International Conference on Data Envelopment Analysis
(November 18-21, 2024)
DEA2024 – PROGRAMME

Monday 18th November, 2024 (Pre Conference Workshop) 3rd Floor

Indian Standard Time (IST)	Activity	Venue
10:00 AM – 11:30 AM	Registration	Reception
11:30 AM - 01:00 PM	Workshop by Prof. Subhash Ray, Title: DEA for Measurement of Capacity Utilization	C18
01:00 PM - 02:00 PM	Lunch	Mess
02:00 PM - 03:30 PM	Workshop by Prof. Victor Podinovski, Title: Enhancing DEA models by production trade-offs	C18
03:30 PM - 04:00 PM	Tea Break	
04:00 PM - 05:30 PM	Workshop by Prof. Ali Emrouznejad: Title: AI DEA: Combining Data Envelopment Analysis with Machine Learning Techniques	C18

Tuesday 19th November, 2024 (Conference) 3rd Floor

Indian Standard Time (IST)	Activity	Venue
08:30 AM – 09:30 AM	Registration	Reception
09:30 AM - 10:15 AM	Inaugural Session	Seminar Hall
10:15 AM - 11:00 AM	Plenary Session 1	C18
11:00 AM - 11:30 AM	Tea Break	
11:30 AM - 12:30 PM	Parallel Sessions (Paper Presentation)	C16, C17, C18
12:30 PM - 01:30 PM	Lunch	Mess
01:30 PM - 03:00 PM	Industry Session	C18 (online)
01:30 PM - 03:00 PM	Parallel Sessions (Paper Presentation)	C15 (Online), C16
03:00 AM - 03:30 AM	Tea Break	
03:30 PM - 05:00 PM	Industry Session - Continue	C18 (online)
03:30 PM - 05:00 PM	Parallel Sessions (Paper Presentation)	C15 (Online), C16 (Online), C17
07:00 PM onwards	Gala Dinner	Le Seasons Park, Greater Noida

Wednesday 20th November, 2024 (Conference) 3rd Floor

Indian Standard Time (IST)	Activity	Venue
08:30 AM – 09:30 AM	Registration	Reception
09:30 AM - 11:00 AM	Parallel Sessions (Paper Presentation)	C15 (online), C16, C17
11:00 AM - 11:30 PM	Tea Break	
11:30 AM - 01:00 PM	Plenary Session 2&3	C18
01:00 PM - 02:00 PM	Lunch	Mess
02:00 PM - 03:30 PM	Parallel Sessions (Paper Presentation)	C15 (online), C16, C17,C18
03:30 PM – 03:45 PM	Tea Break	
03:45 PM – 5:15PM	Parallel Sessions (Paper Presentation)	C16, C17, C18
05:15PM – 5:45 PM	Closing Session	C15 (offline + online)

Tuesday 19 November 2024: 9:30 AM - 10:15 AM (IST)
Opening Session (Seminar Hall - 3rd Floor)

8:30 - 09:30	Registration at the Reception
9:30 - 10:15	Opening (Inaugural) session

Tuesday 19 November 2024: 10:15 AM - 11:00 AM (IST)
Plenary Session 1 (C-18 - 3rd Floor)

DEA2024 – P1	**The Use of DEA in Economic Regulation – Sample Cases from Europe** Professor Emmanuel Thanassoulis, Aston University, UK

T1-1 (Tuesday 19 November 2024: 11:30 AM - 12:30 PM) IST
DEA Modelling and Algorithm (C-16 - 3rd Floor)

DEA2024-061	**An Optimal Criteria Selection in Efficiency Assessment Through Integration of DEA with Rough Set Theory** Ishu Dalal (Birla Institute of Technology and Science Pilani)*; Shivi Agarwal (Birla Institute of Technology and Science, Pilani); Trilok Mathur (Birla Institute of Technology and Science, Pilani)
DEA2024-106	**Evaluating Performance Efficiency in the Malaysian Telecommunications Industry: A Data Envelopment Analysis Approach** Arumugam G Sithamparam (Asia Pacific University)*; Senthil Kumar Thiagarajan (Asia Pacific University)
DEA2024-104	**Chance-Constrained Data Envelopment Analysis and Its Duality** Mehdi Toloo (Surrey Business School)*; Hajar Farnoudkia (Baskent University)

T1-2 (Tuesday 19 November 2024: 11:30 AM - 12:30 PM) IST
DEA Modelling and Algorithm (C-17 - 3rd Floor)

DEA2024-012	**The impact of technological change on the marginal abatement cost and the equilibrium permit price: The slope and the level effects** Sushama Murty (Jawaharlal Nehru University)*
DEA2024-051	**Fuzzy DEA Model with Exogenously Fixed Variables for Ranking of Renewable Energy Sources** Jyoti Luhaniwal (BITS Pilani, Pilani Campus)*; Shivi Agarwal (Birla Institute of Technology and Science, Pilani); Trilok Mathur (Birla Institute of Technology and Science, Pilani)

DEA2024-069	**Analysis of technical efficiency of major Indian ports using Markov Chain Montecarlo based Stochastic Frontier Analysis and Malmquist Index** Jayanta Kumar Das (Indian Institute of Social Welfare and Business Management); Deepankar Sinha (Indian Institute of Foreign Trade)*; Sujit Mukherjee (Maulana Abul Kalam Azad University of Technology)

T1-3 (Tuesday 19 November 2024: 11:30 AM - 12:30 PM) IST

DEA and Machine Learning / AI / big data (C-18 - 3rd Floor)

DEA2024-044	**Forecasting cost efficiency of banks in India with integrated DDF-based network DEA and SVR approach** Nishtha Gupta (Thapar Institute of Engineering & Technology, Patiala, Punjab)*; Jolly Puri (Thapar Institute of Engineering & Technology, Patiala, Punjab); Gautam Setia (Thapar Institute of Engineering & Technology, Patiala, Punjab)
DEA2024-091	**Performance Prediction: An integration of Machine Learning and DEA** Ardhana M Prabhash (IISER Bhopal); Vipin Valiyattoor (Indian Institute of Science Education and Research Bhopal)*
DEA2024-065	**Measuring effectiveness of Digital Technology Integration for Business Sustainability** Harpreet Kaur (Indian Institute of Management Amritsar)*

Tuesday 19 November 2024: 01:30 PM - 05:00 PM (IST)

Industry Session - Regulation Session (Online) (C-18- 3rd Floor)

Date: November 19, 2024,
Time: 9:00 UK, 10:00 Brussels, 13:30 India (Tea Break: 3:00 PM – 3:30 PM IST)

Chair: **Dr Srini Parthasarathy**, Oxera Consulting LLP, UK
Moderator: **Prof Emmanuel Thanassoulis**, Aston University, UK

Speakers:
- **Emil Heesche,** The Danish Water Regulatory Authority, Danish Competition and Consumer Authority – A REGULATORY PERSPECTIVE FOR ROBUST BENCHMARKING OF UTILITIES

- **Tore Langset**, Norwegian Water and Energy Directorate - USING BENCHMARKING IN THE ECONOMIC REGULATION OF THE ELECTRICITY DISTRIBUTION SYSTEM OPERATORS (DSOs) IN NORWAY

- **Daniel Mitchell**, Ofwat England & Wales water regulator - SETTING WATER AND WASTEWATER EFFICIENT EXPENDITURE ALLOWANCES IN THE 2024 PRICE REVIEW

- **Vitor Marques,** ERSE Portuguese energy regulator - NEW CHALLENGES FOR INCENTIVE REGULATION

- **Gert Brunekreeft,** Constructor University Bremen - Improving regulatory incentives for electricity grid reinforcement

T2-1 (Tuesday 19 November 2024: 01:30 PM - 03:00 PM) IST

ONLINE PRESENTATION (C-15 - 3rd Floor)

DEA2024-047	**Efficiency of Veterinary Service delivery in Odisha: A study in two ecosystems using DEA** Ganesha H S (KIIT University)*; Rabi N SUBUDHI (KIIT University)
DEA2024-038	**A Forest-Based Resampling Approach for Estimating Statistical Production Frontier and Confidence Intervals of Efficiencies** Yu Zhao (Tokyo university of science)*
DEA2024-114	**Opening the Black-box of Input-output Weight Space for Performance Evaluation and Improvement** Weiyan Qiu (Hefei University of Technology)*; Xiyang Lei (Hefei University of Technology)
DEA2024-023	**Efficiency Analysis of Indian Pharmaceutical MSMEs: A Post-COVID Era** Varun Mahajan (IIM Trichy)*

T2-2 (Tuesday 19 November 2024: 01:30 PM - 03:00 PM) IST

DEA and econometric methods in financial services (C-16 - 3rd Floor)

DEA2024-081	**Risk-adjusted profit efficiency of Indian banks: Does Income Diversification Matter?** Mehak Gupta (South Asian University); Preksha Jain (South Asian University); Sunil Kumar (South Asian University)*
DEA2024-088	**Demystifying the trade-off debate in financial sustainability and social outreach and ranking of Indian MFIs: A bootstrap DEA framework** Asif Khan (IMT Nagpur)*
DEA2024-108	**Technical, Pure Technical and Scale Efficiency of Primary Agriculture Cooperative Credit Societies in Tamil Nadu** M RAMAN MURUGESAN (Natesan Institute of Cooperative Management)*; Suresh G (Natesan Institute of Cooperative Management); Pandian R (Natesan Institute of Cooperative Management)
DEA2024-025	**Efficiency of Indian Life Insurance Companies-A Cluster Based Approach** Ram P Sinha (Government College of Engineering and Leather Technology)*; Alireza Amirteimoori (Istinye University)

T3-1 (Tuesday 19 November 2024: 03:30 PM - 05:00 PM) IST

ONLINE PRESENTATION (C-15 - 3rd Floor)

DEA2024-092	**Application of data envelopment analysis in bank asset and liability management** Jacob Muvingi (University of Kurdistan Hewler)*
DEA2024-123	**On the Inverse Transformation of Undesirable Outputs in DEA: An Application to the Efficiency of Raw Material Flows** Ali Emrouznejad (Surrey Business School); Maria Michali (University of Bristol)*; Gholam R. Amin (University of New Brunswick)
DEA2024-033	**The Effect of Public-Private Partnership on the Productivity in Shrinking Public Service: A Matched Sample Approach** Takayoshi Nakaoka (Doshisha University)*
DEA2024-093	**Research on efficiency of medical and health resource allocation in China based on DEA** Tianyi Liu (Tongji Medical College of Huazhong University of Science and Technology); Xue Bai (School of Nursing, Tongji Medical College of Huazhong University of Science and Technology)*

T3-2 (Tuesday 19 November 2024: 03:30 PM - 05:00 PM) IST

ONLINE PRESENTATION (C-15 - 3rd Floor)

DEA2024-115	**FRANCISCO 2.0: Increasing the usability and appending Multiplicative DEA models for Internet services forecasting over time** Francisco Daladier Marques Júnior (IFPB)*; Franks Patricio Maciel Filho (IFPB)
DEA2024-122	**Efficiency of European banks in the context of recent developments** Iveta Paleckova (Silesian University in Opava, School of Business Administration in Karvina)*
DEA2024-082	**Target setting for airlines: A DEA bargaining approach with network structure** Ming-Miin Yu (National Taiwan Ocean University)*
DEA2024-071	**Does Private Tuition affects Efficiency of Government and Government aided Schools? An Evidence of Higher Secondary Level of Education in Kolkata** Arpita Ghose (Jadavpur University)*; Sangita Choudhury (Maulana Abul Kalam Azad University of Technology, West Bengal)

T3-3 (Tuesday 19 November 2024: 03:30 PM - 05:00 PM) IST

Fuzzy DEA (FDEA) & DEA and econometric method in public sector (C-15 - 3rd Floor)

DEA2024-031	**Performance Mapping of Startups in India using Data Envelopment Analysis** Pratigya Kwatra (IILM University)*; Gokulananda Patel (Birla institute of Management technology)
DEA2024-037	**Interval-Valued Pythagorean Fuzzy Super Efficiency Range Directional Model: A Case Study on Urban Air Pollutants in India** Akash Jain (Netaji Subash University of technology, Dwarka, New Delhi,India)*; Pooja Bansal (Department of Mathematics, Netaji Subhas University of Technology, Dwarka, Delhi)
DEA2024-072	**Examining Maintenance Efficiency and its Determinants in Indian Public Bus Companies: A DEA Approach** Shivam Kushwaha (Institute of Rural Management Anand (IRMA))*; Anand Venkatesh (Institute of Rural Management Anand (IRMA))
DEA2024-036	**DEA Approach to Linking Fintech and Commercial Bank Efficiency in India** Joyeeta Deb (Assam University, Silchar)*; Anirban Dutta (Assam University)

W1-1 (Wednesday 20 November 2024: 09:30 AM - 11:00 AM) IST

ONLINE PRESENTATION (C-15 - 3rd Floor)

DEA2024-121	**Environmental Sustainability Performance of US Airlines: Implications of Financial Performance and Technical Efficiency** Sepideh Kaffash (Suffolk University)*; Emel Aktas (Cranfield University); Fahimeh Chomachaei (UMass Boston)
DEA2024-118	**Selection of quality service criteria of Brazilian airports: A Selecting Slack-Based Measure approach under an Onion framework** Paulo Nocera Alves Junior (Universidad Católica del Norte (UCN), Escuela de Ingeniería de Coquimbo (EIC)); Isotilia Costa Melo (ICN Business School, CEREFIGE - Université de Lorraine) *; Tatiana Kimura Kodama (São Carlos School of Engineering (EESC), University of São Paulo (USP)); Jessica Suarez Campoli (São Carlos School of Engineering (EESC), University of São Paulo (USP)); Marcelo Seido Nagano (University of São Paulo)
DEA2024-119	**Progress of G20 nations on Sustainable Development Goal 6: integrating circular economy strategies for water sustainability** Jessica Suarez Campoli (São Carlos School of Engineering (EESC), University of São Paulo (USP)); Tatiana Kimura Kodama (São Carlos School of Engineering (EESC), USP)); Paulo Nocera Alves Junior (Universidad Católica del Norte (UCN)*, Escuela de Ingeniería de Coquimbo (EIC)); Marcelo Seido Nagano (University of São Paulo); Heloísa Burnquist (Luiz de Queiroz College of Agriculture (ESALQ), USP))

	Advancing terrestrial sustainability: A DEA-SBM analysis of G20 nations' progress on SDG 15 through circular economy practices
DEA2024-120	Jessica Suarez Campoli (São Carlos School of Engineering (EESC)*, University of São Paulo (USP)); Tatiana Kimura Kodama (São Carlos School of Engineering (EESC), USP)); Paulo Nocera Alves Junior (Universidad Católica del Norte (UCN), Escuela de Ingeniería de Coquimbo (EIC)); Marcelo Seido Nagano (USP); Heloisa Burnquist (Luiz de Queiroz College of Agriculture (ESALQ) USP))

W1-2 (Wednesday 20 November 2024: 09:30 AM - 11:00 AM) IST

DEA in health and hospital efficiency (C-15 - 3rd Floor)

DEA2024-041	**Evaluating Efficiency in Indian Pharmaceutical Firms: A DEA Based Analysis** Jyoti Sharma (Shri Mata Vaishno Devi University, Katra); Inder Kumar (Shri Mata Vaishno Devi University, Katra)*
DEA2024-046	**An Investigation and Evaluation of Efficiency in Primary and Secondary Healthcare system of India using Data Envelopment analysis** Qaiser Farooq F Dar (ICMR-National Institute of Research in Tribal Health)*; Ashiq Hussain Bhat (ICMR-RMRIMS, Patna); Gulbadin Farooq Dar (Department of Statistics, St Joseph's University, Bangalore. India.)
DEA2024-053	**Evaluating e-Governance Efficiency: A Comparative Analysis of Developed, Developing, and Underdeveloped Nations** Gourav Kumar Panda (Sambalpur University)*; debendra kumar mahalik (sambalpur university)
DEA2024-017	**Health spending efficiency evaluation conditional on corruption control: A country level analysis** Don U Galagedera (Monash University)*; Joan Tan (Monash University); Param Silvapulle (Monash University)

W1-3 (Wednesday 20 November 2024: 09:30 AM - 11:00 AM) IST

DEA in transportation (C-15 - 3rd Floor)

DEA2024-020	**Efficiency Comparison of Container Terminal Ports, Study of South-West Asia** Amna Al Raisi (German University of Technology); Mehdi A. Kamran (GErman University of Technology in Oman)*; Reza Babazadeh (Urmia University)
DEA2024-032	**Extended Assignment Problem with Multiple Attributes** Shantnu Verma (BITS Pilani, Pilani Campus)*; Shivi Agarwal (Birla Institute of Technology and Science, Pilani); Trilok Mathur (Birla Institute of Technology and Science, Pilani)

DEA2024-058	**Sustainable Efficiency in the main Ports of the world. An Analysis of Technological Frontiers** Odette Delfin-Ortega (Universidad Michoacana de San Nicolás de Hidalgo)*; César Navarro-Chávez (Universidad Michoacana de San Nicolás de Hidalgo)
DEA2024-010	**Energy efficiency evaluation based on DEA: case study of Adriatic container ports** Mozhgan Mansouri Kaleibar (University of Ljubljana, Faculty of Maritime Studies and Transport); Evelin Krmac (University of Ljubljana, Faculty of Maritime Studies and Transport)*

Wednesday 20 November 2024: 11:30 AM - 01:00 PM (IST)
Plenary Session 2 & 3 (C-18 - 3rd Floor)

DEA2024 – P2	**Opportunity Cost and Employment Effect of Emission Reduction: An Inter-Industry Comparison of Targeted Pollution Reduction** Professor Subhash C Ray, University of Connecticut, USA
DEA2024 – P3	**Data envelopment analysis with volume and ratio inputs and outputs** Professor Victor Podinovski, Loughborough University, UK

W2-1 (Wednesday 20 November 2024: 02:00 PM - 03:30 PM) IST
ONLINE PRESENTATION (C-15 - 3rd Floor)

DEA2024-014	**Efficiency evaluation of the Indian Pension Fund Managers** Shoaib Alam Siddiqui (SVKM'S Narsee Monjee Institute of Management Studies, Deemed to be University, Indore)*
DEA2024-113	**A Dual Incentive Subsidy Allocation Method Based on Stackelberg Game DEA** Wang Vihong (HeFei university of technology)*
DEA2024-086	**Evaluating Energy Productivity and Greenhouse Gas Emissions: An International Comparison** Hafsa H Pial (Queensland University of Technology)*
DEA2024-125	**Cost and allocative efficiency of acute public hospitals in Ireland** Niall Devitt (Kemmy Business School, University of Limerick)*; Declan Dineen (Kemmy Business School, University of Limerick); Marta Zieba (Kemmy Business School, University of Limerick)

W2-2 (Wednesday 20 November 2024: 02:00 PM - 03:30 PM) IST

DEA and econometric methods in financial services (C-16 - 3rd Floor)

DEA2024-029	**Dynamics of Intellectual Capital Efficiency in Indian Automobile Firms Amidst Pandemic Crisis: A Comparative Study** Supran Kumar Sharma (Shri Mata Vaishno Devi University)*; Neha Chandra (Shri Mata Vaishno Devi University); Rohit Kumar Singh (Constituent Government Degree College, Hasanpur)
DEA2024-042	**Efficiency Evaluation and Performance Determinants: An Analysis of Indian Commercial Banks Using DEA and Tobit Regression** Jyoti Gill (Shri Vishwakarma Skill University)*; Dr. Dalip Raina (Shri Vishwakarma Skill University)
DEA2024-073	**Two Stage Free Disposable Hull Stochastic Data Envelopment Analysis Model** Aarti Yadav (Indian Institute of Technology(IIT) Delhi)*; Aparna Mehra (Indian Institute of Technology(IIT) Delhi)
DEA2024-043	**Evaluating Investment Efficiency in Coal Mining Company: A Case Study of Mahanadi Coal Field Ltd. Using DEA** Akankika Tripathy (Sambalpur University)*; debendra kumar mahalik (sambalpur university)

W2-3 (Wednesday 20 November 2024: 02:00 PM - 03:30 PM) IST

DEA and econometric methods in education (C-17 - 3rd Floor)

DEA2024-028	**Assessing Indian universities efficiency in placement and post-graduate pursuit using AHP and DDF based super-efficiency DEA model** Shivani Kalyan (Netaji Subhas University Of Technology)*; Pooja Bansal (Department of Mathematics, Netaji Subhas University of Technology, Dwarka, Delhi)
DEA2024-030	**Managerial Ability Assessment of Turkish State Universities with DEA** Ayhan GÖLCÜKCÜ (Beykent University)*
DEA2024-103	**Measuring corporate sustainability with data envelopment analysis: A multi-technique bibliometric review and future research agenda** Gokulananda Patel (Birla institute of Management technology)*; Violeta Cvetkoska (Ss. Cyril and Methodius University); Bojan Kitanovikj (Ss. Cyril and Methodius University in Skopje, Faculty of Economics - Skopje)
DEA2024-024	**Benchmarking in education: Data Envelopment Analysis approaches for solving bi-objective problems** Dovile Stumbriene (Vilnius University)*; José L. Ruiz (Centro de Investigación Operativa, Universidad Miguel Hernández); Inmaculada Sirvent (Centro de Investigación Operativa, Universidad Miguel Hernández)

W2-4 (Wednesday 20 November 2024: 02:00 PM - 03:30 PM) IST	
DEA modelling and algorithm, Nonconvex DEA, Pure Inputs of Outputs DEA Models, Malmquist productivity index (C-18 - 3rd Floor)	
DEA2024-070	**Analyzing Marketing Channel Efficiency for Tribal Vegetable Growers of Sundargarh District** Sumant Kerketta (Sambalpur University)*; Gourav Kumar Panda (Sambalpur University); debendra kumar mahalik (sambalpur university)
DEA2024-096	**Growth and Sustainability: Analyzing Green Total Factor Productivity in India's Pharmaceutical Industry** Soma Bharti (Indian Institute of Technology,Roorkee)*; Pratap C Mohanty (Indian Institute of Technology,Roorkee)
DEA2024-039	**Slack-based Free Disposal Hull Models with Interval Data** Anjali Naik (Indian Institute of technology Delhi)*; Aparna Mehra (Indian Institute of technology Delhi); Kristiaan H.J. Kerstens (IESEG School of management)
DEA2024-015	**DEA Enabled Markovian Models for Steering the Evolution of Population Structures** Andreas C Georgiou (University of Macedonia); George Tsaples (University of Macedonia); Emmanuel Thanassoulis (Aston University) *; Konstantinos Kaparis (University of Macedonia)

W3-1 (Wednesday 20 November 2024: 03:45 PM - 05:15 PM) IST	
DEA and econometric methods in regulation (C-16 - 3rd Floor)	
DEA2024-080	**Central bank digital currency and multidimensional bank stability index: Does monetary policy play a moderating role? Evidence from BRICS** Garima Gupta (Indian Institute of Technology Roorkee)*; Rachita Gulati (Indian Institute of Technology Roorkee), Rishman Chahal (Indian Institute of Technology Roorkee)
DEA2024-055	**A frontier based approach for operational performance of thermal generating plants** Shambhavi Mishra (IIT, Kanpur)*; Anoop Singh (IIT, Kanpur); Sufia Sufia (IIT, Kanpur)
DEA2024-107	**Critical Evaluation of Indian Electricity Generation Utilities using Data Envelopment Analysis (DEA)** Ramaiah Veerlapati (Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology)*; Chandrasekar Perumal (Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology)
DEA2024-056	**Performance assessment of Indian electricity distribution utilities using reliability indices: A two-stage data envelopment analysis** Sufia (IIT, Kanpur)*; Anoop Singh (IIT, Kanpur); Shambhavi Mishra (IIT Kanpur)

W3-2 (Wednesday 20 November 2024: 03:45 PM - 05:15 PM) IST	
Network DEA and dynamic efficiency (C-17 - 3rd Floor)	
DEA2024-052	**Assessing the Cost-Effectiveness of Indian Banks: Evidence based on interval dynamic DEA** Rajinder Kaur (Department of Mathematics, Thapar Institute of Engineering and Technology, Patiala)*; Jolly Puri (Department of Mathematics, Thapar Institute of Engineering and Technology, Patiala)
DEA2024-095	**Efficiency Variations in Marketing Efforts of India's Pharmaceutical Industry: A Dynamic WDEA Approach** Kamal Sharma (Indian Institute of Technology Roorkee)*; Pratap Mohanty (Indian Institute of Technology Roorkee)
DEA2024-026	**Green efficiency of Firms in Power Industry considering the Relation among CO2 Emissions, Green Technology, and Green Investment** Donghoon Kang (Yonsei University)*; So Young Sohn (Yonsei University)
DEA2024-076	**DEA models for technologies with parallel processes** Grammatoula Papaioannou (Loughborough University); Victor Podinovski (Loughborough University)*

W3-3 (Wednesday 20 November 2024: 03:45 PM - 05:15 PM) IST	
DEA models with undesirable factors (C-18 - 3rd Floor)	
DEA2024-045	**Non-homogeneous DEA model handling undesirable data: An application for assessing performance of Life insurance companies** Pooja Bansal (Department of Mathematics, Netaji Subhas University of Technology, Dwarka, Delhi)*; Anchal Gulia (Netaji subhas university of technology Dwarka)
DEA2024-102	**Energy Use Efficiency and Just Transition: An Empirical Analysis of the Indian Power Sector using Data Envelopment Analysis** Sabuj Kumar Mandal (Indian Institute of Technology Madras)*; Tanurima Brahma (Indian Institute of Technology Madras)
DEA2024-019	**Formulating Environmental, Social, and Governance (ESG) Strategies for Assessing Municipal Waste Disposal Centers Using Data Envelopment Analysis: A Case Study in Mexico** Kia, Reza*; Gholian-Jouybari, Fatemeh ; Khazaei, Moein ; Farzipoor Saen, Reza ; Hajiaghaei-Keshteli, Mostafa ; Ramezani, Mohammad
DEA2024-016	**A data envelopment approach for reallocating green gas emissions in cap-and-trade context** Reza Farzipoor Saen (Sultan Qaboos University)*

All information is correct at the time of printing and is subject to change without notice.