2025 THE 6TH INTERNATIONAL CONFERENCE ON SUPPLY CHAIN MANAGEMENT

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2025

TOKYO, JAPAN

February 21-23, 2025

Hosei University [Ichigaya Campus]

Address: 2-17-1 Fujimi, Chiyoda-ku, Tokyo, 1028160, Japan
(日本东京都千代田区富士見2-17-1)

法政大学
HOSEI University

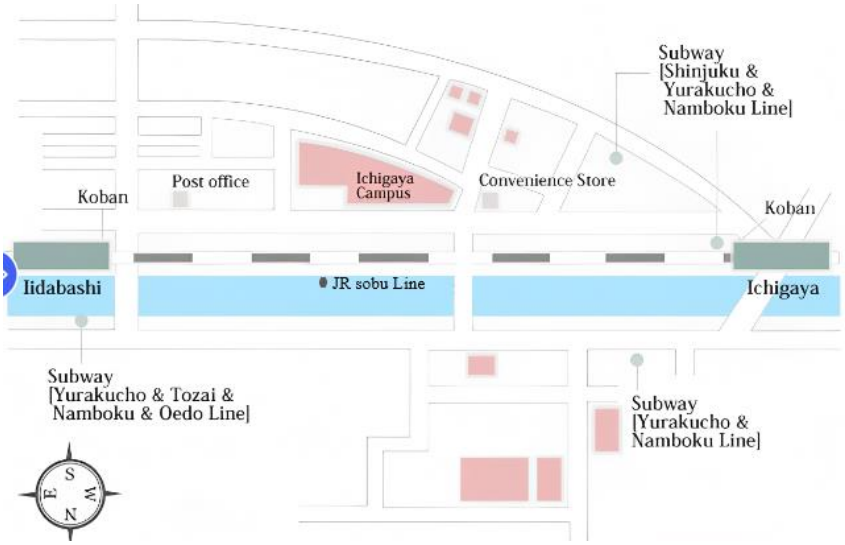
Contents

Conference Venue

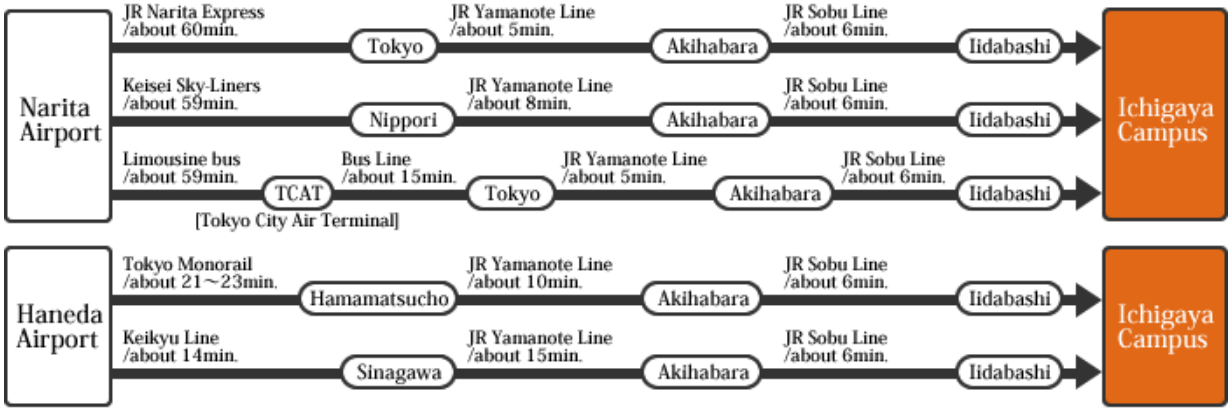
Hosei University, Japan [Ichigaya Campus]

Address: 2-17-1 Fujimi, Chiyoda-ku, Tokyo, 1028160, Japan
(日本东京都千代田区富士見 2-17-1)

Campus Location:



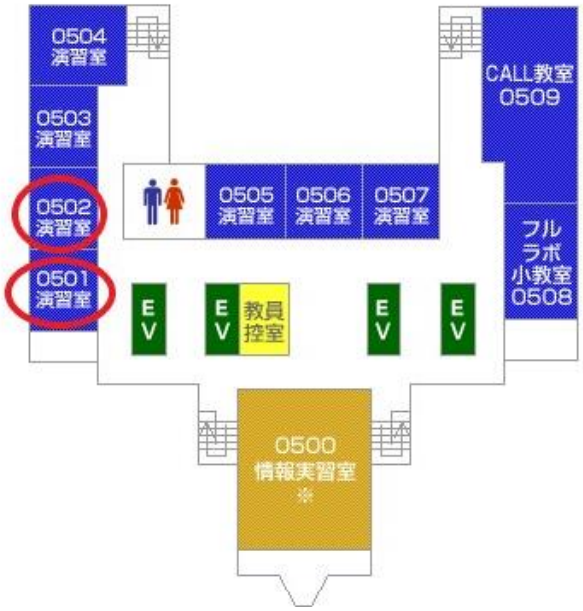
Means of Access:



Conference Venue

Conference Rooms: Boissonade Tower (BT)

February 21	BT18F-1805	Sign-in & Conference Kits Collection
February 22	BT25F-Conference Room 5	Keynote & Invited Speeches
	BT5F-0501	Session 1 & 3
	BT5F-0502	Session 2 & 4



Attendance Guideline

Time Zone

UTC+9

Schedule

- ❑ **February 21:** Sign-in and Conference Kits Collection ➔ 18F-1805
- ❑ **February 22:** Keynote & Invited Speeches & Oral Sessions ➔ 25F-Conference Room 5; 5F-0501, 0502
- ❑ **February 23:** One Free Day in Tokyo

Language

- Please make presentation and discuss in English.

Oral Presentation

- ➢ Keynote Speech: 45 mins (including Q&A).
- ➢ Invited Speech: 30 mins (including Q&A).
- ➢ Author Presentation: about 13 minutes for presentation and 2 minutes for Q&A.

- Please make sure your presentation is well timed. Please keep in mind that the program is full and that the speaker after you would like their allocated time available to them.
- Each speaker is required to meet her/his session chair in the corresponding session rooms 10 minutes before the session starts and copy the slide file (PPT or PDF) to the conference computer.
- Please note that each session room will be equipped with a LCD projector, screen, point device, microphone, and a laptop with general presentation software such as Microsoft PowerPoint and Adobe Reader. Please make sure that your files are compatible and readable with our operation system by using commonly used fronts and symbols. If you plan to use your own computer, please try the connection and make sure it works before your presentation.
- Videos: If your PowerPoint files contain video clips, please make sure that they are well formatted and connected to the main files.

Reminder

Please attend the conference in formal attire.

Safety Reminder: Secure Valuable Items at All Times.

We remind you to secure your personal belongings at all times.

The conference organizer will not be responsible for the loss or damage to any personal belongings.

Dinner Venue: Churrasco Restaurant ALEGRIA Kagurazaka

シュラスコ&ビアレストラン ALEGRIA Kagurazaka（アレグリア神楽坂）

日本〒162-0825 Tokyo, Shinjuku City, Kagurazaka, 4 Chome−3 Rakuzan, 4F

Online Meeting Room

Room A: 880 0161 7852 https://us02web.zoom.us/j/88001617852

Room B: 813 6077 8133 https://us02web.zoom.us/j/81360778133

Online Test on February 21, 2025

Time: 11:00-12:00 (UTC+9) **Zoom ID:** Room A: 880 0161 7852 https://us02web.zoom.us/j/88001617852

(Prof. Loon Ching TANG, Prof. Boo Ho Voon, M25-401A, 405, 446, 452)

Conference Committees

Conference Committee Chairs

Prof. TANG Loon Ching, National University of Singapore, Singapore
Prof. Ruixue Li, Hosei University, Japan

Conference Committee Co-chairs

Prof. Yanwen Dong, Fukushima University, Japan
Prof. Thomas Hanne, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland

Program Committee Chairs

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Assoc. Prof. Qi FU, University of Macau, Macau SAR

International Technical Program Committee Chairs

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Assoc. Prof. Allan N. Zhang, Singapore Institute of Manufacturing Technology, Singapore
Dr. Wee Meng Yeo, University of Glasgow, United Kingdom

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Assoc. Prof. Nguyen Van Hop, Ho Chi Minh City International University, Vietnam

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Assoc. Prof. MinChuan Huang, Guangdong Institute of Petroleum and Chemical Engineering, China
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Asst. Prof. Wafa' Hasan AlAlaween, University of Jordan, Jordan
Asst. Prof. Kyunghwan Choi, Korea National Defense University, Korea
Asst. Prof. Grace Lorraine Intal, Mapua University, Philippines
Dr. Wee Meng Yeo, University of Glasgow, United Kingdom
Dr. Anak Agung Ngurah Perwira Redi, Sampoerna University, Indonesia
Dr. Kholoud Alkayid, Melbourne Institute of Technology, Australia
Dr. Iris Ann Martinez, University of the Philippines Diliman, Philippines

Program Outline

Day 1 | February 21, 2025 | Friday | UTC+9	
Time	**Activity**
14:00-17:00	Venue: BT18F-1805 | Sign-in and Conference Kits Collection

Day 2 | February 22, 2025 | Saturday | UTC+9		
Time	**Activity**	
	Venue: BT25F - Conference Room 5 Host: Conference Co-Chair- Prof. Thomas Hanne, University of Applied Sciences and Arts Northwestern Switzerland, Switzerland	
9:00-9:05	 **Opening Remark** Conference Chair - Prof. Loon Ching TANG National University of Singapore, Singapore	zoom
9:05-9:10	 **Welcome Address** Conference Chair - Prof. Ruixue Li Hosei University, Japan	
9:10-9:55	 **Keynote Speech - Prof. Loon Ching TANG** National University of Singapore, Singapore ***Industrial & Systems Management: From Practice to Theory***	zoom
9:55-10:40	 **Keynote Speech - Prof. Hing Kai Chan** University of Nottingham Ningbo China, China ***Creating Value via Digital Rental Platform: Incentive Strategy for Sharing Reusable Transport Items***	
10:40-11:00	**Group Photo & Coffee Break**	
11:00-11:45	 **Keynote Speech - Prof. Yanwen Dong** Fukushima University, Japan ***Exploring the Impact of Employer Personality on the Adoption of Generative AI Technology in SCM***	
11:45-12:15	 **Invited Speech - Prof. Boo Ho Voon** Universiti Teknologi MARA Sarawak, Malaysia ***Building Inclusive Channels Management with Value Chain***	zoom
12:15-14:00	**Lunch Break**	
	BT5F - 0501	**BT5F - 0502**
14:00-15:30	**Session 1** Circular Economy Model and Safety Assessment in Sustainable Supply Chain	**Session 2** AI Based Supply Chain Collaborative Management
16:00-17:30	**Session 3** Supply Chain Optimization and Services Based on Composite Methods	**Session 4** Optimization and Collaborative Scheduling of Urban Multimodal Transport Logistics
18:00-20:00	**Dinner & Award Ceremony @ Churrasco & Beer Restaurant ALEGRIA Kagurazaka**	

Day 3 | February 23, 2025 | Sunday | UTC+9	
Time	**Activity**
	One Free Day in Tokyo

Conference Chair

Prof. Ruixue Li

Hosei University, Japan

Li Ruixue is a professor of the Department of Business Administration and former dean of the Graduate School of Business Administration of Hosei University in Japan. He has served as a visiting research fellow at St. Anthony's College of the University of Oxford in the UK, deputy director/director of the Innovation Management Research Institute of Hosei University, lecturer/associate professor at the University of Toyama, visiting research fellow at the Business School of the University of Missouri St.Louis, USA, visiting research fellow at Modern Logistics Research Center in Fudan University, and part-time analyst at Tokyo Logistics Research Institute. Appointed as a visiting professor at Southwest Jiaotong University and Shanghai University of International Business and Economics, he is also the vice president of the Japan Automobile Logistics Research Association and the Building Materials and Residential Equipment Logistics Research Association as well as the editorial board member of several academic journals. Specializing in logistics management, supply chain management, corporate strategy and others, he has published nearly 100 academic papers and eight monographs. Professor Li has won the Outstanding Research Paper Award of the 2nd Kitamura Award of the Japan Port Economics Association, the 1st prize of the 4th Wuhua Book Award of the China Society of Logistics, and the 7th Sumita Logistics Award of the Japan Transport Research Institute.

Research Interests

- Logistics systems in Japanese firms
- the logistics strategy and logistics system of Japanese multinationals's Chinese subsidiaries
- The development of Chinese logistics industry
- Logistics Cluster
- One Belt One Road Initiative

Conference Co-Chair

Prof. Thomas Hanne

University of Applied Sciences and Arts Northwestern Switzerland, Switzerland

Thomas Hanne received master's degrees in Economics and Computer Science, and a PhD in Economics. From 1999 to 2007 he worked at the Fraunhofer Institute for Industrial Mathematics (ITWM) as senior scientist. Since then he is Professor for Information Systems at the University of Applied Sciences and Arts Northwestern Switzerland and Head of the Competence Center Systems Engineering since 2012. Thomas Hanne is author of more than 140 journal articles, conference papers, and other publications and editor of several journals and special issues.

Research Interests

- Continuous and Combinatorial Optimization
- Evolutionary Algorithms and Metaheuristics
- Multiobjective Optimization and Decision Support
- Discrete-Event Simulation
- Applications in Logistics and Supply Chain Management

Keynote Speaker

Prof. Loon Ching TANG (Conference Chair)

National University of Singapore, Singapore

(Director of TDSI, NUS, Fellow of ISEAM)

- **Venue: BT25F - Conference Room 5**
- **Time: 9:10-9:55 (UTC+9)**
- **Zoom ID: 880 0161 7852 https://us02web.zoom.us/j/88001617852**

Speech Title: Industrial & Systems Management: From Practice to Theory

Biography: Dr Loon Ching TANG is currently professor of Department of Industrial Systems Engineering & Management at the National University of Singapore and Felow of Academy of Engineering, Singapore. He obtained his Ph.D degree from Cornell University in the field of Operations Research in 1992 and has published extensively in areas related to industrial engineering and operations research. He has been presented with a number of best paper awards including the IIE Transactions 2010 Best Application Paper Award and 2012 R.A. Evans/P.K. McElroy Award for the best paper at Annual RAMS. Prof Tang is the main author of the award-winning book: Six Sigma: Advanced Tools for Black Belts and Master Black Belts. Besides being active in the forefront of academic research, in the last 30 years, Prof Tang has served as a consultant for many organizations, such as the Changi Airport Group, Ministry of Home Affair, Singapore Power Grid, Republic of Singapore Air Force, Seagate, HP, Phillips, etc, on a wide range of projects aiming at improving organizational and operations efficiency; especially through better management of engineering assets. He is currently the Co-Editor-in-Chief of Quality & Reliability Engineering International, and Journal of Reliability Science and Engineering; editorial review board member of Journal of Quality Technology.

Synopsis: In this presentation, we shall present some of the actual industrial projects that I have been involved with over the past 30 years to illustrate the need to consider a few high-level concepts of operations (CONOPs); i.e. the key practical aspect of overall planning, from the systems design perspective, before any attempt to develop optimization techniques/theory for the existing systems. The approach demonstrates how to leverage on the latest technologies and to challenge the existing practice so as to achieve major system improvements. It highlights the need to integrate system engineering & management concepts and operations research methodologies in order to result in major breakthroughs. It also further reinforces the preferred research pathway that moves from practice to theory rather than “looking for the nail after arming with a hammer”.

Keynote Speaker

Prof. Hing Kai Chan
University of Nottingham Ningbo China, China

- **Venue: BT25F - Conference Room 5**
- **Time: 9:55-10:40 (UTC+9)**
- **Zoom ID: 880 0161 7852 https://us02web.zoom.us/j/88001617852**

Speech Title: Creating Value via Digital Rental Platform: Incentive Strategy for Sharing Reusable Transport Items

Biography: Professor Hing Kai Chan is a Professor of Operations Management at the Nottingham University Business School China, University of Nottingham Ningbo China. He received his BEng(Hons), MSc(Eng) (with distinction), and the PhD degree from the University of Hong Kong. He also earned a BSc degree from the London School of Economics and Political Science. He worked in the electronic manufacturing industry for over 10 years before joining the academia. Professor Chan has published over 250 academic articles and 9 monographs/edited volumes. His publications appear in Production and Operations Management, European Journal of Operational Research, various IEEE Transactions, Decision Support Systems, International Journal of Production Economics, International Journal of Production Research, among others. He has been the co-editor of Industrial Management & Data Systems since 2014 and is an Associate Editor of Transportation Research Part E: Logistics and Transportation Review since 2018.

Synopsis: Organisations across industries are increasingly exploring and exploiting the use of digital platforms for value creation. A business-to-business (B2B) digital rental platform enables companies to share resources with great flexibility, efficiently adapting to market changes, while simultaneously reducing costs and risks. Since rental resources are used at different times during customers' rental periods, they are usually idle in the customers' warehouse without contributing any added value. Thus, incentivising the business customers' sharing and optimising the platform placement decision is of vital importance. Aiming to foster B2B sharing, the study develops an optimisation decision framework for RTI placement decisions for the platform and financial incentives for business customers, with a combined approach including empirical and optimisation models. This study delves into a typical case of operations management on a platform specialising in the rental of reusable transport items (RTIs).

Keynote Speaker

Prof. Yanwen Dong (Conference Co-Chair)

Fukushima University, Japan

- **Venue: BT25F - Conference Room 5**
- **Time: 11:00-11:45 (UTC+9)**
- **Zoom ID: 880 0161 7852 https://us02web.zoom.us/j/88001617852**

Speech Title: Exploring the Impact of Employer Personality on the Adoption of Generative AI Technology in SCM

Biography: Yanwen Dong is a professor in the Cluster of Science and Technology at Fukushima University, Fukushima, Japan. He received his bachelor's degree in 1982 and master's degree in 1984 from the University of Science and Technology, Beijing, China. He also received his Ph.D. degree in 1996 from Osaka Prefecture University, Japan. He worked at the University of Science and Technology Beijing as a lecturer from 1984 to 1995 and at the Faculty of Economics, Fukushima University as an associate professor from 1997 to 2004. His current research interests include production management, supply chain management, management information system and data science. He is the president of Asian Association of Management Science and Applications (AAMSA) since 2025 and editorial board member of Asian Journal of Management Science and Applications (AJMSA) since 2014.

Synopsis: As Generative AI (GenAI) is increasingly applied to supply chain management (SCM), it can have a significant impact on an organization's productivity, innovation, and overall performance. Because employers' personalities play a significant role in how they perceive, adopt, and effectively use GenAI tools in their workflows, understanding employers' personality traits helps organizations tailor the implementation of GenAI to ensure effective adoption and minimize resistance. However, the relationship between the application of GenAI and employer personality is complex and multifaceted, with different studies yielding different results. After providing a tutorial on how to measure personality traits, this talk will provide a brief overview of the research on the relationship between the application of generative AI and employer personality. It will also highlight the importance of considering other human factors in the development and application of GenAI, including perceptions of the technology, trust and intentions to use, cognitive styles and interaction experiences, organizational support, the role of GenAI in society, etc.

Invited Speaker

Prof. Boo Ho Voon

Universiti Teknologi MARA Sarawak, Malaysia

- **Venue: BT25F - Conference Room 5**
- **Time: 11:45-12:15 (UTC+9)**
- **Zoom ID: 880 0161 7852 https://us02web.zoom.us/j/88001617852**

Speech Title: Building Inclusive Channels Management with Value Chain

Biography: Prof. Dr. Voon is a professor of marketing at Universiti Teknologi MARA Sarawak, Malaysia. He is an experienced researcher who has published many papers and a few books in service management and marketing, strategic value-chain, and educational administration research. His book chapter on ‘Confucian values for service excellence’ can provide strategic insights. He has years of experience in education and banking in Sarawak before joining the academia. He teaches various strategic marketing and research methodology courses as well as supervised researchers at bachelor degree and postgraduate levels. His innovations such as ServEx, BEHAVE, BLUE-SEA, eDioms (Chinese Marketing), Marketing Research MOOC and MyServEx system have won prestigious awards locally and internationally. MyServEx is commercialized. His consultancy projects on service management, customer experience and product development have helped the clients, and Sarawak government. His current research projects include socio-economic development service, rehabilitation service excellence, rural tourism, channels and supply chain management, and personal service attitudes.

Synopsis: Channels management is crucial for creating and sustaining competitive advantage of enterprises (profit oriented) and organizations (non-profit oriented), may they be in the manufacturing or service sectors. Nevertheless, many enterprises or organizations are relatively less comprehensive and objective in gauging and measuring their channels management practices for sustainability. This speech will address the various marketing channels and supply chain management issues with the value chain approach (including the relevant green practices) for sustainability. Performance measurement and monitoring will be stressed. The leaders, managers, and researchers will gain more insights on building inclusive channels management with value chain along with a measurement index for supply chain sustainability. Cases related to manufacturing (profit oriented), renewal energy, and community-based rehabilitation service (non-profit) will be shared to promote for better inclusivity in supply chain management for sustainable development and shared prosperity. The graphical frameworks of the value chains (i.e., manufacturing, renewal energy, rehabilitation service) as well as research-based measurement index and performance scorecard (i.e., RehabServE Index and RehabServE Scorecard) will be presented to benefit the audience.

Session 1

"Circular Economy Model and Safety Assessment in Sustainable Supply Chain"

Chair: Assoc. Prof. Célestin ELOCK SON, Université de Lorraine, France
Zoom ID: 880 0161 7852 https://us02web.zoom.us/j/88001617852

Time: 14:00-15:30, February 22, 2025 (UTC+9)	Venue: BT5F - 0501

Notes: The schedule of each presentation is for reference only. Presenters are required to attend the whole session, in case there may be some changes on conference day. Please join in the room 5-10 minutes earlier.

Time: 14:00-14:15	Paper ID: M25-407A	Presenter: Pietro Romano

Title: *Orchestrating resources to create value in circular economy supply networks: The case of a social cooperative*

Authors: Pamela Danese, Pietro Romano, Mateja Zavadlav

From: University of Udine - DPIA, Italy

Abstract: Circular economy (CE) emphasizes the environmental–economy relationship, focusing on economic growth and emissions reduction, while largely excluding social aspects. However, there exists an economic model that embraces the social side called the social and solidarity economy (SSE). SSE promotes a socially and environmentally driven approach, prioritizing ethics and collective benefit, while seeking a balance between the community and economic goals. Some authors suggest SSE could integrate the social dimension into CE, yet few have explored this convergence known as the social and solidarity circular economy (SSCE). Cooperatives within the SSCE play a pivotal role by incorporating circular economy principles such as waste reuse, into society. These organizations prioritize societal value but must still compete with for-profit enterprises and other cooperatives. To remain viable, they need to generate sufficient revenue to sustain and grow, while delivering value efficiently to both customers and stakeholders. Consequently, understanding how social cooperatives manage their resources to pursue social impact is crucial. Despite some theoretical and empirical work, the knowledge about SSCE remains limited and fragmented between the studies of hybrid organizations and circular business models. To address this gap, this study will apply resource orchestration theory to answer two research questions: (1) How do social cooperatives in the SSCE orchestrate resources to create value for both society and stakeholders simultaneously? (2) What competencies and resources are crucial for their success?

Time: 14:15-14:30	Paper ID: M25-416A	Presenter: Wei Ju Chen

Title: *Stochastic Semiconductor Supply Chain Network Reliability Assessment*

Authors: Wei Ju Chen, Cheng Ta Yeh, Tzu Yun Cheng

From: Fu Jen Catholic University, Taiwan

Abstract: This study conducts an in-depth analysis of supply chain stability, emphasizing the impact of supply chain disruptions on overall operations and highlighting the critical role of stability assessment in supply chain management. The semiconductor supply chain network is viewed as a type of stochastic flow network, making reliability analysis particularly important. The method for calculating supply chain reliability considers the ability to meet demand while accounting for various cost factors, including transportation costs and carbon taxes, which are essential for achieving sustainability goals. The study further proposes a supply chain reliability evaluation framework based on the shortest path solution model, aimed at optimizing transportation and reducing carbon emissions. Through concrete examples, the paper explores the significance of supply chain reliability and validates the feasibility and effectiveness of the proposed model in practical applications. The results of this research indicate that enhancing supply chain reliability helps mitigate risks and improve overall operational efficiency, particularly in addressing supply uncertainties and environmental challenges.

Time: 14:30-14:45	Paper ID: M25-406	Presenter: Joseph Rafferty

Title: *A cross jurisdiction, secure, agri-food supply chain twin leveraging a directed acyclic graph*

Authors: Thomas Martin, Joseph Rafferty, Trevor Cadden, Ronan McIvor

From: Ulster University, UK

Abstract: The protein-I project is a cross Ireland initiative that takes a holistic food systems approach to enhancing the sustainability of protein production across the island of Ireland. One of the project's aims is to produce a smart agricultural supply chain solution which can provide greater sustainability and assurance of the origin of foodstuff. The modern agri-food sector contains a variety of complex supply chains; these supply chains can be short or long. Supply chains are short when products are transported between local producers with minimal intermediaries. Long supply chains exist where food is transported across the globe between many large distribution centers. Technology has played a pivotal role in optimizing the interactions between supply chain actors facilitating modelling, optimization and tracking factors related to assurance. This study evaluates the existing state of the art supply chain solutions to determine how they can be improved and applied to the local, and unique, agri-food supply chains which exist across the Island of Ireland. The island of Ireland presents a unique challenge where geographically short supply chains may have to straddle, two legal jurisdictions. In addition to a literature review, to create a solution tailored to the needs of the Agri-food sector in Ireland, this study collected requirements through a series of workshops and interviews with stakeholders. The stakeholders presented several use cases to highlight the shortcomings of the current supply chain, and in response to these challenges, a customized solution was designed and implemented. This solution, and its evaluation, is the focus of the study presented in this paper.

Time: 14:45-15:00	Paper ID: M25-432A	Presenter: Manuj Purwar

Title: *Lessons learned from redesigning public health medicines supply chain model in Uttar Pradesh, India*

Authors: Manuj Purwar, Joihn Anthony

From: India Health Action Trust, India

Abstract: Essential medicines are those that satisfy the priority health care needs of the population. A well-functioning supply chain system is important to improve the credibility of the health system. Uttar Pradesh is India's most populous state with 238 million people and a vast network of 30,000+ public health facilities. Ensuring availability of essential medicines across all these facilities at all times is a significant challenge. This manuscript describes the gaps identified in the legacy model, the creation of a new entity called Uttar Pradesh Medical Supplies Corporation (UPMSC), its system design, the key process improvements undertaken and certain performance of the new entity. We identified seven essential pillars for a successful public health supply chain system through desk review and learnings from successful entities. The system design established clear responsibility matrix. The UPMSC is responsible for availability of essential medicines in the district warehouses across the year. To achieve this, UPMSC will discover the prices, distribute the risk of supply to multiple vendors for the same drug, maintain and control the warehouses, ensure double blinded quality control of all the batches of drug supplied, place centralized periodic supply orders based on consumption in all 75 warehouses combined and pay the vendors promptly. The facility in charge is responsible for the required drugs at the facility. To achieve this, the facilities are nominally allotted budget and have complete freedom to pick up medicines of their choice from the warehouse within the budget available. A passbook system was introduced to facilitate and keep records for the outgo of essential medicines from the warehouses.

Time: 15:00-15:15	Paper ID: M25-444	Presenter: SuYeon Yoon

Title: *VEXine: Automating SBOM & VEX Generation Using Transformer LLM Models with LangGraph*

Authors: Su-Yeon Yoon, Min-Ju Kwon, Sang-Beom Kim, Youn-Gee Kim, Jong-Won Park, Seung-Ho Son, Young-Ok Kim, Si-Hyeong Jeong

From: KITRI(Korea Information Technology Research Institute) BoB(Best of the Best), Republic of Korea

Abstract: As software systems grow more complex and supply chain attacks become more advanced, ensuring security and transparency is a global priority. This paper introduces VEXine, an AI-powered framework that automates the generation of Software Bill of Materials (SBOM) and Vulnerability Exploitability Exchange (VEX) reports using transformer-based large language models. By combining advanced AI with automated security assessment tools, VEXine enhances the accuracy, efficiency, and scalability of supply chain vulnerability management. Evaluations against traditional software composition analysis (SCA) tools show that VEXine delivers superior performance, providing actionable insights and addressing critical security challenges in modern software ecosystems.

Time: 15:15-15:30	Paper ID: M25-415	Presenter: Avinash D. Bagul

Title: *Multi-Tier Supply Network Optimization Under Demand Uncertainty and Quantity Discount Environment*

Authors: Avinash D. Bagul

From: NICMAR University, India

Abstract: This paper presents a solution methodology for cost optimization of a multi-tier supply network under quantity discount environment. A model is developed for order quantity allocation to the multiple suppliers facing demand uncertainty. The model incorporates coordinated multi-echelon inventory management concept with constraints on quality, storage space, transportation costs and quantity discount, associated with the suppliers. The study compares supply network costs in discount and non-discount scenarios, revealing a cost advantage under discounting. Sensitivity analysis, using a full factorial experimental design, highlights the significant variables affecting supply network cost, with demand rate and percentage discount being the most significant variables. The proposed methodology can enable practitioners quantify the impact of discounting on supply network cost. Thus, they can advocate quantity discount as a key component of supply chain sourcing strategy of the organizations.

Session Group Photo | Best Presentation will be awarded during Dinner Banquet

Session 2

"AI Based Supply Chain Collaborative Management"

Chair: Prof. Tianjiao Qiu, California State University Long Beach, USA
Zoom ID: 813 6077 8133 https://us02web.zoom.us/j/81360778133

Time: 14:00-15:30, February 22, 2025 (UTC+9)	Venue: BT5F - 0502

Notes: The schedule of each presentation is for reference only. Presenters are required to attend the whole session, in case there may be some changes on conference day. Please join in the room 5-10 minutes earlier.

Time: 14:00-14:15	Paper ID: M25-401A	Presenter: Hamza Saad

Title: *Supply Chain Mitigation Using Lean Thinking in New Hampshire Manufacturers*

Authors: Hamza Saad

From: University of Central Missouri, USA

Abstract: The COVID-19 pandemic and Russo-Ukrainian War outlined critical supply chain challenges, as United States companies faced major disruptions due to raw material shortages, forcing them to choose between overstocking for excessive costs and prolonged delays leading to stop production. This study focuses on supply chain optimization, with feedback from over 200 New Hampshire companies that emphasized the urgent need for improvement. Using lean thinking principles, which target waste reduction in areas like overproduction, delays, transport inefficiencies, surplus inventory, and product defects, this study aimed to mitigate the supply chain challenges by building the suitable strategy based on the real problems scope. Key strategies applied included reorder point calculations, optimized inventory layouts, visual management systems, and the 5S framework to improve raw material estimation and risk handling. Results showed a marked process improvement, raising supply chain efficiency from 45% to 93%. The study demonstrates that lean methodologies can equip companies with stronger, more adaptable supply chains capable of withstanding future disruptions.

Time: 14:15-14:30	Paper ID: M25-409	Presenter: Mohammad Alshehri

Title: *AI-Driven Identification of Supply Delays using Advanced Analytical Approaches*

Authors: Mohammad Alshehri, Fahd Alfarsi

From: University of Jeddah, Saudi Arabia

Abstract: Efficient supply chains play an essential role in delivering humanitarian supplies and directly impact the success of public aid initiatives globally. Predicting the delivery status of these essential supplies in a timely manner is crucial. Therefore, this study investigates the application of various machine learning (ML) approaches to predict whether humanitarian deliveries will be made on time, using a comprehensive case-study dataset provided by one of the largest international supplying organizations. We employed several ML methods, namely Logistics Regression, Support Vector Machine (SVM), K-Nearest Neighbor (KNN), and Navie Bays, to assess the proposed predictive model. The outcome of the analysis showed promising results, with weighted Recall (WRec.) / Accuracy (Acc.) scores ranging from 0.77 to 0.86 using the 4 algorithms mentioned earlier. These high-performance levels indicate the robustness of ML techniques in forecasting delivery status, potentially enabling more proactive and efficient supply chain management (SCM) in global aid initiatives. The implications of this study suggest that integrating advanced predictive analytics in SCM can significantly enhance the delivery performance of the critical commodities to those in need.

Time: 14:30-14:45	Paper ID: M25-424A	Presenter: Mohammadreza Nematollahi

Title: *Empowering Sustainable Agricultural Supply Chains through AI and Analytics: A Systematic Literature Review*

Authors: Mohammadreza Nematollahi, Maryam Nezhad Afrasiabi, Bart MacCarthy

From: University of Saskatchewan, Canada

Abstract: This study aims to systematically review the applications of Artificial Intelligence (AI) and analytics in sustainable agricultural supply chains, with a specific focus on their alignment with the United Nations' Sustainable Development Goals (SDGs). The research objectives are to identify key trends in the literature, uncover research

gaps, and propose future directions for applying AI and analytics to improve the sustainability of agricultural supply chains. To achieve these objectives, we employ a rigorous four-step methodology that involves analyzing 363 academic papers through both descriptive and content analyses. The study explores AI's potential to optimize resource use and enhance sustainability through technologies such as blockchain, the Internet of Things (IoT), and machine learning. The results identify underexplored areas of research, including large language models, generative AI, unsupervised learning, and SDGs that have received less attention. The findings also highlight the dominance of crop-based agriculture in the literature, revealing the need for more research on sectors such as livestock, dairy, biomass, and aquaculture. Additionally, the study aims to address the scarcity of real-world case studies, advocating for more practical applications of AI in agricultural supply chains. Ultimately, this research will provide valuable insights for researchers, practitioners, and policymakers, advancing the role of AI and analytics in achieving sustainability in agricultural supply chains.

Time: 14:45-15:00	Paper ID: M25-428	Presenter: Noppasorn Sutthibutr

Title: *Advanced Fuzzy Mathematical Modeling with Monte Carlo Simulation: A Comprehensive Framework for Analyzing Fuzzy Supply Chain Aggregate Production Planning Problem*

Authors: Noppasorn Sutthibutr, Kunihiko Hiraishi, Navee Chiadamrong, Suttipong Thajchayapong

From: Japan Advanced Institute of Science and Technology (JAIST), Japan; Sirindhorn International Institute of Technology (SIIT), Thailand

Abstract: This study integrates Monte Carlo simulation with fuzzy mathematical program-ming to address decision-making challenges in uncertain environments. Tradi-tional models often struggle to manage high variability, but this approach em-ploys Monte Carlo simulation to generate probabilistic outcomes, enabling de-tailed variability analysis. The fuzzy-based model further enhances flexibility by incorporating imprecise information for handling of ambiguity. Key insights from the simulation include the identification of model resilience across diverse scenar-ios. Validation of the fuzzy-based approach, achieved by comparing simulated outcomes with fuzzy-based outcomes, confirms its reliability in real-world appli-cations. The combined model offers practical benefits, including improved adapt-ability and effective scenario analysis. This study provides a comprehensive framework for supply chain aggregate production planning under uncertain envi-ronments, equipping decision-makers to navigate uncertainty with greater confi-dence and precision.

Time: 15:00-15:15	Paper ID: M25-449A	Presenter: Mayur R. Morey

Title: *A MILP-Based Optimization of Drone Launch Points for Medical Supply Chains in Challenging Terrains*

Authors: Mayur R. Morey, Arshinder Kaur, Sharan Srinivas

From: Indian Institute of Technology Madras, India

Abstract: This study presents a Mixed Integer Linear Programming (MILP) model for optimizing the delivery of medical supplies to remote and rural regions of Meghalaya, India. The model utilizes data from 12 district hospitals (DH), 30 community healthcare centres (CHC), and 116 primary healthcare centres (PHC), representing a total of 158 healthcare facilities from the state. The objective is to cluster these facilities and designate one hospital within each cluster as a drone launch station, ensuring that all facilities within a cluster are served efficiently. The number of drones and launch points within each cluster is determined based on the demand and the operational range of the drones. A key consideration in this model is the estimation of drone range, which is significantly influenced by the terrain and altitude, as most facilities are in hilly regions. The model accounts for the energy consumption patterns unique to such terrains, ensuring realistic and effective drone-based healthcare logistics. This research has significant implications for improving healthcare accessibility in remote and underserved regions by optimizing the delivery of medical supplies using drones. It enhances emergency and disaster response capabilities, and supports sustainable logistics through energy-efficient operations. The proposed methodology can be scaled to other hilly or remote areas, offering a data-driven framework for strategic decision-making in healthcare logistics. By addressing challenges such as energy consumption and terrain navigation, the study fosters technological innovation, reduces costs, and promotes social equity and economic development in these regions.

Time: 15:15-15:30	Paper ID: M25-405	Presenter: Shubing Diao zoom

Title: *Mathematics teaching strategy for Graduate Diploma in Supply Chain and Shipping Management*

Authors: Shubing Susan Diao, Ziming Tom Qi, Dave Hope, Nicola Pretty, Malcolm Brown

From: Manukau Institute of Technology, New Zealand

Abstract: Previous research in engineering mathematics education was extended to explore the implementation of

industry project-based learning as an alternative to the current method used of theoretical-based teaching. A research project is built in New Zealand Maritime School to determine the aspects of the maths most needed in the Supply Chain industry including Shipping Management, to explore whether an industry-oriented mathematics teaching strategy would improve the mathematical achievement of learners in the Graduate Diploma in Supply Chain and Shipping Management program. This is important to the learner as achievement in mathematics is integral to aspects of the Supply Chain including Shipping Management. The research hypothesis is that the need of industry may require a shift from the teaching of generic or purely theoretical mathematics to industry-specific mathematics courses in Supply Chain. In this report, a Literature Review is completed to recommendations with a question list which was sent to all the teachers in the program of Graduate Diploma in Supply Chain and Shipping Management. As a result, a list of pre-requisites mathematical skills in this program is identified, e.g. there are 9 courses in the program: Managing Risk & Resilience, Network Systems, Transport Marketing, Logistics Practice, Transport & Maritime Law, Logistics Management, Industry Research Project, Trade Management in Shipping, Port Management. Pre-requisite mathematical skills are considered in the courses Logistics Practice and Trade Management in Shipping. In other courses, it was identified that Logistics Management and Network Systems include absolute value, standard deviation, square root rule, and algebra. Thus, a full list of pre-requisite mathematical skills for this program is confirmed, then research questions are recommended, i.e. After their enrolment, will a pre-test be available for evaluation of the students' pre-requisite mathematical skills? Will an independent short course for those students falling in the pre-test be created for Mathematical Skills preparation for Supply Chain including Shipping Management? In conclusion, this presentation presents a design of a pre-test for evaluation of the students' pre-requisite mathematical skills and an independent short course for those students who failed the pre-test but enrolled in the Graduate Diploma in Supply Chain and Shipping Management.

Session Group Photo | Best Presentation will be awarded during Dinner Banquet

Session 3

"Supply Chain Optimization and Services Based on Composite Methods"

Chair: Prof. Hing Kai Chan, University of Nottingham Ningbo China, China
Zoom ID: 880 0161 7852 https://us02web.zoom.us/j/88001617852

Time: 16:00-17:30, February 22, 2025 (UTC+9)	Venue: BT5F - 0501

Notes: The schedule of each presentation is for reference only. Presenters are required to attend the whole session, in case there may be some changes on conference day. Please join in the room 5-10 minutes earlier.

Time: 16:00-16:15	Paper ID: M25-452A	Presenter: Prabhakaran Rajendran

Title: *Automated Gate Check-In with AI Cameras and Precheck App for Yard Management*

Authors: Prabhakaran Rajendran, Nitin Agarwal, Karthik Kalyan Raj Kumar Yesodha, Nirmal Kumar Balaraman

From: CSCS LLC, USA

Abstract: Efficient yard management is critical for smooth supply chain operations, directly influencing productivity, accuracy, and customer satisfaction. As warehouses and distribution centers expand in size and complexity, traditional manual gate check-ins for trailers are becoming obsolete. Automated gate check-in systems powered by AI cameras and pre-check apps are revolutionizing yard management by streamlining operations, minimizing errors, and boosting visibility. Challenges in Traditional Gate Check-In Manual gate check-in processes are fraught with inefficiencies. These systems depend on human personnel to verify trailer numbers, check documentation, and validate driver credentials. Common challenges include: Data Entry Errors: Human oversight often leads to incorrect recording of trailer or driver details. Time Delays: Manual verification can take several minutes per vehicle, causing backups, especially during peak hours. Security Risks: Limited visibility into trailer contents or unverified drivers heightens risks of theft or unauthorized access. Operational Inefficiencies: A lack of real-time tracking hampers yard operations and increases trailer dwell times. AI-Powered Gate Check-In AI cameras form the backbone of automated gate check-in systems. Leveraging computer vision and machine learning, these cameras detect and identify trailers, trailer numbers, and license plates.

Time: 16:15-16:30	Paper ID: M25-419A	Presenter: Célestin ELOCK SON

Title: *What drive customers' behavior in drive-through: the mediating role of trust*

Authors: Célestin ELOCK SON, Georges WALY BIDI, Salomée RUEL

From: Université de Lorraine, France

Abstract: This study aims to identify the key variables of the drive-through (DT) service likely to contribute to customer satisfaction and increase purchase frequency to favour its adoption. Its particularity is to attempt to measure the mediating role of DT user trust as well as the moderating role of waiting time and COVID-19 in the adoption of this channel. The research adopt a quantitative methodology to test the model based on a data collected by questionnaire on DT in France. The results show that service variables such as the DT professionalism, reputation and assortment significantly influence the behavior of DT users. Similarly, trust plays a partial mediation in the relationship between the above-mentioned variables and user behavior (purchase frequency and satisfaction). Finally, professionalism, reputation, assortment and trust have a significant impact on satisfaction, which in turn significantly influence the frequency of DT purchases. The effects of Covid-19 are not significant, which is an unexpected result.This research help to refine the service theory (Nyeck et al., 2002) in the context of the study of buyer behavior in DT. It examines the quality of the drive offer in the different phases of its execution. Indeed, the service theory highlights the need to successfully combine the three essential moments of the service: customer solicitation, resource mobilization and service provision (Mevel et al., 2021). In applying service theory to the DT offer, it is clear that what can create value is the service process itself. Since this process is carried out jointly by the service provider and its customer, the execution of the service will depend on the collaboration between them since the customer is an integral part of the process (Hansens 2019). This collaboration is based on trust. Which leads to the main contribution of this research: the role of trust in the delivery of the drive-through service (Mevel et al., 2016).

Time: 16:30-16:45	Paper ID: M25-422	Presenter: Iris Ann G. Martinez

Title: *Breakdown of Planning Time and the Establishment of a 'Reorder Point Stockout Protection' for Items with Short Expiration*

Authors: Angelo C. Ani, Iris Ann G. Martinez, Claro C. Arriola

From: University of the Philippines Diliman, Philippines

Abstract: This paper proposes a methodology to quickly determine the reorder point and order quantity for an item that has a short life span and that is produced in a lim-ited quantity because of limited production capacity. The proposal is to cut the planning time horizons into small enough periods to reflect the variances of de-mands across those periods, then plan the reorder point based on the demand dur-ing the lead time, plus an added protection quantity to the usual order quantity. Applying the proposal to a real-life case study shows good performance in mini-mizing the stockouts. Results of the implementation show consistent stockout re-duction for two trials, i.e., from 9.6% to 2.3% of the demand for the first and 4.7% to 0.05% of the demand for the second. On the other hand, wastage was not reduced in the first trial, it increased from 1% to 3.6%, although it was re-duced in the second trial from 19% to 4.3%. Hence, the results show that there could still be an opportunity to refine the proposed method to reduce the expired items, which production staff intentionally kept because of their (culture of) aver-sion to stockout.

Time: 16:45-17:00	Paper ID: M25-423A	Presenter: Tianjiao Qiu

Title: *Buyer Support and Supplier Responsiveness on Global Supplier Marketing Capacity: The Effects of Supplier Types*

Authors: Tianjiao Qiu

From: California State University Long Beach, USA

Abstract: Recent decades have witnessed increased global procurement, through which buyers expand operations into the global market and benefit from access to global suppliers. As globalization and outsourcing lower buyers' procurement costs, buyers seeking competitive advantage through procurements from suppliers are motivated to provide financial and technological support to suppliers so that suppliers can meet buyers' procurement needs and ensure supply chain efficiency. According to inter-organizational learning theory, supplier chain partners can gain a competitive advantage through learning from each other. Previous findings show that technological knowledge transfers from buyers to suppliers have the potential to impact suppliers' innovation development. Technological knowledge transfer with stringent buyers' quality control promotes suppliers' innovation capability. The institutional environment mediates knowledge absorptive capacity on supplier innovation performance. Despite the rich findings on supplier innovation gained through buyer-supplier relationships, previous studies have failed to examine the different learning needs of suppliers and the effect of supplier type on relationship outcomes. Two major types of global suppliers, component and finished-products suppliers, fulfill different buyers' market and innovation needs, thereby learning and benefiting differently in their relationships with the buyers. However, little is known about how supplier type relates to buyer support and suppliers' capacity development regarding suppliers' learning needs and responsiveness in the supplier-buyer relationships. This study fills the research gap and empirically examines whether buyers extend different support to two types of suppliers, component and finished-product suppliers, and how buyer support subsequently impacts supplier marketing capability development from an inter-organizational learning perspective.

Time: 17:00-17:15	Paper ID: M25-411A	Presenter: Arunima Malik

Title: *Impact of international trade on Sustainable Development Goals – polarizing and equalizing trends*

Authors: Arunima Malik

From: The University of Sydney, Australia

Abstract: The influence of international trade on the United Nations Sustainable Development Goals (UN SDGs) is multifaceted. International trade can either promote or hinder progress, thus directly impacting people, economies and livelihoods. This presentation explores the relevance of consumption-based proxies linked to environmental and social issues for understanding trends in international outsourcing of resource and pollution-intensive production. A temporal assessment from 1990-2018 for the Global North and South using representative proxies linked to SDGs is presented to analyse outsourcing trends and highlight polarising trends that are affecting progress on achieving SDGs. Findings suggest that global trade can lead to both polarising and equalising trends

that can influence a country's ability in meeting the 2030 Agenda for Sustainable Development.

Time: 17:15-17:30	Paper ID: M25-447A	Presenter: Noriki Ogura

Title: *Experimental study of using the time lag between training and test data sets as a measure for evaluating data set shifting*

Authors: Noriki Ogura, Yanwen Dong

From: Fukushima University, Japan

Abstract: Dataset shift occurs when the distribution of data changes between the training phase and the testing or deployment phase. This shift can lead to a decrease in model performance because the statistical properties of the data on which the model was trained no longer match the properties of the data it encounters in practice. A variety of methods have been developed to detect or monitor data set shift, but there is still a lack of general methods to assess prediction uncertainty, and the methods proposed so far are not easy to understand for practitioners. This study considers the credit scoring problem, where a machine learning model is constructed based on the past data and then used to predict the credit scores of new instances. Since the authors noticed that there is a possibility to evaluate the prediction uncertainty of credit scoring models according to the time lag between the training and test data sets, we conducted an experimental study to investigate whether this time lag can be used as a measure to evaluate the data set shift. We collected 13 years of financial data from Japanese regional banks for the period 2010-2022. We used each year's data for 2010-2021 as training data to construct credit scoring models using Support Vector Machines (SVMs). We then applied the models to predict the credit scores of banks for the following years and confirmed the accuracy of the models. It was clarified that (1) the prediction accuracy tends to decrease as the time lag increases; (2) it is necessary to construct a model based on training data from not too many years in the past; (3) to obtain a credit model with higher accuracy, the training data should be collected from the most recent year. Although the decrease in accuracy is not monotonic with increasing time lag, the time lag between the training and test data sets is a simple, straightforward, and approximate indicator for evaluating data set shift.

Session Group Photo | Best Presentation will be awarded during Dinner Banquet

Session 4

"Optimization and Collaborative Scheduling of Urban Multimodal Transport Logistics"

Chair: Prof. Yanwen Dong, Fukushima University, Japan
Zoom ID: 813 6077 8133 https://us02web.zoom.us/j/81360778133

Time: 16:00-17:15, February 22, 2025 (UTC+9)	Venue: BT5F - 0502

Notes: The schedule of each presentation is for reference only. Presenters are required to attend the whole session, in case there may be some changes on conference day. Please join in the room 5-10 minutes earlier.

Time: 16:00-16:15	Paper ID: M25-420	Presenter: Thomas Hanne

Title: *Multi-Objective Optimization of Airport Check-In Counter Allocation Using Genetic Algorithms*

Authors: Bennet Puthuparambil, Thomas Hanne, Rolf Dornberger

From: University of Applied Sciences and Arts Northwestern Switzerland, Switzerland

Abstract: This paper presents a multi-objective optimization approach using Genetic Algorithms (GAs) to address the Airport Check-In Counter Allocation problem. A hybrid model balancing operational costs, passenger waiting times, resource utilization, and service levels is developed. A GA framework, implemented with the DEAP library in Python, evaluates multiple scenarios through various test cases to assess performance under different conditions. The results demonstrate the robustness and adaptability of GAs in achieving high resource utilization and service levels with up to zero waiting times, even under increased demand and varying parameter settings. This study highlights the potential of GAs for solving complex multi-objective optimization problems in dynamic environments and suggests future research directions, including hybrid optimization methods and diverse parameter settings.

Time: 16:15-16:30	Paper ID: M25-453A	Presenter: Prasad Kadam

Title: *Optimizing Multimodal Logistics: A Decision Support Approach for Integrated Transportation*

Authors: Prasad Kadam, Arshinder Kaur

From: Indian Institute of Technology Madras, India

Abstract: Multimodal transportation combines different methods, like road and rail, to move goods efficiently from one place to another. This approach offers many benefits, such as reducing costs, lowering environmental impact, and providing flexibility to meet different delivery needs. By using the strengths of each transport mode, multimodal logistics can create efficient and customized solutions. However, there are some key gaps in current research. First, most studies focus mainly on reducing costs and do not consider the importance of delivery time. In reality, logistics managers often have to balance cost-effectiveness with the need for timely deliveries. Second, existing studies rarely address region-specific challenges, such as city traffic regulations in India that restrict vehicle movement during busy hours or require halts at city boundaries during the day. Third, while multimodal transportation often involves handling multiple orders, research has not explored strategies for consolidating these orders effectively to save time and cost. To address these gaps, this study develops a decision support system using a Mixed-Integer Linear Programming (MILP) model. This system helps logistics managers decide whether to use road-only or multimodal transportation based on factors such as order weight, delivery deadlines, and customer locations. The MILP model considers multiple objectives, including cost, delivery time, and traffic congestion, which affects vehicle speed. It also includes strategies for combining multiple orders from one origin to multiple destinations, improving overall efficiency. We use two optimization approaches to solve the problem: the weighted sum method for simplicity and flexibility, and the epsilon-constraint method to identify the best trade-offs between different objectives. Our results show that the proposed model performs better than traditional road-only methods. It reduces costs and delivery times while also lowering environmental impact. Testing the model across different scenarios confirms that it works well in real-world conditions, making it a valuable tool for logistics managers in planning transportation more effectively.

Time: 16:30-16:45	Paper ID: M25-456A	Presenter: Anantaya Sonklin, Putthipong Phoothavorarak

Title: *Optimizing Emergency Logistics for Flood Disaster Relief: A Multi-Objective Approach*

Authors: Anantaya Sonklin, Putthipong Phoothavorarak, Sujira Trirattanasongpol, Aua-aree Boonperm

From: Thammasat University, Thailand

Abstract: Floods rank among the most devastating natural disasters, causing extensive harm to lives and property. Addressing the need for effective postdisaster logistics, this research develops a supply chain optimization framework tailored for flood relief operations. The framework is designed to equitably deliver aid to affected households, with particular attention to those who choose to remain in their homes instead of relocating to shelters. Leveraging the Location Routing Problem (LRP), the study adopts a multi-objective approach to balance critical goals: minimizing delivery delays, reducing costs, and meeting practical constraints such as accessibility and resource availability. Key components include selecting optimal distribution centers, planning efficient delivery routes, and allocating essential survival resources. A case study focusing on flood relief in Nan Province, Thailand, showcases the framework's real-world applicability, using Gurobi Optimization to support decision-making. Results demonstrate significant improvements in coordination and resource management, empowering local health volunteers to respond more effectively to crises. The proposed model is scalable and adaptable, providing actionable strategies for emergency preparedness and rapid response in diverse disaster scenarios. By integrating disaster management and supply chain optimization, this research contributes innovative solutions to the growing challenges of humanitarian logistics.

Time: 16:45-17:00	Paper ID: M25-433A	Presenter: Zhuolin Lang

Title: *Pricing Mechanisms for New Energy Vehicle Power Battery Recycling: A Bargaining Theory Approach*

Authors: Zhuolin Lang, Yongjian Pu

From: Chongqing University, China

Abstract: With the rapid development of the new energy vehicle market, the replacement and scrapping of power batteries have gradually become the focus of attention. If retired power batteries are not handled properly, they will not only have a negative impact on the environment, but also lead to the waste of precious resources. At present, most of the research on power battery recycling focuses on the influence of factors such as consumer behavior, recycling channel selection and government policies on recycling pricing under the framework of master-slave game, while few literatures have deeply studied the bargaining behavior and pricing mechanism between manufacturers and retailers in the recycling process. To fill this research gap, this paper constructs a dual-channel recycling bargaining model involving a single manufacturer and a retailer. In this model, manufacturers can either independently perform recycling tasks through direct channels or entrust retailers to recycle power batteries. Specifically, manufacturers are responsible for determining the recycling price in the direct sales channel, while retailers set the recycling price in the retail channel. At the same time, manufacturers and retailers negotiate the commission generated by the commissioned recycling. The core goal of this study is to explore how manufacturers and retailers can find the best time to bargain for the commission in a dual-channel recycling supply chain environment through theoretical modeling and simulation to maximize the interests of both parties. We use theoretical modeling to describe the interactive relationship between manufacturers and retailers, and use simulation to test the effectiveness of negotiation strategies under different scenarios. Through this approach, this paper hopes to reveal the key factors that affect the negotiation strategies of both parties and provide conclusions with practical guidance, contributing new perspectives to optimize the power battery recycling system.

Time: 17:00-17:15	Paper ID: M25-446	Presenter: Grace Meyanti Putri zoom

Title: *Optimizing the Role of BUM Desa to Support the Distribution of Products through Jembatan Udara Program at Disadvantaged Regions of Papua - Indonesia*

Authors: Grace Meyanti Putri, Septian Widyanto, Ira Naila Sa'adah, Mardiah Nurpadilah

From: Ministry of Village and Disadvantaged Region Development, Indonesia

Abstract: Papua continues to face significant developmental challenges, particularly in accessing essential goods at it's disadvantaged regions. Government has implemented Air Bridge (Jembatan Udara) Program, which facilitated pioneering air cargo transport, aimed to address transportation limitations in these regions. However, inefficiencies in empty return flights led to high logistics costs and low delivery frequency, ultimately constraining

regional economic integration. In this context, the role of Village-Owned Enterprise (BUM Desa) as local distribution aggregators became crucial to maximizing cargo capacity utilization by transporting local village products on return flights. This study employed a literature review and secondary data analysis to explore the strategic role of BUM Desa in optimizing 'Jembatan Udara' Program. This research evaluated the balance between air transport capacity and the distribution needs of priority products in Papua through a supply and demand analysis approach. The findings indicated that BUM Desa's involvement in filling empty cargo spaces improved the operational efficiency of pioneering air transport and supported sustainable local product distribution in disadvantaged regions. The recommendations derived from the analysis included empowering BUM Desa through managerial capacity enhancement and proactive policy support from the government. The synergy between BUM Desa, central and regional governments, and the private sector was necessary to strengthen supply chains and ensure distribution efficiency. Thus, optimizing BUM Desa's role not only will reduce logistics cost and expanded market access for Papua's priority products, but also supporting sustainable economic development in disadvantaged regions.

Session Group Photo | Best Presentation will be awarded during Dinner Banquet

Delegate

- Norah Ahmed Al Subait, UB, SAUDI ARABIA
- Pamela Danese, University of Padova, Italy
- Min-Ju Kwon, KITRI (Korea Information Technology Research Institute) BoB(Best of the Best), Republic of Korea
- Youn-Gee Kim, KITRI (Korea Information Technology Research Institute) BoB(Best of the Best), Republic of Korea
- Everlyn Okelo, KCB PLC, Kenya
- Anantaya Sonklin, Thammasat University, Thailand
- Putthipong Phoothavorarak, Thammasat University, Thailand

One Free Day in Tokyo

Time: Free Time, February 23, 2025

Itinerary Recommendation:

1. Tokyo Skytree

☞ The Tokyo Skytree (東京スカイツリー) is a television broadcasting tower and landmark of Tokyo. It is the centerpiece of the Tokyo Skytree Town in the Sumida City Ward, not far away from Asakusa. With a height of 634 meters, it is the tallest structure in Japan and was the second tallest in the world at the time of its completion. A large shopping complex with an aquarium is located at its base.

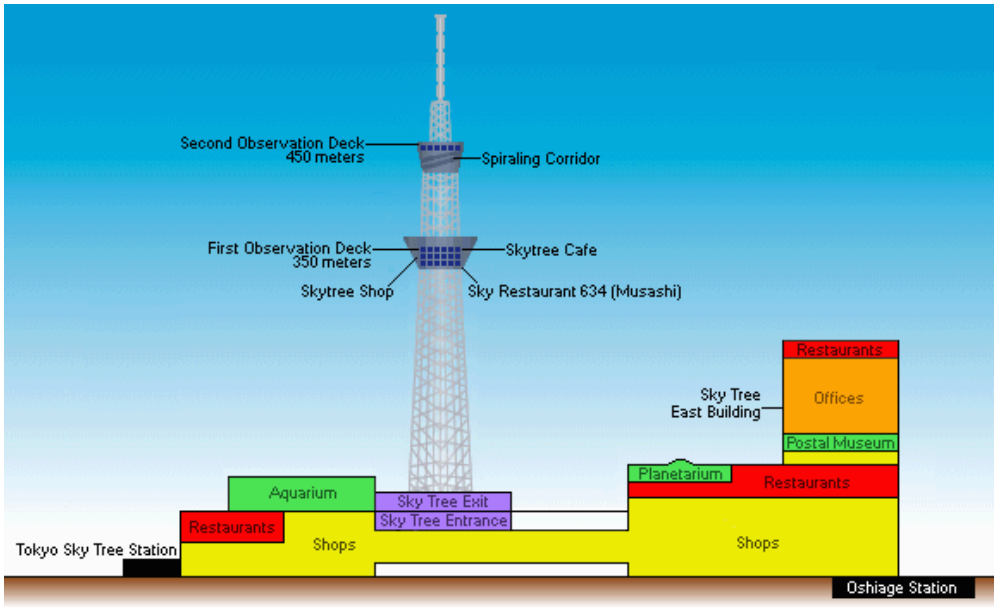
☞ Official Website: https://www.tokyo-skytree.jp/en/

☞ Address: 1 Chome-1-2 Oshiage, Sumida City, Tokyo 131-004, Japan (〒135-0045 東京都墨田区押上1-1-2.)

☞ Opening Hours: 10:00am to 10:00pm (Last admission 9:00pm)

☞ Ticket: advance ticket / same day ticket / Special Experience Tickets
https://www.tokyo-skytree.jp/en/ticket/individual/

☞ Access: by train / on foot / by car https://www.tokyo-skytree.jp/en/access/



One Free Day in Tokyo

2. Sensoji (Asakusa Kannon Temple)

- Senso-ji (浅草寺) completed in 645, is the oldest temple in Tokyo. Known throughout Japan, it is the temple of Avalokitesvara Bodhisattva (Sho Kanzeon Bosatsu), who embodies the mercy of all Buddhas.
- Location: 2-3-1 Asakusa, Taito-ku, Tokyo 111-0032, Japan
- Opening Hours: Main hall: 6:00 to 17:00
- Admission: Free

3. Tokyo Cruise

- A network of riverboats, or water buses, serve Tokyo Bay and the Sumida River connecting Odaiba and Asakusa. The different cruise lines follow slightly different routes, but all offer prime views of Tokyo landmarks such as TOKYO SKYTREE, Rainbow Bridge, and the unusually-shaped Asahi Group Headquarters Building.
- Operating Status: https://www.suijobus.co.jp/en/today-operation/
- Pier Location & Timetable & Fares:
  - Honida Pier: https://www.suijobus.co.jp/en/price/#hinode
  - Asakusa: https://www.suijobus.co.jp/en/price/#asakusa
  - Hamarikyu: https://www.suijobus.co.jp/en/price/#hamarikyu
  - Toyosu: https://www.suijobus.co.jp/en/price/#toyosu
  - Odaiba Seaside Park: https://www.suijobus.co.jp/en/price/#odaiba
  - Palette Town: https://www.suijobus.co.jp/en/price/#palettetown
  - Tokyo Big Sight: https://www.suijobus.co.jp/en/price/#bigsight

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