

## AN OPPORTUNITY TO EXPLORE INCLUSION IN THE STATISTICS CLASSROOM WITH THE SMARVUS DATASET

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### INTRODUCTION

For statistics education to be inclusive, we must understand whether and which teaching practices affect student outcomes, and via which processes. Gathering data to explore these questions can be a slow process, as researchers can often only collect one dataset from each cohort of their students, often with only enough variables to test a single hypothesis. Such samples can also be relatively small and homogenous, limiting generalisability. This poster presents key information about the Statistics and Mathematics Anxiety and Related Variables in University Students (SMARVUS) dataset (Terry et al., 2022), which contains data on a wide variety of variables from multiple cohorts at multiple universities worldwide and, therefore, the potential to overcome these problems.

### THE SMARVUS DATASET

The SMARVUS dataset contains  $N = 12,570$  participants from 100 universities in 35 countries and was collected via online surveys in 21 languages during 2021. Primarily collected to explore the distinctiveness of statistics and mathematics anxieties, SMARVUS data can be used to examine many other research questions, including many regarding inclusion.

SMARVUS data includes measures of various anxieties (statistics, mathematics, test, trait, social interaction, performance, creativity, intolerance of uncertainty, and fear of negative evaluation) as well as theoretically related variables (self-efficacy, persistence, and the cognitive reflection test). The data also includes pre-university mathematics grades, statistics grades (self-reported and official), personal demographics (e.g., age, gender, specific learning difference diagnoses), degree information (e.g., major and study year), and considerable detail about students' statistics modules (e.g., module content, mode and frequency of delivery and assessment, assessment dates, and much more).

### REUSE POTENTIAL FOR INCLUSION RESEARCH

Researchers using the SMARVUS data could test relationships between a range of teaching practices (e.g., delivery and assessment modes) upon a range of outcomes (e.g., anxiety, self-efficacy, or grades) for a range of different groups (e.g., based upon gender, learning differences, or anxiety levels). Moreover, the data uniquely facilitates cross-lingual and cross-cultural comparisons, and the larger-than-usual sample size improves the likelihood of precise, robust estimates.

Identifying associations between our teaching practices and outcomes for different groups would be another step towards to fully understanding – and, ultimately, improving – inclusion for our students.