MULTILEVEL ANALYSIS OF INTER-LEVEL MATHEMATICS ACHIEVEMENT BASED ON PISA DATA 2012-2018

by Kismiantini, Ezra Putranda Setiawan

ABSTRACT

The scores of the Program for International Student Assessment (PISA) in mathematics for Indonesian students from 2000 to 2018 fluctuated up and down. PISA test participants are students aged 15 years. The existence of differences in the education system and access to education in various countries means that these students can be found at the junior high school and high school levels. This results in a variety of learning experiences in mathematics with the hope that students at higher levels of education have been participating in learning mathematics longer than students at lower levels of education. PISA data has a hierarchical structure where students are nested within schools and there is a diversity of mathematics achievements between students and between schools so that data analysis is carried out using multilevel analysis. The aim of the study was to identify the effect of educational level on the mathematics achievement of 2012-2018 PISA students using multilevel analysis. The results of data exploration showed that the 2012, 2015, and 2018 PISA samples consisted of students in grades 7, 8, 9, 10, 11 and 12 with a sample of more than 39% selected from students in grades 9 and 10. The results of the multilevel analysis found that there was an effect of status economic, social and cultural (economic, social and cultural status, ESCS) and class on mathematics achievement; the average mathematics achievement in grades 8, 9, 10 and 11 was higher than students in grade 7. A higher number of students in grades 9 and 10 were reported with math achievement scores equal to or higher than the OECD average mathematics score.

Kata Kunci: *PISA mathematics, multilevel, inter-level*