outcomes at university level. The study analyses student outcomes (performance in their degree program) as a function of parental socio-economic status, prior educational attainment, characteristics of the institution and course attended and characteristics of the student (gender, age, personality measures, etc).

Recent studies in education, particularly by James Heckman, indicate that a variety of outcomes are determined not just by years of schooling, but also by cognitive and non-cognitive skills (Heckman et al. 2006). The latter include not just technical skills or "employability" skills like English and Information Technology, but also socioemotional skills sometimes known as personality traits. Kautz et al. (2014) argue that these are malleable, and therefore should be considered skills that can be acquired rather than traits that cannot be changed.

We argue, that the (low) initial (entry level) ability of arts/humanities undergraduates is a significant constraint in ensuring high performance outcomes at university level, leading to a problem where the majority of students are not competent enough to secure themselves jobs (especially in the private sector) upon leaving the university. We follow Harmon et al.'s (2011) approach, to explore the link between initial ability of students' (at the point of entering the faculty of arts), their socio-economic status, and their outcomes of academic achievement. We include in the analysis the effect of personality traits, also known as non-cognitive skills, on student outcomes. The results of this study provide an indication of whether the faculties of Arts of Sri Lankan universities (as proxied by the University of Peradeniya) are absorbing the right input to ensure an output of a higher quality – an employable graduate.

Objectives

The primary objective of this study is to identify the nature of the relationship between the GPA (outcome) and the Z – Score received at A/L as a measure of initial ability. Secondary objectives included, identifying the effect of the socioeconomic background of a student on performance at university level and ascertaining the impact of socioemotional skills or personality traits on academic performance of a student.

Methodology

The model is a form of an education production function. The left-hand side variable is student outcome and the right-hand side variables are student inputs. Variable definitions are provided in Table 1.
Student outcome = f (Entry requirement, S.E.S, Personality traits)

$$CGPAi = \alpha + \beta(Zi) + \theta(MNYEi) + \chi(FNYEi) + \mathrm{Ч}(GGY) + \varphi(SOC) + \lambda(Oi) + \gamma(Ci) + \rho(Ei) + \kappa(Ai) + \omega(Ni) + \varepsilon i \quad (1)$$

Table 1: Definitions of Variables

Variable	Definition	Variable	Definition
CGPA	Current grade point average	C	Conscientiousness
Z	Z-score	E	Extraversion
MNYE	Mother's no: of years of education	A	Agreeableness
FNYE	Father's no: of years of education	N	Neuroticism
GGY	Dummy variable for geography students	E	Error term
SOC	Dummy variable for sociology students	α ,β, θ, χ, ϰ, φ, ϫ, ϭ,	Estimates of parameters
O	Openness	λ, γ, ρ, κ, ω	

Here the student outcome is the current grade point average of a student, which is dependent on, the entry requirement - the Z-score, the number of years of education of the father and mother (included as two separate variables) is used as a proxy for a students' socio-economic status and the personality test scores of the big five personality traits. The scores were computed and standardized to facilitate comparison. Additionally dummy variables for the area of specialization were included as well.

Primary data was obtained from 60 students specializing in the areas of Economics, Geography and Sociology from the Faculty of Arts University of Peradeniya, through a questionnaire designed for the purpose of the study, which collected information on the variables listed in Table 1. Measures of socioemotional skills were obtained from questions based on the survey instrument of the STEP Skills Measurement Surveys – World Bank (2014). Students were selected using a random stratified sampling method, where subject specializations formed the strata. Sub-samples of students were randomly selected where class lists provided the complete listing of all students within the strata.

Results and Discussion

The results show that Z-score is significant at 10 % level of confidence, father's number of years of education is significant at 1%, dummy variable for Geography is significant at 0.1%, personality traits of conscientiousness and agreeableness both are significant at 5% level of confidence. A change in the Z-score of a student by one point has a positive effect of 0.242 points on the CGPA, which is equivalent to 80 % of the interval between letter grades including + or – (for example, a B is 3.0 while B+ is 3.3) while an increase in the father's number of years of education by one year increases the CGPA by 0.0312 points.

The performance of a student specializing in Geography is 0.354 points less than of a student specializing in Economics. The performance of students specializing in Sociology and Geography are a class (second upper vs. second lower) below the performance of students specializing in Economics. For example the average Z-score of a student specializing in Geography is 1.72 and their average CGPA is 3.11 vs. the average Z-score of a student specializing in Economics is 1.76 and their average GPA is 3.48). Therefore it can be said that there is a tendency for students to be segregated into departments according to initial ability, where some departments absorb more able students than others. This may be a point of concern as a lack of distribution of students according to ability among the fields of specialization may mean that there is a chance of graduates specializing in a particular field being prone to unemployment than others. This may also be reflected in the claim that some programs within arts faculties lack quality.

Additionally, Conscientiousness has a negative effect on performance where a student who is more conscientious will lose 0.0888 points for having such a disposition while agreeableness is rewarded by the addition of 0.0737 points into their CGPA. Conscientiousness is defined as "the tendency to be organized, responsible, and hardworking" the fact that not only are hard-working students not rewarded but that

they are penalized, as pointed out by the regression analysis should be a point of concern.

It is observed that the Z-score cut off point for the Arts stream fluctuated around 1.3 points for decades. This was the case till 2014, when the cut-off point for the Faculty of Arts of the University of Colombo, started to pick up and stood at 1.7 in 2015. A similar development can be observed for the University of Peradeniya (1.6) in 2015 as well. There are signs of other universities following this trend (Sri Jayawardanapura 1.5) but as of now the cut-off point to enter the arts faculty of most other universities lies between 1.1-1.3. Given the results of this study a continuation of this trend of advancing of the standard is a welcome development. Furthermore, raising the quality of education received by school level students may contribute in producing more competent students. Drawing from the neo-classical model of human capital, it can be deduced that better learned parents are also higher earners (investment in human capital is made with the aim of maximizing life time earnings potential). Therefore, the results also imply that children of richer parents perform better.

Conclusion and Policy Implications

The Z-score cut-off point depicts the average performance of the cohorts of students entering into different universities. Currently, there is a large variation in the Z-scores (cut-off points) of students entering into the Arts Faculties of the public universities. Thus, when considering the policy implications of this study, given the positive relationship between the two variables, it is advisable to take steps to reduce the large variation in the standard of admittance into the Faculty of Arts, by raising the standard up to a common higher standard acceptable by all universities.

The current variation in the cut-off points of Z score maybe attributed to the variation in quality between degree programs offered by universities. Thus steps need to be taken to reduce the drastic difference in the acceptable standards between universities by standardizing

degree programs. Also, raising the standard of admittance cannot be done exogenously; artificially setting a higher standard will not be beneficial to either the universities or the students. What is needed is an endogenous increase in the standard of performance of students engaging in education through the arts stream at the school level (Advanced Level class).The results of the study also indicate a positive relationship between parental educational achievement and the child's performance.

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