Proceedings of the International Conference on Industrial Engineering and Operations Management

Publisher: IEOM Society International, USA DOI: 10.46254/GC03.20250233
Published: February 2, 2026

Measuring Research Efficiency and Societal Impact of Private Universities in the UAE

Dua Weraikat
Mechanical & Industrial Engineering Department
Rochester Institute of Technology, Dubai Campus
Dubai, UAE
dxwcad@rit.edu

Bushra Soummakie
Business Administration Department
Antalya Bilim University
Antalya, Türkiye
bushra.soummakie@antalya.edu.tr

Kristina Šorić
Business Department
Rochester Institute of Technology, RIT Croatia
Zagreb, Croatia
kristina.soric@croatia.rit.edu

Abstract

This study evaluates and ranks the research efficiency of private universities in the United Arab Emirates (UAE) using a two-stage Data Envelopment Analysis (DEA) framework. 25 private universities with at least five years of establishment were included to ensure comparability and research maturity. In stage 1, the model considered input variables such as number of academic staff, research centers, and enrolled students. Stage 2 focused on outputs including publications, accredited programs, citations, patents, and industry partnerships. Results show that 56% of the universities (14 out of 25) achieved an efficiency score of 1, indicating they are on the DEA frontier. 11 universities (44%) exhibited varying degrees of inefficiency, with scores ranging from 0.33 to 0.89. Slack analysis revealed that publication output was the most common source of inefficiency, followed by accredited programs and citation impact, particularly in low-performing universities. For example, several institutions showed publication slacks exceeding 600 documents and citation gaps of more than 700, indicating underutilization of resources. These findings highlight the existence of a performance gap between top-tier and lower-performing universities. Efficient universities can serve as benchmark institutions, while moderate and low performers can use the identified slacks as improvement targets. The study aligns with the UAE Ministry of Education's current focus on enhancing research productivity and impact across higher education institutions. The results provide actionable insights for university leaders and policymakers to strengthen research capacity, foster innovation, and advance the global competitiveness of the UAE's private higher education sector.

Keywords
Data Envelopment Analysis, Research Efficiency, UAE Private Universities, Performance Ranking, Slack Analysis.

© IEOM Society International

Biographies

Dr. Dua Weraikat, Ph.D., Eng., is currently an Assistant Professor and MEIE Program Coordinator at the Rochester Institute of Technology, Dubai Campus. She brings a strong academic and research background in industrial engineering, with expertise in operations research, supply chain management, and sustainable reverse logistics. Prior to joining RIT Dubai in 2017, she held research and teaching positions at Concordia University, Canada, where she completed her Ph.D., and later served as a postdoctoral researcher at Université Laval, focusing on value chain coordination in the forest industry. With over 15 years of experience across academia and industry, Dr. Weraikat has contributed to several impactful publications, including journal articles and book chapters, in areas such as green supply chains and pharmaceutical logistics. She has also taught various courses including production planning, operations research, and project management. Her leadership is reflected in her current role on the Operations Research Division Board of the Institute of Industrial and Systems Engineers (IISE) for the 2025–2027 term. Fluent in English, Arabic, and French, Dr. Weraikat is passionate about integrating smart and sustainable solutions into engineering education and research, mentoring students, and fostering collaboration across academic and industrial platforms.

Bushra Soummakie, Ph.D, is an Assoc. Prof. at Antalya Bilim University**.** She earned her B.S. in Statistics, M.Sc., and Ph.D. in Operations Research from the Faculty of Economics at Aleppo University. With over 28 years of teaching experience, she specializes in courses such as Quantitative Methods, Management Science, Statistics, Quality Management, and Project Management. Dr. Soummakie has served as an assistant professor and subsequently as an associate professor as full-time academic staff member at Aleppo University in Syria, Alzaytoonah University in Amman, Jordan, Hasan Kalyoncu University in Gaziantep - Türkiye, and since 2017, at Antalya Bilim University in Türkiye. She has extensive teaching experience in the M.Sc. and MBA programs at all of these institutions. She has published several articles in the fields of Operations Research and Quantitative Analysis, focusing on topics such as Goal Programming, Multi-Criteria Decision Making, and Data Envelopment Analysis. In 1990, Dr. Soummakie received a DAAD scholarship to study at Mannheim University in Germany. She has also served as the vice chair of the Business Administration Department at Antalya Bilim University and currently holds the position of Erasmus Coordinator for the Business Administrative department. Dr. Soummakie is fluent in English

Kristina Šorić, PhD, is a professor at RIT Croatia, where she teaches Operations Management, College Algebra, and Applied Calculus. She obtained her bachelor's degree in Mathematics and Computer Science from the Faculty of Natural Sciences in Zagreb, her master's degree from the Faculty of Economics in Zagreb; and her PhD in Applied Mathematics from the Department of Pure and Applied Mathematics, University of Padua, Italy. Her main scientific interests lie in the fields of operations research, optimization, combinatorial optimization, heuristics, and metaheuristics, particularly as applied to production scheduling, supply chain management, and operations management. She is a member of the Croatian Operational Research Society (serving as president from 2000 to 2004) and the Croatian Mathematical Society. She has participated in numerous international and domestic conferences, and spent sabbaticals at institutions such as the University of Udine (Italy), the Departamento de Engenharia e Gestão at Instituto Superior Técnico (Lisbon, Portugal), and the Information and Operations Management Department at the Marshall School of Business (Los Angeles, USA), among others. She has published numerous scientific papers, including in journals indexed in relevant databases, such as the European Journal of Operational Research. Kristina has collaborated with companies including Konzum d.d., Bambi d.d., Vivera d.o.o., Podravka d.d., SDA Croatia d.o.o., Atlantic Trade d.o.o., and Tokić d.o.o. She is the founder of www.luyouma.com, a portal dedicated to the education, popularization, and implementation of supply chain management. She holds a Lean Six Sigma Green Belt certificate and is a certified trainer for The Fresh Connection simulation.

© IEOM Society International