

ABSTRACT

National attention is now focused on the educational reforms. There is a need to acquire a better understanding of the education production in Malaysia using advanced multivariate analysis. Our starting point is the premise that the education production function is a real and potentially very useful tool for those concerned with improving the performance of schooling systems. This study employs Vinod's (Vinod, 1968) adaptation of Hotelling's Canonical Correlation Analysis to perform the parameter estimate for joint educational production with Cobb-Douglas functional form. It incorporated data from the national sources and IEA Third International Mathematics and Science Study – Repeated (TIMSS-R) 1999 into a comprehensive look at the relationship between educational inputs and outputs.

We have selected a small number of main determinants of academic achievement for Canonical Correlation Analysis. The differences in rural and urban school's performance are disclosed by investigating their separate production functions. The results reveal that Malaysian secondary schools are more productive in the teaching and learning process of science than mathematics nationally. Comparing the performance between two educational outputs, this analysis suggests that average achievement in mathematics is higher than science at urban schools. Oppositely, rural schools perform better in science than mathematics. Overall, this input-output relationship conclude that instructional hour is an effective and important variable that could be used to offset the disadvantage in low level of out-of-school study time to the educational production function in rural areas. In other words, the analysis suggests that extra instructional time for rural schools and certain poor urban schools is essential in obtaining better academic achievement.