## Technical efficiency in the production of economic knowledge in state universities in Sri Lanka: A nonparametric perspective on multiple outputs and the role of students

N. Kurukulasooriya<sup>1</sup>, A. Ranasinghe<sup>2</sup>

<sup>1</sup>Department of Economics, University of Ruhuna, Sri Lanka

<sup>2</sup>Department of Economics, University of Colombo, Sri Lanka

The performance of Sri Lankan state universities has come under scrutiny due to the need for accountability for the consolidated funds being invested. Following criticism of the teaching-learning process for its quality and standards, social science disciplines have undergone significant changes. Assessing undergraduate performance is vital in many respects. The objective of this study is to investigate the performance of undergraduates in Economics degree programmes. Economics knowledge is critical in higher education, contributing to the outcomes of future employees, entrepreneurs, and voters. Primary data was collected from a sample of 1002 undergraduates from Special Degree programmes in Economics in state universities. Joint production function was estimated and evaluated using second-stage DEA analysis. Economics Attitude Sophistication (EAS) and Attitude Towards Economics (ATE) have been introduced additionally to Grade Point Average (GPA) in the production function. Empirical findings reveal that economics students are not technically efficient. Minimum mean efficiency varies from 65% to 85%, so further improvement of outputs between a range of 15% to 35% is possible. Output targets were set for each output. Output target of EAS varies from three percent to 11%. It is three percent to 12% for ATE and two percent to nine percent for GPA. Statistically significant efficiency variations were observed among different universities. Lower performers were identified in each degree programme. Entry qualification for Special Degree, the effect of peers, English language proficiency, AL Z-score, average attendance, and grade obtained for Economics at AL examination, significantly influence learning efficiency. Policy strategies must focus on further improvement of interactive teaching-learning methods while introducing undergraduate teaching assistantships. The University Grants Commission (UGC) can consider its student distribution policy to share the benefit of peer effect. The undergraduate evaluation process can also be considered for revision.

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