Statistical decompositions of the Increase in TIMSS Scores in Morocco between 2011 and 2015

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Abstract

Mathematics and sciences achievement of Students is often related to the economic development and competitiveness of a country. Therefore, the desire to study the trend of this achievement or to understand and identify factors that may have meaningful relationships with mathematics and science achievement has been shared among national policy makers and education actors around the world.

This desire is strongly needed for a developing country such as Morocco when the education takes second national priority after the territorial integrity. The Moroccan education sector has undergone several reforms in recent decades. The result is the realization of several objectives such as generalization of education, expanding the supply of training, school construction, etc. But the issue of quality is still below aspirations, particularly those affecting academic performance. So, an important task is to look for the determinants of good academic performance in the Moroccan context.

This study attempts to explore certain aspects underlying the increase in 8th grade student performance in Morocco on the Trends in International Mathematics and Science Study (TIMSS) from 2011 to 2015. The TIMSS data showed that for the college secondary cycle, the national average in mathematics rose from 371 to 384 points with an increase of 15 points, and from 376 to 393 in science .

Methodologically, we employ the quantile regression and Blinder–Oaxaca decomposition methods, to measure changes in the return to education across differents quantiles and to explain the contribution of family background and school climate in increase of students performances from 2011 to 2015. The results are very significant and can be used for decision-making.

Keywords: Oaxaca-Blinder decomposition; quantile regression decomposition; TIMSS; achievement of Students.