ICBAP 20 25

Machine Learning & AI in Business

International Conference on Business Analytics in Practice

August 24-27, 2025
University of Piraeus, Greece

Book of Abstracts

Organizers:

ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΕΙΡΑΙΩΣ
UNIVERSITY OF PIRAEUS

CENTRE FOR BUSINESS ANALYTICS IN PRACTICE
UNIVERSITY OF SURREY

web page: https://academyba.com/ICBAP2025

email: icbap2025@unipi.gr

1

Conference Committees

Conference Organizers

Ali Emrouznejad, Professor and Director, Centre for Business Analytics in Practice, Surrey Business School, University of Surrey, UK

Sotirios Bersimis, Professor, University of Piraeus, Greece

Dimitrios A. Georgakellos, Professor and Chair, Department of Business Administration, Director of the Executive MBA Post-Graduate Program, University of Piraeus, Greece

Petros Maravelakis, Professor, University of Piraeus, Greece

Athanasios Rakitzis, Associate Professor, University of Piraeus, Greece

Andreas Fousteris, Assistant Professor, University of Piraeus, Greece

Ioannis Katsanakis, Assistant Professor, University of Piraeus, Greece

International Advisory Board / Confirmed Invited Speakers / Panelists (in alphabetic order)

Apostolos Burnetas, Professor of Mathematics, Department of Mathematics, National and Kapodistrian University of Athens, Greece

Constantin Zopounidis, Professor of Operational research School of Production Engineering and Management, Technical University of Crete, Greece

Demosthenes Panagiotakos, Professor in Biostatistics, Research Methods and Epidemiology, Harokopio University in Athens, Greece

Dimitra Lingri, Hellenic Organization for Health Care Services Provision, Greece

Gerhard-Wilhelm (Willi) Weber, Professor Dr. at Poznań University of Technology, Poland

James Cochran, Mike and Kathy Mouron Research Chair and Professor of Statistics at the University of Alabama, USA

Janny Leung, Professor, State Key Laboratory of Internet of Things for Smart City, Faculty of Business Administration, The University of Macau, China

Kannan Govindan, Professor and Director – UoA's – Center for Sustainable Operations and Resilient Supply Chain at ISER and ABS, University of Adelaide, Australia

Kostas Nikolopoulos, Professor and Chair in Business Information Systems & Analytics, Durham University, UK

Madjid Tavana, Professor and Distinguished Chair of Business Analytics, La Salle University, Philadelphia, Pennsylvania, United States

Markos V. Koutras, Professor of Statistics and Applied Probability, Department of Statistics and Insurance Science, University of Piraeus, Greece

Nikolaos F. Matsatsinis, Professor of Information & Intelligent Decision Systems, Technical University of Crete, Greece

Pantelis Bagos, Professor of Bioinformatics and Biostatistics, Department of Computer Science and Biomedical Informatics, University of Thessaly, Greece

Vincent Charles, Queen's Business School, Queen's University Belfast, Belfast BT9 5EE, UK

Confirmed members of Scientific Committee

Alexandropoulou, Alexandra (Greece)

Amirteimoori, Alireza (Turkey)

Anouze, AbdelLatef (Qatar)

Arabmaldar, Aliasghar (UK)

Buchanan, Bonnie (UK)

Charles, Vincent (UK)

Chowdhury, Soumyadeb (France)

Cvetkoska, Violeta (North Macedonia)

Dengiz, Berna (Türkiye)

Ebrahimi, Pejman (Liechtenstein)

Economou, Polychronis (Greece)

Ertek, Gurdal (UAE)

Eskandari, Hamidreza (UK)

Essien, Aniekan (UK)

Fakhimi, Masoud (UK)

Fousteris, Andreas (Greece)

Fu, Colin (UK)

Gandomi, Amir (Australia)

Georgellis, Yannis (UK)

Georgiou, Andreas (Greece)

González Ramírez , Rosa G. (Chile)

Hill, Andrew (UK)

Hong, Liang (USA)

Ioannou, Athina (UK)

Jain, Sarika (India)

Karamitsos, Ioannis (United Arab Emirates (UAE))

Koronakos, Gregory (Greece)

Kremantzis, Marios (UK)

Kumar, Sravan (Qatar)

Kweh, Qian Long (UAE)

Mahmoudi, Reza (Canada)

Michali, Maria (UK)

Omrani, Hashem (Canada)

Ouenniche, Jamal (UK)

Papaioannou, Grammatoula (UK)

Pasiouras, Fotios (France)

Petridis, Konstantinos (Greece)

Peykani, Pejman (Iran)

Podinovski, Victor (UK)

Radwan, Neyara (UAE)

Rahimi, Iman (Australia)

Ramanathan, Ramakrishnan (UAE)

Ravanos, Panagiotis (Italy)

Rostami-Tabar, Bahman (UK)

Saridakis, George (UK)

Shabnam, Shabnam (India)

Short, Michael (UK)

Tasiou, Menelaos (UK)

Tavalaei, Mahdi (UK)

Toloo, Mehdi (UK)

Turner, Chris (UK)

Valiyattoor, Vipin (India)

Yun, JinHyo Joseph (South Korea)

Zarraga, Ane Elixabete Ripoll (Spain)

Zervopoulos, Panagiotis (UAE)

Zhou, Xun (UK)

(regulatory quality, digital infrastructure quality) influence strategic alignment. Composite prioritization scores, based on two expert focus groups (n = 24), serve as outputs, enabling a comparative efficiency analysis. Findings indicate that Ireland, the UK, and Slovenia demonstrate the highest efficiency in strategic prioritization, while other regions show varying degrees of inefficiency. Benchmarking and slack analysis provide insights into prioritization gaps and highlight opportunities for improving strategic decision-making in HEIs. The results of this study are particularly relevant to higher education leaders, policymakers, and researchers in operational and strategic management, offering data-driven insights to refine governance and optimize institutional performance. Furthermore, the research contributes to the analytics field by showcasing DEA's applicability in evaluating and improving strategic efficiency in complex, multi-context environments.

ICBAP-015 **The Dynamics of Knowledge Growth in Business Intelligence and Analytics: A Bibliometric Investigation**

Violeta Cvetkoska (Ss. Cyril and Methodius University in Skopje, Faculty of Economics – Skopje)*; Bojan Kitanovikj (Ss. Cyril and Methodius University in Skopje, Faculty of Economics - Skopje); Tina Nartnik (University of Ljubljana, School of Economics and Business); Jurij Jaklič (University of Ljubljana, School of Economics and Business); Gordana Savić (University of Belgrade, Faculty of Organizational Sciences)

Business Intelligence and Analytics (BI&A) has emerged over the last thirty years as a vital domain for driving organizational performance, digital transformation, and competitive advantage. As the field continues to expand rapidly, especially with the rise of AI-augmented analytics, understanding the structure and direction of existing research becomes critical. Without a clear map of intellectual progress and thematic shifts, both academic and practical efforts risk becoming disconnected and misaligned.

This study provides a systematic bibliometric investigation of the evolution of knowledge within Business Intelligence and Analytics. The motivation behind this analysis is to bring clarity to a complex and growing body of literature and to identify strategic pathways that can inform future research, innovation, and practice. By uncovering the foundations, trends, and turning points in the field, we support a more informed and impactful development of analytics strategies across sectors.

We examine a dataset of 2,361 peer-reviewed articles indexed in Scopus, applying a combination of citation network analysis, bibliographic coupling, co-authorship exploration, and keyword co-occurrence mapping. Following the

PRISMA guidelines and employing advanced text mining, we extract key thematic clusters and trace the emergence of influential research streams.

The results reveal a strong progression from early technical focus to more integrated, strategic, and domain-specific applications. This transition highlights the importance of cross-disciplinary collaboration and the alignment of analytics with real-world business needs. By capturing the dynamic evolution of BI and Analytics, this study offers a robust foundation for scholars, industry leaders, and policymakers to align academic inquiry with technological advancement and organizational priorities.

ICBAP-016 **Predicting Demand for New Products Using Polytope Volume and Benchmarking**

Mohsen Afsharian (Leibniz FH, University of Applied Sciences)*; Peter Bogetoft (Copenhagen Business School)

Predicting demand for new product entries is crucial for reducing product launch failures, optimizing inventory levels, and enhancing strategic planning in supply chain and production management. To address this, we propose two alternative analytics approaches: the volume-based approach and the benchmarking-based approach. The former, serving as the theoretical backbone of both methods, constructs weight sets that define the range of attribute weights under which an alternative is preferred over others. By computing the volumes of these sets – a process involving the Double Description Method and the Quickhull algorithm – we quantify potential demand shifts resulting from new product introductions. The latter approach, designed for greater computational performance, employs Data Envelopment Analysis to evaluate the efficiency of existing products. Additionally, we develop super-efficiency programs to extend the analysis by measuring the extent to which a product alternative surpasses the efficiency frontier. These methods contribute to the field of business analytics by offering data-driven insights into how new product introductions reshape the demand landscape. Graphical examples and an empirical illustration highlight the practical applicability of both approaches and their consistency in demand prediction.