

ACADEMIC MOTIVATION, MATHEMATICS
ACHIEVEMENT, AND THE SCHOOL CONTEXT:
BUILDING ACHIEVEMENT MODELS USING TIMSS 2003

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ABSTRACT

Using the TIMSS 2003 data, this study built mathematics achievement models of eighth-graders in four selected countries: the United States, the Russian Federation, Singapore and South Africa. Students' motivational beliefs, parents' education level, teachers' and principals' perceptions, and other characteristics related to the classroom and school were incorporated and used to build the achievement model in each country. Hierarchical Linear Modeling was applied to the model building process with level-1 being students and level-2 being classrooms in each country. The final achievement models suggested that student self-confidence in learning mathematics, which overlaps with self-efficacy, expectancy, and self-concept, was the most important construct among other student variables, to affect eighth-graders' mathematics achievement in all four countries. The effects of other student characteristics, along with the family, teacher, and school variables, differed across the selected countries.