

Master thesis abstract

Examining the correlation between university instructors' research performance and student evaluations using data science tools

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2024

The relationship between the research and teaching performance of university educators has long been a focus of study, and the results of these investigations can be crucial in developing higher education strategies and appropriate incentive systems. While it is generally accepted that higher education and research have a mutually positive impact on each other, individual studies only partially support this.

The aim of my thesis is to contribute to the literature on this topic and to examine the relationship between research and teaching quality among instructors at BME (Budapest University of Technology and Economics) using traditional statistical methods and modern machine learning tools. Research performance is measured using data extracted from the MTMT ("Magyar Tudományos Művek Tára", Hungarian Scientific Bibliography) database while teaching performance is measured using scores from the SET (Student Evaluation of Teaching) questionnaires. After taking appropriate data processing steps, we analyze the large amount of data on more than a thousand educators using various regression models and interpretable machine learning techniques. The results show that active research contributes greatly to improving SET scores, especially in postgraduate courses, but an increase in research quality often implies a decrease in SET scores.