

ICLT 2023

THE 13TH INTERNATIONAL CONFERENCE
ON LOGISTICS & TRANSPORT 2023

CIRCULAR SUPPLY CHAIN FOR RESILLIENCE



ACSB EQUIS AMBA



CENTER OF EXCELLENCE IN
CONNECTIVITY

Proceeding of International Conference on Logistics and Transport 2023
[ABSTRACT]

27-29 SEPTEMBER 2023
HANKEN SCHOOL OF ECONOMICS
HELSINKI, FINLAND
[HTTPS://ICLT.INFO](https://iclt.info)

INTRODUCTION

International Conference on Logistics and Transport This is the 13th international conference organized by the Centre for Logistics Research at Thammasat Business School, Thammasat University, the Graduate School of Chiang Mai University and the Supply Chain and Engineering Management Research Unit of Chiang Mai University. This is a major event for researchers in transport, logistics, supply chain and value chain management, especially in the Asia Pacific region.

This year's event in Krabi (Thailand), is a continuation of past successful conferences held in 2009 in Chiang Mai (Thailand), 2010 in Queenstown (New Zealand), 2011 in Malé (Maldives), 2012 in Chiang Mai (Thailand), 2013 in Kyoto (Japan), 2014 in Kuala Lumpur (Malaysia), 2015 in Lyon (France), 2016 in Singapore, 2017 in Bangkok (Thailand), 2018 in Okinawa (Japan), 2019 in Hanoi (Vietnam), 2022 in Krabi (Thailand). This year's event will be held in Helsinki, Finland, during September 27th to 29th, 2023, hosted by Hanken School of Economics.

The theme for this year's event is "Circular Supply Chain for Resilience". With the current movement towards an eco-friendly future, the role of repurposing what is once viewed as "waste" are recycled back in the manufacturing operation. Along with the adaption of data analytics in supply chain, physical internet, blockchain in supply chain, digital supply chain, computer applications in supply chain and disruptive technologies, resilience in circular supply chain have received a considerable attention in the current domain of supply chain management.

Under the theme of "Circular Supply Chain for Resilience", the following topics were welcomed at the conference:

- Procurement & Supply Management
- Planning & Forecasting
- Relationship & Collaboration
- Production Planning & Operations
- Inventory Fulfilment
- International Logistics
- Humanitarian Logistics
- Maritime Logistics
- Logistics Services Providers
- Logistics Development Policies
- Supply Chain Design/Configuration
- Supply Chain Risk Management
- Sustainable Supply Chain
- Production & Inventory
- Supply Chain Performance
- Global Supply Chain
- Multimodal Transport
- Freight Logistics
- E-Logistics
- Logistics Facilitation

SCIENTIFIC COMMITTEE

ORGANIZING COMMITTEE

Montira Yingvilasprasert

Thammasat University - Thailand

Tipavinee Suwanwong Rodbundith

Mae Fah Luang University - Thailand

Paitoon Varadejsatitwong

Thammasat University - Thailand

Puthipong Julagasigorn

Thammasat University – Thailand

GENERAL CHAIR

Ruth Banomyong

Thammasat University - Thailand

Apichat Sopadang

Chiang Mai University – Thailand

PROGRAMME CHAIR

Poti Chaopaisarn

Chiang Mai University – Thailand

INTERNATIONAL SCIENTIFIC COMMITTEE

Jyri Vilko

Lappeenranta University of Technology - Finland

Yacine Ouzrout

University of Lyon II - France

Hartmut Zadek

Otto-von-Guericke-University - Germany

Graham Heaslip

National University of Ireland - Ireland

Pietro Evangelista

The University of Naples Federico II - Italy

Magnus Andersson

Lund University - Sweden

Paul Childerhouse

Massey University - New Zealand

Anthony Beresford

Cardiff University, Wales - UK

Sate Sampattagul

Chiang Mai University – Thailand

David Grant

Hanken School of Economics - Finland

Chee Yew Wong

Leeds University - UK

Adrian E Coronado Mondragon

Royal Holloway University of London - UK

Manouchehr Vaziri

Sharif University of Technology - Iran

Harlina Suzana Jaafar

University Technology Mara - Malaysia

Tan Yan Weng

Singapore University of Social Sciences - Singapore

Manuel Woschank

Montanuniversität Leoben - Austria

Polin Lai

Chung Ang University - South Korea

Yenming J. Chen

National Kaohsiung University of Science and Technology - Taiwan

Ted T.C. Lirn

National Taiwan Ocean University - Taiwan

Trinh Thi Thu Huong

Foreign Trade University - Vietnam

Kuo-Chung Shang

National Taiwan Ocean University - Taiwan

Erwin Rauch

Free University of Bozen-Bolzano - Italy

Shinya Hanaoka

Tokyo Institute of Technology - Japan

Xi Yu

Chengdu University - China

Haiqing Zhang

Chengdu University - China

WELCOME ADDRESS FROM THE CONFERENCE CHAIRS

On behalf of the organizing committee, we would like to welcome all participants to the 13th International Conference on Logistics and Transport (ICLT2023). It has been more than a decade since the first conference was hosted in Chiang Mai (Thailand). This ICLT conference is expected to continue on an annual basis in order to facilitate the sharing of ideas, research findings, and teaching directions related to logistics and supply chain from an academic perspective. The theme for this year's event is "Circular Supply Chain for Resilience". This highlights the role of resilience in the ever-evolving supply chain practices and its endless economic possibilities in the current digitalization era.

"Circular Supply Chain for Resilience" is an important concept. It can be used as a guiding principle to help improve firms' resources, capabilities, and operational efficiencies through sustainability across the entire supply chain continuum. The challenge to harmonize these subtle changes between supply chain members remains a critical issue. Our carefully curated program features a range of sessions, including keynote presentations, panel discussions, workshops, and paper presentations, all designed to provide valuable insights and foster intellectual growth.

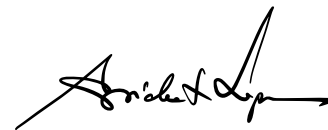
We would like to sincerely thank all presenters, reviewers, our scientific committees, and keynote speakers for their appreciated contribution. We cannot forget the important contribution of our sponsors, SeaOil (Public) Co. Ltd, Wice Logistics (Public) Co. Ltd., and Prima Marine (Public) Co. Ltd who have supported us through the years. We would also like to acknowledge the hard work and commitment of our organizing committee and volunteers who have put in countless hours to ensure that everything runs smoothly during this conference. Their efforts have been instrumental in bringing us all together today. We also apologize in advance if there are any difficulties you may encounter while participating in the conference.

Last but not the least, we would like to thank the HUMLOG Institute at the Hanken School of Economics for being our host this year. Would could not have run a successful conference without their support. We would like to particularly acknowledge the role of Professor David Grant and Gabriel Kieto Mahaniah in making our event successful.

Finally, we hope that you will enjoy this conference and we hope that the deliberations will be fruitful and successful.



Ruth Banomyong
ICLT General Chair



Apichat Sopadang
ICLT General Chair

WELCOME ADDRESS FROM THE LOCAL CHAIRS

As hosts of the local chair committee, we would like to welcome all participants to the 13th International Conference on Logistics and Transport (ICLT2023) at Hanken School of Economics in Helsinki. It is our privilege to extend a warm and heartfelt welcome to all of you. We are pleased to welcome those of you that have been with us for some time, as well as those of you who are new to our group.

Today marks the 13th annual conference and we are very proud to host this memorable conference here in Finland with all of you. Your strong support and active participation have made the ICLT2023 an excellent event. We have many papers and people registered. The quality of the papers is top class, and the spectrum of topics is very current and broad.

This conference is not only a gathering of brilliant minds and experts from various fields but also an opportunity to showcase the rich cultural heritage and hospitality of our region. Our city, and indeed Finland, is not only known for its scenic beauty and historical landmarks but also for its vibrant academic and research community. We are proud to be a part of this global conversation and to contribute to the intellectual growth that conferences like this foster.

We would like to express our gratitude to all those working generously helping behind the scenes, including local organizations and enterprises, to make ICLT2023 a success. Furthermore, we would like to express our thanks to all presenters, reviewers, and keynote speakers for their contribution.

We trust your conference participation experience will not encounter any difficulties, however, please reach out to anyone with the ICLT badge for assistance if something is amiss. Finally, we hope that you enjoy this conference and sincerely hope that all deliberations and conversations will be fruitful and successful.

Dr Anna Aminoff and Professor David B. Grant
ICLT Local Chairs, Hanken School of Economics

CONTENT

A COMPREHENSIVE FRAMEWORK AND GUIDELINES FOR SUSTAINABLE CITY DEVELOPMENT IN CHIANG MAI, THAILAND <i>Wiwat Pongruengkiat, Korrakot Y. Tippayawong, Pruk Aggarangsi, Preda Pichayapan, Tossapon Katongtung, Nakorn Tippayawong</i>	1
ACCOUNTING TRANSFORMATION IN SUPPLY CHAIN: INSIGHTS ON SHARED SERVICES CENTER <i>Chatrudee Jongsureyapart, Dej-anan Bungkilo, Tulaya Tulardilok</i>	2
ACTIVITY-BASED COSTING FOR INTRA-HOSPITAL TRANSFER <i>Wapee Manopiniwes, Martin Tutko, Rom Pairsuwan</i>	3
AI IMPLEMENTATION IN INNOVATION PROCESSES: AN UNCERTAINTY PERSPECTIVE <i>Jyri Vilko, Adeel Tariq, Maria Nemilentseva</i>	4
ALGORITHM FOR OPTIMIZING TRUCK UTILIZATION USING RESIDUAL CAPACITIES <i>Daniel Zöttl, Christoph Ecker, Sebastian Lumetzberger, Sebastian Schlund</i>	5
BLOCKCHAIN TECHNOLOGY EMPOWERING DIGITAL PRODUCT PASSPORTS FOR SUSTAINABLE SUPPLY CHAIN MANAGEMENT: A CONCEPTUAL FRAMEWORK <i>Manos-Nikolaos Papadakis, Evangelia Kopanaki, Asterios Stroumpoulis</i>	6
CHALLENGES OF CIRCULAR SUPPLY CHAINS IN DEVELOPING COUNTRIES: THE EXAMPLE OF ZAMBIA <i>Mwanza B.G., Magwenzi A., Nanthakorn B., Banomyong R.</i>	7
CONSEQUENCES OF NATURAL GAS SHORTAGE ON SUPPLY CHAINS IN AUSTRIA <i>Sandra König, Michael Plasch, Carina Hochstrasser, Michael Herburger, Stefan Schauer</i>	8
CONSUMER BEHAVIOUR IN CIRCULAR FOOD SUPPLY CHAIN <i>Loh Hui Shan, Lee Ming Han, Maria Cecilia Rojas Lopez</i>	9
DIGITAL TRANSFORMATION IN LOGISTICS: THE NECESSITY OF THE NEW AGE <i>Ezgi Dulun, Muhammed Enis Zorlu</i>	10
EFFECT OF PROCEDURES ON PORT ACCESSIBILITY AND SATISFACTION <i>Olivary John, Alfonse Dubi, Renger Kanani</i>	11
EMPTY CONTAINER REPOSITIONING USING FOLDABLE CONTAINERS IN LAND TRANSPORTATION: TRADE-OFF BETWEEN BUNDLED TIERS AND WAITING TIME <i>Koichi Shintani, Ken'ichiro Nagaiwa, Etsuko Nishimura</i>	12
EXPLAINABLE AI APPROACH FOR IDENTIFYING CRITICAL FACTORS AFFECTING ON-TIME ARRIVAL OF TRUCKS IN LOGISTICS <i>Panupong Wanjantuk, Ruth Banomyong</i>	13
ENVIRONMENTAL SUSTAINABILITY IN GLOBAL LOGISTICS HUBS <i>Sandy Hassan, David B. Grant, Sarah Shaw</i>	14
EXPLORING SUSTAINABILITY-RELATED ISSUES IN HOTEL BUSINESS: A CASE OF THAI PUBLIC COMPANIES <i>Siravat Teerasoponpong, Sainatee Chernbumroong, Varattaya Jangkrajarn</i>	15

GEN-Z CUSTOMERS' SERVICE PREFERENCE FOR EXPRESS DELIVERY ENTERPRISES: A CASE STUDY OF CHINA <i>V. Cherapanukorn, K. Wannagoat, D. Wu</i>	16
HORIZONTAL LOGISTICS COLLABORATION IN AGRI-FOOD SUPPLY CHAINS: AN ANALYSIS OF MOTIVES AND ENABLERS <i>Behzad Behdani</i>	17
IDENTIFICATION OF FACTORS INFLUENCING COST AND BENEFIT ASPECTS OF CROSS-COMPANY DATA EXCHANGE USING THE EXAMPLE OF THE STEEL INDUSTRY <i>Nikita Fjodorovs, Alan Gütermann, Tobias Wagne</i>	18
INVENTORY MANAGEMENT AND PRODUCT DEMAND PLANNING: CASE STUDY BAKERY PRODUCT FACTORY <i>Korrakot Y. Tippayawong, Saimock Duangchan, Pattareeya Yothin, Prim Fongsamootr</i>	19
MITIGATING SUPPLIER VULNERABILITIES TO IMPROVE SUPPLY CHAIN RESILIENCE <i>Narath Bhusiri, Paitoon Varadejsatitwong, Puthipong Julagasigorn, Ruth Banomyong</i>	20
MORAL DILEMMA FACING AUTONOMOUS VEHICLES: INSIGHTS FROM STATED PREFERENCE SURVEY IN THE CONTEXT OF SINGAPORE <i>Siying Zhu, Shen Loong Walt Tay, Cheng-Hsien Hsieh</i>	21
PERFORMANCE IMPROVEMENT OF COFFEE BEAN PRODUCTION BY LEAN TECHNIQUE <i>Wassanai Wattanutchariya, Yosita Phanluck</i>	22
RESILIENT SUPPLIER RELATIONSHIIP MANAGEMENT FRAMEWORK FOR. HUMANITARIAN ORGANISATION <i>Narath Bhusiri, Puthipong Julagasigorn, Paitoon Varadejsatitwong, Ruth Banomyong, Nirpa Dhami</i>	23
SMART CITY LOGISTICS FOR SUSTAINABILITY: A CASE STUDY OF SUSTAINABLE CITY LOGISTICS IN HELSINKI <i>Helleke Heikkinen, Anna Aminoff</i>	24
SUPPLY CHAIN ASSESSMENT AND ALIGNMENT FOR SPECIAL ECONOMIC DEVELOPMENT ZONE <i>Varattaya Jangkrajarn, Apichat Sopadang, Prim Fongsamootr, Anuwat Boonprasope, Sakgasem Ramingwong</i>	25
SUSTAINABILITY OF SUPPLY CHAINS FOR ELECTRIC VEHICLES <i>Fernandez, Thomas E. and Kalniev, M.</i>	26
THE ATTITUDE OF THAI TOURISTS TOWARDS GREEN LOGISTICS <i>Sainatee Chernbumroong, Siravat Teerasoponpong, Varattaya Jankrajarn</i>	27
THE CIRCULAR ECONOMY CONUNDRUM: BARRIERS, ENABLERS AND TENSIONS <i>Lisa M. Ellram, Sarah Schiffing, Helleke Heikkinen, Stina Lundin, John Kibe Munyoro, Anna Zhuravleva</i>	28
THE KEY DRIVERS AND BARRIERS IN THE ADOPTION OF MEDICATION DISPENSING TECHNOLOGY <i>Ganda Boonsothonsatit, Rardchawadee Silapunt, Salinee Choowitsakunlert, Wirachchaya Chanpuypetch, Kamol Kaemarungsi, Nilubon Chonsawat</i>	29

A COMPREHENSIVE FRAMEWORK AND GUIDELINES FOR SUSTAINABLE CITY DEVELOPMENT IN CHIANG MAI, THAILAND

Wiwat Pongruengkiat^{1,2}, Korrakot Y. Tippayawong³, Pruk Aggarangsi², Preda Pichayapan⁴, Tossapon Katongtung², Nakorn Tippayawong^{2, *}

¹*Graduate Program in Energy Engineering, Faculty of Engineering, Chiang Mai University, Chiang Mai, Thailand*

²*Department of Mechanical Engineering, Faculty of Engineering, Chiang Mai University, Chiang Mai, Thailand*

³*Department of Industrial Engineering, Faculty of Engineering, Chiang Mai University, Chiang Mai, Thailand*

⁴*Department of Civil Engineering, Faculty of Engineering, Chiang Mai University, Chiang Mai, Thailand*

ABSTRACT

Purpose: The purpose of this work is to provide practical guidelines for policymakers, urban planners, and stakeholders in Chiang Mai and to ensure that the city grows in a manner that preserves its environmental integrity, enhances the well-being of its residents, and fosters economic prosperity.

Design/Methodology/Approach: The research adopts a comprehensive approach to studying sustainable city development in Chiang Mai. It utilizes a combination of qualitative and quantitative methods, including data analysis. These methods enable a holistic understanding of the current state of the city and its sustainability challenges.

Findings: The framework for the development of the city of Chiang Mai was proposed. Future urban Chiang Mai development should focus mainly on increased utilization of renewable energy in relation to total energy consumption, improving air quality, improving waste management, and implementing sustainable transport options.

Research Limitations: Certain limitations were encountered, such as time constraints and data availability. These limitations may have influenced the scope and depth of the study.

Practical Implications: The guidelines derived from the study will serve as a practical tool for policymakers, urban planners, and stakeholders in Chiang Mai, enabling them to make informed decisions and take effective actions to promote sustainable city development.

Value: This research presenting a comprehensive framework for evaluating cities using indicators. The framework developed in this study can be adapted and applied not only to Chiang Mai but also to other cities globally.

Keywords: Sustainable cities and communities, Urban development, Clean energy

ACCOUNTING TRANSFORMATION IN SUPPLY CHAIN: INSIGHTS ON SHARED SERVICES CENTER

Chatrudee Jongsureyapart¹, Dej-anan Bungkilo², and Tulaya Tulardilok^{3*}

¹*Healthcare Logistics Management Research Center (Hlog),
School of Management, Mae Fah Luang University*

²*School of Management, Mae Fah Luang University*

³*Chiang Mai Business School, Chiang Mai University*

ABSTRACT

Purpose: This research examines how the Siam Cement Public Company Limited (SCG) Corporate Accounting Office transformed its cost center to shared service center. Specifically, the article objectives are to investigate design, implementation, and transformation processes by SCG corporate accounting office.

Design/methodology/approach: The research method used in this study was a deep single-case study. The unit analysis is the Corporate Accounting Department, the Siam Cement Public Company Limited. The research method was designed according to the guidelines of Eisenhardt (1991) and Yin (2009).

Findings: The findings indicate that the organizational structure with a management team form of governance is influenced by original SCG culture. In this case, leadership is necessary contributed to effectiveness of design, implementation, and transformation processes. Mechanism also requires planning, people, and processes, with technology as the accelerator.

Practical implications: The implementation involves strengthening the accounting department. Provide commercial information of the same standard across all business units of affiliates. Delivering services to these business units. It's not just about publishing accurate financial reports and tax information. It also values the visualization of strategic management as well as a comment on the trends and forecasts of companies for clients. There are big data as data mining, which is useful for analyzing data at both business unit levels and big picture data for the Siam Cement Group.

Originality: The research shows that SCG Corporate Accounting Office plays important role in creating value at the 1) individual level, 2) organizational level, and 3) profession level.

Keywords: Accounting Transformation, Shared Service Center

ACTIVITY-BASED COSTING FOR INTRA-HOSPITAL TRANSFER

Wapee Manopiniwes¹, Martin Tutko² and Rom Pairsuwan³

¹Industrial Engineering, Faculty of Engineering, Chiang Mai University, THAILAND

²International College of Digital Innovation, Chiang Mai University, THAILAND

³Department of Management and Entrepreneurship, Faculty of Business Administration, Chiang Mai University, THAILAND

ABSTRACT

Purpose: This research aims to examine the activity-based cost and evaluate the feasibility of outsourcing the intra-hospital transfer system at Nakornping Hospital, Chiang Mai.

Design/methodology/approach: The research commenced by studying and collecting data on the existing procedures. Idef0 was used to present a series of functions related to intra-hospital transfer activities together with data and objects that interrelate those functions. This involved observing the activities of the intra-hospital transfer staff from start to finish, accurately timing each activity. Additionally, wages of the intra-hospital transfer staff were obtained to facilitate calculations based on the principles of activity-based costing analysis.

Findings: The study showed that activities of intra-hospital transfer system can be grouped into three phases: pre-transfer, during-transfer, and post-transfer activities. The results revealed that the activity-based costing of intra-hospital transfer is higher than the budget allocated. Hospital administrators of the inpatient ward can use the results of this study as a guideline for planning appropriate intra-hospital transfer service activities.

Originality/value: Currently, Nakornping Hospital lacks cost information related to the intra-hospital transfer system services, and there has been no analysis conducted on the cost-effectiveness of outsourcing this transport systems.

Keywords: Activity-Based Costing, Intra-Hospital Transfer, Idef0

AI IMPLEMENTATION IN INNOVATION PROCESSES: AN UNCERTAINTY PERSPECTIVE

Jyri Vilko, Adeel Tariq, Maria Nemilentseva
LUT Kouvola
School of Engineering and Management / LUT University
Kouvola, Finland

ABSTRACT

Purpose: AI applications are increasing in accuracy and effectiveness, and simultaneously gaining more popularity internationally. While consumers online have historically been the main target market for businesses, AI may have several uses, including decreasing company risks, streamlining HR tasks, and anticipating cash flow and other functions in supply chains. The potential advantages of AI have been recognized and used, particularly in larger companies with plenty of resources. Its application to supply chains, however, is still in its early stages.

Design/methodology/approach: Drawing upon existing literature, this research presents a comprehensive framework that empowers supply chains to seamlessly integrate AI at various levels of the product innovation process, enabling them to stay competitive and overcome uncertainties associated with introducing innovative products.

Findings: The proposed framework provides valuable guidance for organizations in supply chains, fostering efficient and effective utilization of AI in their quest for introducing cutting-edge products. Managers need to develop an understanding of utilizing different AI functions effectively for innovative products, reducing uncertainty during this process and gaining competitive advantage at the same time.

Originality/value: For supply chains the use of AI can bring considerable opportunities as the technological and green transfer challenge them decision loaded with complexity and uncertainty in supply chains. The paper aims to integrate different functions of artificial intelligence, information acquisition, divergent data processing, and usage of neural networks, at the different levels of innovation process stages to reduce uncertainty and to facilitate networked designing of innovative products meeting the modern-day business environment requirements.

Keywords: AI Integration, Innovation process, Conceptual framework, Uncertainty, Supply Chain

ALGORITHM FOR OPTIMIZING TRUCK UTILIZATION USING RESIDUAL CAPACITIES

*Daniel Zöttl, Christoph Ecker, Sebastian Lumetzberger, Sebastian Schlund
Fraunhofer Austria Research GmbH, Theresianumgasse 7, 1040 Vienna, Austria*

ABSTRACT

Purpose: Average truck utilization is only 50-55 percent based on distance travelled. Furthermore, 25 percent of current truck trips are empty runs. These facts lead to increased emissions, more traffic and a waste of time and financial resources. The aim of this paper is to develop an algorithm for logistics service providers to optimize truck capacity utilization and to increase supply chain resilience by identifying, visualizing, and optimizing routes with available residual capacity.

Design/methodology/approach: The development is focused on a logic able to identify tours from a transport network, in which open transport orders can be integrated optimally. Available residual capacities in trucks are calculated based on master data, initial loaded and already delivered orders. Additionally, the distances between the stations of the initial tours and the pick-up/delivery point of the open transport order are calculated and integrated optimally into the existing tours to minimize the total distances travelled and maximize the truck utilization.

Findings: The developed optimization algorithm creates transparency and resilience in supply chain networks by merging customer and freight forwarding data in real time. This results in an integrated route optimization that allocates residual capacities of currently executed truck transports with suitable open transport orders to avoid empty runs and increase truck utilization.

Research limitations/implications (if applicable): Future research includes integrating real-time data sources into the algorithm to make prescriptive decisions. In addition, a suitable decision support system for truck dispatching is to be developed.

Practical implications (if applicable): The algorithm is evaluated by applying it to the transport network of a freight forwarder. It is shown that a significant contribution to the optimization of truck utilization can be made.

Originality/value: The novelty of this contribution is that the developed algorithm combines already running and distributed trucks and their real-time utilization with open transport orders, thereby making optimal use of residual capacities of the already running trucks.

Keywords: residual capacities, truck utilization, optimization algorithm, forwarder

BLOCKCHAIN TECHNOLOGY EMPOWERING DIGITAL PRODUCT PASSPORTS FOR SUSTAINABLE SUPPLY CHAIN MANAGEMENT: A CONCEPTUAL FRAMEWORK

Manos-Nikolaos Papadakis, Evangelia Kopanaki, Asterios Stroumpoulis*
University of Piraeus

ABSTRACT

Purpose: The European Union (EU) has recognized the need for efficient supply chain management and the adoption of sustainable practices in today's globalized world. To address these challenges, the EU has introduced the concept of "Digital Product Passports" (DPP) as a potential tool for promoting traceability, transparency, and sustainability throughout supply chains while enhancing waste management processes.

Therefore, the DPP is a novel project for the EU, academics and practitioners. The successful implementation of DPP relies on the integration of the new information technology, the Blockchain Technology (BT). Previous research has shown that this technology has potentials to revolutionize supply chain management, primarily due to its ability to enable transparency, traceability and accountability, essential resources for supporting the DPP and effectively managing product waste. Furthermore, the transparency and visibility provided by blockchain technology could enhance the legitimacy of digital products passports. This transparency can be further enhanced using global, mutually acceptable, standards that allow the unambiguous identification of the different stakeholders and traceable units of interest.

The purpose of this study is to propose BT and the use of global standards in conjunction to achieve an interoperable, immutable DPP implementation in the EU supply chain which can serve as an adoption model for other supply chains globally.

Design/methodology/approach: The authors have conducted an extensive literature review in order to develop the conceptual framework, which shows how BT empowers the DPP, leading to improved sustainable performance, better waste management, and the creation of social value within supply chains. By drawing upon the RBV, Legitimacy and Stakeholders' Theories, the proposed framework emphasizes the significance of transparency and traceability, which ultimately contributes to the creation of social value. BT's capabilities enable the DPP to provide verifiable information on product origin, lifecycle, and environmental impact, empowering companies to take informed decisions and consumers to make sustainable choices.

Findings: This study contributes to the literature review by offering insights into the integration of BT and DPP within supply chains, addressing the pressing need for sustainability and efficient waste management. The proposed conceptual framework serves as a foundational starting point for future research and real-world applications, promoting the adoption of sustainable and transparent practices. The study could create a starting point for the use and analysis of the above concepts, while its findings can be considered a base for future research based on real use case scenarios both to academics and practitioners.

Originality/value: The use of global standards in conjunction to achieve an interoperable, immutable DPP implementation in the EU which can serve as an adoption model for other supply chains globally.

Keywords: Blockchain Technology, Digital Product Passport, Supply Chain Management, Waste Management, Sustainability. Standards

CHALLENGES OF CIRCULAR SUPPLY CHAINS IN DEVELOPING COUNTRIES: THE EXAMPLE OF ZAMBIA

Mwanza B.G.¹, Magwenzi A.¹, Nanthakorn B.², Banomyong R.²

¹ *University of Zambia, Graduate School of Business, Zambia*

² *Thammasat University, Thammasat Business School, Thailand*

ABSTRACT

Purpose: In a global approach to reduce the use of natural resources, international conventions, protocols, and agreements were introduced. In implementing these international approaches, developing countries were facing challenges such as war, instability, and economic weakness. As a result, introducing sustainable strategies, such as circular supply chains, remain relatively immature compared to more developed regions. This paper explores the challenges in the implementation of circular supply chains in developing countries and investigates these challenges using the example of Zambia, a developing African country.

Design/methodology/approach: In the first phase, a literature review was conducted to evaluate, critique, and synthesize the challenges of circular supply chains in developing countries. The literature review covered research articles, reviews, and concept papers from the research databases Scopus, and Science Direct. Studies combining 'circular supply chain,' 'sustainable supply chains,' 'supply chains and circular economy,' and 'circular supply chains and challenges of implementation' and focussing on 'developing countries' were considered for review. In the second phase of this research, a comparative analysis was performed contrasting the findings in the implementation of circular supply chains in developing countries with today's circular supply chain strategies in Zambia in order to reflect implementation challenges.

Findings: This research maps challenges developing countries are facing in the implementation of circular supply chain strategies and demonstrates them using the example of Zambia. It provides recommendations to relevant groups of stakeholders both in the public and private sectors.

Research limitations: Performing a literature review limits findings to secondary sources, potentially influencing the timeliness of data in this fast-changing research area.

Practical implications: This research provides a basis for formulating policies and theoretical framework.

Originality/value: Circular supply chain strategies have been widely explored. This research provides additional insight into the status and specific challenges faced by developing countries in the implementation phase.

Keywords: Circular supply chains, Sustainability, Remanufacturing, Recycling, Developing countries, Zambia

CONSEQUENCES OF NATURAL GAS SHORTAGE ON SUPPLY CHAINS IN AUSTRIA

Sandra König¹, Michael Plasch², Carina Hochstrasser², Michael Herburger², Stefan Schauer¹

¹Austrian Institute of Technology, ²University of Applied Sciences Upper Austria

ABSTRACT

Purpose: A shortage of natural gas is currently one of the most pressing threats - during the Russia-Ukraine conflict-, and it is crucial to understand the impacts on national supply chains if import stops or any other severe shortage become a reality. It is essential to have a holistic view that identifies sectors or businesses that are most affected. Further, indirect consequences due to cascading effects in supply chains need to be investigated and understood.

Methodology: The natural gas dependency of supply chains in Austria is modelled from origin national interconnection hub to gas customers in the business context and visualized through a graph to increase awareness of interdependencies. Based on this graph, a simulation is designed that mimics the potential reaction in specific nodes of supply chain to a shortage.

Findings: The developed data set covers nodes, edges and entails characteristics based on natural gas usage (as a material source for production; for operation of machines or for heating) for an enhanced interpretation of the supply chain. The simulation allows to identify who is most strongly affected. Based on this analysis, actions are proposed that increase the resilience of the gas supply chain against shortages.

Research limitations: The study concerns a national and thus regional limited context. Although the simulation does not consider available storage volumes in the natural gas network, the interdependencies of sectors were drastically shown – irrespective of the gas usage.

Practical implications: The research evidently showed that there was insufficient data and information available for monitoring potential natural gas shortages and its effects on national supply chains at the state level.

Originality/value: A first step of a holistic overview of the natural gas supply chain in Austria is provided to raise awareness of existing dependencies. Simulations increased the understanding of the aftermath of a shortage to support existing best practices to protect infrastructures and the supply of businesses. Discussions with domain experts increased the validity of the theoretic approach.

Keywords: Impact estimation, Interdependencies, Simulation, Natural Gas Shortage, Supply Chain

CONSUMER BEHAVIOUR IN CIRCULAR FOOD SUPPLY CHAIN

Loh Hui Shan (HS, Loh); Lee Ming Han (MH, Lee); Maria Cecilia Rojas Lopez (M. C., Rojas Lopez)

School of Business, Singapore University of Social Sciences

ABSTRACT

Purpose: The objectives of this exploratory study are to understand the role of consumer behaviour in the circular economy to reduce food waste and identify alternatives to encourage consumers' contribution to the subject. The study is focused on Singapore, where the high population density and limited resources make the Circular Economy a key tool for reducing waste, improving resource management, and enhancing resource usage.

Design: Firstly, an extensive literature review was conducted to get insights on food waste, consumer behaviour, and the circular economy. Secondly, a comprehensive survey questionnaire was created and distributed via social media platforms to collect qualitative and quantitative data from potential respondents. The collected data was categorised by relevant topics and analysed using descriptive statistics. Based on findings, key recommendations are made.

Findings: Results indicate that Singapore residents are conscious of the impacts of food waste and are willing to take steps to reduce it. However, gaps in knowledge and practical approaches to achieving this goal were also identified. Raising awareness, encouraging appropriate behaviour, enabling sustainable behaviour, and collaborating with stakeholders are strategies proposed and discussed in this study to influence consumer behaviour towards the circular food supply chain in Singapore.

Research limitations: By increasing the pool of respondents and gathering target data for each recommendation presented, a detailed framework for measuring the impact of consumer behaviour and creating targeted measures in the local and international context could be outlined. Perspectives from other stakeholders in the food supply chain may also be explored in future studies.

Practical implications: By understanding the impact of consumer behaviour on the circular economy, policymakers and industry stakeholders can develop more targeted and effective strategies to reduce food waste and promote the adoption of circular economy principles. Identifying gaps in existing measures also presents an opportunity to refine current approaches and achieve better outcomes.

Value: Amidst the current push by several companies, consumers, and authorities to improve sustainability and optimise resource utilisation, this study presents insights on how the circular food supply chain can be leveraged towards these goals.

Keywords: Circular Economy, Consumer Behaviour, Food Waste Reduction, Resource Management, Singapore

DIGITAL TRANSFORMATION IN LOGISTICS: THE NECESSITY OF THE NEW AGE

Ezgi Dulun¹, Muhammed Enis Zorlu²

¹ Program Manager, Borusan Logistics

²Enterprise Architecture Manager, Borusan Logistics

ABSTRACT

Purpose: With the development of technology, change and transformation are now a given in any industry. It is common knowledge that utilizing information technology and good management are crucial for corporate success and creating a competitive advantage. Organizations may continue operating more quickly, more effectively, and competitively by providing a strategic framework for adopting digital advances and technological progress. The necessity of finding the correct balance between technological/digital efficiency and company innovation will be emphasized in this article. Additionally, it will go through how permitting safe innovation in response to the shifting demands of the commercial environment may help firms continue operating in a more rapid, effective, and competitive manner.

Design/methodology/approach: Our study intends to construct the architectural model of the job to be used for transformation utilizing the TOGAF architectural approach model and DDD (domain-driven design) as a guide. In our analysis of how to build a future journey by utilizing the existing applications/platforms in the company, we incorporate a logistics process that will ensure that every step in the supply chain is traceable and the logistics activities are automated.

Findings: Our findings include the absence of a workflow that can examine applications' processes holistically, the absence of a common language between the business unit and technology teams, the duplication of studies, and the inability to develop business processes because of the business execution's immaturity level.

Research limitations/implications (if applicable): It is a study where we aim to increase efficiency by using more innovative and technological solutions instead of conventional methods in logistics operations, to provide competitive advantage and to automate logistics processes.

Practical implications (if applicable): The foundation of our work is the development of a platform and procedure that will allow transportation functions to be managed from a single location while making use of global architectures and emerging technologies that can be used everywhere while maintaining a high level of security.

Originality/value: In this essay, we present the model of the requirement for an enterprise-wide technological and business-oriented transformation to occur simultaneously with a cultural shift toward greater security. By enabling a better understanding and efficient management of risks in transformation projects, this model raises the likelihood that projects will succeed.

Keywords: Digital Transformation, Logistics, Technology, Architecture, Culture

EFFECT OF PROCEDURES ON PORT ACCESSIBILITY AND SATISFACTION

Olivary John¹, Prof. Alfonse Dubi² and Dr. Renger Kanani³

¹Bandari College, Tanzania Ports Authority, ² & ³University of Dar Es Salaam

ABSTRACT

Purpose: This study assessed the influence of complexity of cargo clearance procedures on the relationship between port accessibility and customer satisfaction as constructs based on the empirical evidence drawn from Tanzania ports' operations.

Design/methodology/approach: Structured questionnaires were administered to 228 port stakeholders from the sample of 298 respondents drawn from a population of 1,325 agents using simple random sampling, from five selected Tanzania ports to obtain data necessary for hypotheses testing using Structural Equation Modelling through Smart PLS 3.0. The study adopted a positivism philosophy and deductive approach along with an explanatory design and quantitative method. The Resource-Based Theory (RBT) and Port Service Quality (PSQ) theories were used to operationalize the interactions of the three constructs. The study proceeded from the assumption that there has been no extensive research model that compounded the joint effects of constructs.

Findings: The results revealed that port accessibility has a positive significant impact on customer satisfaction while the moderated relationship has lower positive significant effects. Further, the findings of the Importance-Performance Matrix Analysis (IPMA) revealed that port accessibility has the highest levels of both importance and performance in predicting customer satisfaction. The study concludes with strong empirical confirmation that port accessibility positively influences customer satisfaction and expands the RBT and PSQ dimensions.

Practical implications: The results shed light on likely areas to be improved by Tanzania Ports Authority and other Stakeholders from both the public and private sectors in enhancing the positive satisfaction. The study findings have implications on relevant policies including The Ports Act 2004, National Transport and Trade Policies both of 2003, and the Agenda 2063 The Africa We Want.

Originality/value: This research pioneered in identifying dimensions of port resources and moderating effects of complexity of cargo clearance procedures and examined their impacts on customer satisfaction.

Keywords: Port accessibility, customer satisfaction, cargo clearance procedures, and port operations.

EMPTY CONTAINER REPOSITIONING USING FOLDABLE CONTAINERS IN LAND TRANSPORTATION: TRADE-OFF BETWEEN BUNDLED TIERS AND WAITING TIME

Koichi Shintani¹, Ken'ichiro Nagaiwa², Etsuko Nishimura³

¹School of Marine Science and Technology, Tokai University, Japan

²Department of Information Engineering, Kagoshima College, Japan

³Graduate School of Maritime Science, Kobe University, Japan

ABSTRACT

Purpose: This study examines how foldable container (FLD) design features affect truck operations for empty container repositioning. We investigate the impact of two factors: the number of tiers bundled (NT) and the waiting time (WT) for gathering empty containers (equivalent to NT). Minimizing empty movement is crucial as it requires the same management resources as transporting laden containers. FLDs can reduce required trucks for repositioning empty containers by folding and bundling them. However, the economic viability of FLDs may be influenced by WT.

Design/methodology/approach: This study employs a simulation approach to determine the potential reduction in required trucks through the use of FLDs, assuming a simple network in which empty containers are returned stochastically from customers to a single inland depot, assuming a simple network in which empty containers are returned stochastically from customers to a single inland depot. We evaluate the fixed-period departure method and the fixed-quantity departure method for truck departures from the inland depot to other locations.

Findings: Numerical experiments discovered a trade-off between the WT and the number of trucks. The results indicate that the fixed-quantity departure method for trucks is more efficient. Nevertheless, the superiority of this departure method is contingent on the interval at which empty containers arrive at the inland depot. Specifically, if the interval between the arrivals of empty containers falls below a certain threshold, there will be no significant difference between the departure methods' efficiencies.

Originality/value: This study clarified the relationship between the WT and the number of trucks required, which had not been investigated in previous works on FLDs. This study's findings could provide valuable insights for optimizing the use of FLDs to reduce the costs of empty container repositioning and the number of trucks needed.

Keywords: Maritime logistics, Container transportation, Empty container, Foldable container, Simulation

EXPLAINABLE AI APPROACH FOR IDENTIFYING CRITICAL FACTORS AFFECTING ON-TIME ARRIVAL OF TRUCKS IN LOGISTICS

Panupong Wanjantuk¹ and Ruth Banomyong²

*¹Department of Computer Engineering,
Khon Kaen University, Thailand*

*²Department of International Business, Logistics and Transport,
Thammasat Business School, Thammasat University, Thailand*

ABSTRACT

Purpose: Effective supply chain management depends on on-time delivery, and knowing what influences on-time arrival can help logistics organizations optimize their processes and improve customer satisfaction. This study explores the key factors that affect the on-time arrival of trucks in logistics operations using an explainable AI technique.

Design/methodology/approach: This study identifies the key factors that have a significant impact on the on-time arrival of trucks using explainable AI techniques and a large dataset made up of historical delivery records, current location, transportation distance, vehicle type, supplier, material shipped, vehicle state, destination state, and other relevant factors.

Findings: The research's conclusions provided clear understandings into the causes of delivery delays by shedding light on the relative significance and interplay of these factors.

Research limitations: The research may face limitations due to the availability and quality of data. Access to comprehensive and up-to-date datasets containing information on various factors that influence on-time arrival of trucks in logistics might be challenging. Insufficient or biased data can affect the accuracy and generalizability of the findings.

Practical implications The logistics sector will be significantly impacted by the results of the study. Logistics organizations may enhance their delivery schedules, manage resources more wisely, and put plans in place to reduce risks by developing a thorough grasp of the essential elements influencing on-time arrival. Cost reductions, increased operational effectiveness, and an overall improvement in logistics performance can result from this.

Originality/value: By particularly applying explainable AI techniques to the logistics context and concentrating on the on-time arrival of trucks, this research makes a contribution to the area. The proposed technique stands out for its transparency and interpretability, guaranteeing that stakeholders can understand the model's decision-making process and develop trust in AI-driven logistics solutions.

Keywords: Explainable AI, On-Time Arrival, Trucks, Logistics, Delivery Delays, Transparent Insights, Operational Efficiency.

ENVIRONMENTAL SUSTAINABILITY IN GLOBAL LOGISTICS HUBS

Sandy Hassan¹, David B. Grant², Sarah Shaw³

¹Northumbria University, ²Hanken School of Economics, ³Hull University

ABSTRACT

Purpose: Global Logistics Hubs (GLHs) play a critical role in facilitating global trade flows due to their strategic locations and supply chain supporting functions, and in providing regional benefits via increased foreign direct investment and enhanced employment and education. However, there is limited research on GLHs generally and their environmental sustainability in particular. This paper explored the latter to improve understanding of GLH environmental performance for academia and practice.

Design/methodology/approach: A qualitative research approach using stakeholder theory consisted of four case studies in Rotterdam, Antwerp, Liverpool and the Suez Canal Economic Zone GLHs. Thirty-three interviews were conducted across three stakeholder levels: GLH port authority/operator, users including freight forwarders and logistics companies, and community stakeholders including government agencies/trade associations. Data was coded in NVivo and thematically analysed..

Findings: Respondents considered governments and port authorities should be responsible for setting out, monitoring, and improving environmental sustainability due to their oversight, connections, power, and authority. The most common GLH environmental impacts noted were greenhouse gas emissions, water and air pollution, waste generation, biodiversity and ecosystem impacts, energy and water consumption and noise, supporting existing literature for individual stakeholder sectors. However, interactions among them are fragmented, suggesting a more standardized evaluation approach be used.

Research limitations/implications (if applicable): This study focused on a limited sample of four GLHs in Europe/North Africa and while findings are transferable, they are not necessarily generalizable. This study also focused on maritime GLHs, however GLHs are also reliant on airports, rail, and road for global cargo access. Future research should investigate other global contexts, including air and land based GLHs

Originality/value: An integrated GLH stakeholder framework, comprising 15 environmental measures and 51 individual environmental indicators, was developed to inform further research and practitioner adoption. This framework can be by GLH owners and developers, policymakers and governments, and intergovernmental organizations to evaluate and improve GLH environmental performance

Keywords: Global Logistics Hubs, Environmental sustainability, Stakeholder Theory, Case Study, Europe, North Africa

EXPLORING SUSTAINABILITY-RELATED ISSUES IN HOTEL BUSINESS: A CASE OF THAI PUBLIC COMPANIES

Siravat Teerasoponpong, Sainatee Chernbumroong, Varattaya Jangkrajarn**
Department of Management and Entrepreneurship,
Faculty of Business Administration, Chiang Mai University,
Chiang Mai, Thailand.

ABSTRACT

Purpose – This paper aims to analyze and compare the inclusion of sustainable development issues in the hotel business through the companies' annual and sustainability reports. Two groups of hotel operators, the group listed in the Thailand Sustainability Index (THSI) and the Non-THSI listed, were used for comparison.

Design/Methodology/Approach – The analysis of sustainable development issues in the hotel business was conducted by utilization of the text analysis technique. The analysis divides into two parts. First, the sustainability-related keywords were extracted from existing research. The keywords are to be used as search keywords in the text analysis. In text analysis, the data used in this study comes from published annual reports and sustainability reports of the public companies in a service sector listed in the Stock Exchange of Thailand (SET). The search keywords are then used to match the keywords found in the reports in terms of a cooccurrence between a pair of keywords. The frequency of keywords' cooccurrence should reflect the focused areas of sustainable development in the hotel business.

Findings - The analysis reveals sustainable-related issues in the hotel business. The frequency of associated keywords also indicates the difference in the degree of the inclusion of sustainability issues among hotel operators.

Research limitations/implication - The approach presented in this research can be applied to different areas of study using a different set of data. Nonetheless, the availability and consistency of the input data are to be concerned.

Practical implications – In the context of the hotel business, understanding the status and progress of sustainable development can lead to a proper direction of sustainable development. A redundant investment can be avoided. Moreover, a benchmark among the same industry is also possible and can be beneficial to the formulation of business strategy.

Original/value – This paper proposes a combination of techniques, bibliometric analysis, and text analysis, and utilizes both academic and business knowledge to comprehend the current situation of sustainability-related issues in Thailand's hotel business.

Keywords Hotel industry, Sustainability, Bibliometric analysis, Text analysis, Occurrence analysis

GEN-Z CUSTOMERS' SERVICE PREFERENCE FOR EXPRESS DELIVERY ENTERPRISES: A CASE STUDY OF CHINA

V. Cherapanukorn, K. Wannagoat, D. Wu

College of Arts, Media and Technology, Chiang Mai University

ABSTRACT

Purpose: The study aims to identify the decision-making factors of Gen-Z customers towards a service of five different express delivery enterprises, which includes SF, ZTO, YUNDA, YTO and STO, based on TOPSIS method.

Design/methodology/approach: As a pilot study, this research was conducted by interview 24 Gen-Z customers who are the students at Yunnan University during the year 2023 by adopting the TOPSIS technique to analysis the customer service preferable factor towards the express delivery enterprise's service.

Findings: The results show that Timeliness is the most important factor that influences on customer satisfaction for the express company's service, following by security, convenience, price, customer service and courier. Moreover, the private express enterprises evaluation result based on TOPSIS method show as follows: SF (0.810), ZTO (0.404), YUNDA (0.269), YTO (0.187) and STO (0.183).

Research limitations/implications: As a pilot study and a limitation of time, there is a small sample size of the interview group. Also, the data was collected with the students from Yunnan University only. Therefore, the further study should concern to improve its validity by expanding the sample size for the study in future.

Practical implications: The express delivery enterprise may apply the suggestions to improve its services for satisfying this customer group's preferable and requirements.

Originality/value: There is limited study focusing on Gen-Z satisfaction towards the service of express delivery company. This customer group will become the largest and most important market in the future. The results show the suggestion factors that help the shopping company to improve their service and competitive advantages.

Keywords: Express company, Customer preference, Gen Z, China, TOPSIS

HORIZONTAL LOGISTICS COLLABORATION IN AGRI-FOOD SUPPLY CHAINS: AN ANALYSIS OF MOTIVES AND ENABLERS

Behzad Behdani

*USN School of Business, Department of Business, Strategy and Political Science,
Univer-sity of South-Eastern Norway*

ABSTRACT

Purpose: This research aims to gain insight into the motives and enablers influencing the feasibility of Horizontal Logistics Collaboration (HLC) in the agri-food industry.

Design/methodology/approach: The main methodology in this study is developing a survey –based on the theoretical framework derived from the existing literature. The survey is distributed among food logistics/SC experts (including shippers and third-party logistics companies). Additionally, statistical analysis is performed to get insight into the relevance of motives/enablers for horizontal collaboration in food chains and the factors that influence that.

Findings and originality: The survey analysis shows that the “cost-oriented motives” received the strongest support, potentially caused by low-profit margins and fierce price competition in the food and logistics sectors. In contrast, the “market-oriented motives” – like access to new market areas via collaboration- had a lower evaluation. For enablers of collaboration, “Incentive alignment” has received the strongest support, which implies the necessity of designing fair incentive mechanisms for horizontal collaboration. Besides, the strong support for “compatibility” – including “product compatibility” and “logistics compatibility” - reveals the importance of partner selection for a feasible collaboration in food chains. Regarding company size, larger companies valued “decision synchronization” and “compatibility” more as enabling factors. Due to the common power asymmetry in the food industry, SMEs are forced to be flexible and adaptive in a collaborative relationship. So, they are willing to look into more possibilities for selecting partners. Also, SMEs underpinned the “size similarity” as an enabler, revealing their concerns about not being heard in a power-imbalanced relationship. Finally, larger companies prefer to make a formal setting (like a contract) as the governing mechanism, while SMEs prefer to collaborate in a more informal trust-based manner.

Research/Practical implications: The findings provide the theoretical insight and practical guideline for practitioners to understand the critical factors and achieve feasible/successful operations of HLC in the food industry.

Keywords: Horizontal Logistics Collaboration, Food Supply Chains, Enablers.

IDENTIFICATION OF FACTORS INFLUENCING COST AND BENEFIT ASPECTS OF CROSS-COMPANY DATA EXCHANGE USING THE EXAMPLE OF THE STEEL INDUSTRY

Nikita Fjodorovs, Alan Gütermann, Tobias Wagner
Institute for Industrial Management (FIR) at RWTH Aachen University,
Campus-Boulevard 55, 52074 Aachen, Germany*

ABSTRACT

Purpose: In the last decade, enterprises realized the high value of data and learned to successfully utilize it for internal processes and business models, and they are trying to find more ways to acquire relevant data. Since enterprises are part of complex networks, the data from their partners and customers can also be beneficial: from adjusting the demand and supply to planning production and aligning capacities. One such example is adaptive process control: detailed material data from a supplier can be used to adjust process parameters in their production. This approach may be especially beneficial for the steel industry, as there is a possibility to adjust the material properties by changing the speed, force, or temperature in their own production processes. However, such an approach requires tight collaboration, e.g., regarding improving IT infrastructure, ensuring data acquisition and transfer and most importantly, the utilization of such data.

Approach: First, through literature research potential cost and benefit aspects regarding data exchange were identified. Second, conditions for the influence factors were defined. This determines which (qualitative) characteristics they must fulfil in order to be considered as such. On the one hand, there should be minimal overlaps of influence between the factors, and, on the other hand, the influencing factors should have a direct impact on the cost and benefit aspects. Finally, a qualitative analysis was conducted to determine the characteristics of the cost and benefit aspects under the influence of the factors.

Findings: 18 cost aspects in 6 categories as well as 14 benefit aspects in 3 categories were identified. 7 influence factors in 3 dimensions (strategy, technology, product) were determined. Additionally, an analysis, how each factor influences the cost and benefit aspects (only major influences will be described due to the page limit)

Originality/value: Cost-benefit-analysis is only useful on a specific use case. Trying to create a general analysis for a whole industry leads to high ranges for the cost and benefit aspects. The results of this paper help companies to understand, on which influence factors should they focus in order to either decrease costs or increase benefits of cross-company data exchange.

Keywords: Cross-company data exchange, intercompany data exchange, supply chain data management, cost-benefit-analysis, steel industry

INVENTORY MANAGEMENT AND PRODUCT DEMAND PLANNING: CASE STUDY BAKERY PRODUCT FACTORY

**Korrakot Y. Tippayawong^{1,2}, Saimock Duangchan¹, Pattareeya Yothin¹,
Prim Fongsamootr¹**

¹ Department of Industrial Engineering, Faculty of Engineering, Chiang Mai University

² Supply Chain and Engineering Management Research Unit, Chiang Mai University

ABSTRACT

Purpose: AMZAP Group Company Limited is engaged in the agricultural product processing business, focusing on food preservation and bakery products. Among its product portfolio, the Memorize brownie has gained widespread recognition. The company recognizes the need to enhance and optimize its factory and store inventory efficiency to serve the market's demands effectively. The lack of accurate knowledge regarding the appropriate quantities and timings for deliveries has resulted in instances of raw material shortages or excessive ordering, leading to lost customers and unnecessary costs. To address these challenges, the company has embarked on a research project to improve its inventory system, including the raw material and ready-made goods inventory. The project aims to facilitate efficient inventory checks, integrating forecasting theory to anticipate demand quantities for each branch accurately.

Design/methodology/approach: This study adopts a comprehensive analytical approach, integrating the principles of Design and Plant Layout, Inventory Management, Production Planning, and Scheduling Theory. To optimize and determine the factory inventory layout, Economic Order Quantity (EOQ), and Reorder Point (ROP) for raw materials and ready-made goods within the inventory, a range of tools are employed, including ABC Classification analysis, Rectilinear, FIFO, and FEFO principles. Additionally, Microsoft Excel analyzes sales history and forecasts future plans.

Findings: The outcomes of this study comprise comprehensive delivery plans for each branch based on sales forecast data analysis. Furthermore, the study provides two inventory layout diagrams, offering practical guidance to the company's operational endeavors.

Research limitations/implications: In order to gather relevant data for analysis, this study collects information from five branches, namely AQUA, Ladprao, Ayutthaya, Central Festival Chiang Mai, and Nimmanhaemin, focusing on three key products: Brownie Shot, Original Brownie, and Chocolate Nama dark and mild.

Originality/value: In conclusion, by adopting the analytical methodologies and tools, this study presents valuable insights and actionable recommendations to enhance inventory efficiency and effectively meet market demands.

Keywords: **Keywords:** Inventory Management, Demand Forecasting and Planning, Bakery Product

MITIGATING SUPPLIER VULNERABILITIES TO IMPROVE SUPPLY CHAIN RESILIENCE

Narath Bhusiri, Paitoon Varadejsatitwong, Puthipong Julagasigorn, Ruth Banomyong

Centre of Excellence in Connectivity, Thammasat Business School, Thammasat University, Thailand

ABSTRACT

Purpose: After the shocks from the coronavirus pandemic were over, supply chain resilience has been proposed by experts to help businesses and their supply chains to better prepare, better respond, and better recover from the next disruptions within short timeframe. All stakeholders along the chain are equally vital to build a resilient supply chain. To the best of the authors' knowledge, however, almost all studies have built the supply chain resilience through the lens of buyers, where numerous vulnerabilities around the buyers including suppliers as sources of supply have been pinpointed. Resilient initiatives have then been strategised for buyers to eliminate vulnerabilities in their networks (e.g. multi-sourcing and diversifying supplier base). Despite the significant improvement on resilience, these initiatives do not create business-friendly environment with suppliers. The aims of the paper are to look into increasing the resilience capability from the perspective of suppliers. Vulnerabilities of suppliers are analysed, identified, and alleviated through the proposed framework. This is to mitigate supply chain risks created by suppliers. This is to ensure building the resilient supply chain while also maintaining the supplier businesses.

Design/methodology/approach: A case of cross-border supply chain from Thailand to Laos is chosen for this action research study. International trade from Thailand are crucial to drive Laos economic growth and uplift the living standards of population. The research team works with key practitioners in developing the framework for analysing and identifying vulnerabilities of Thai suppliers. Then, the developed framework is validated with actual cross-border supply chains. Mitigation action plans are recommended to increase supplier resilience capacity.

Findings: The developed framework is able to identify vulnerabilities of Thai suppliers. Mitigating supplier vulnerabilities improve reliability and resilience capacity of Thai suppliers. Cross-border supply chain risks can eventually be mitigated.

Originality/value: This paper is among the first to put efforts in improving the supply chain resilience from the perspective of suppliers. Mitigating supplier vulnerabilities can reduce cross-border supply chain risks. Supply chain can be more resilient on one hand. Supplier can maintain their businesses on the other hand.

Keywords: Supplier vulnerability, Supply chain resilience, Risk mitigation, Risk identification, Cross-border supply chain

MORAL DILEMMA FACING AUTONOMOUS VEHICLES: INSIGHTS FROM STATED PREFERENCE SURVEY IN THE CONTEXT OF SINGAPORE

Siying Zhu, Shen Loong Walt Tay, Cheng-Hsien Hsieh

School of Business, Singapore University of Social Sciences, Singapore 599494

ABSTRACT

Purpose: With the rapid development of autonomous vehicles, the transportation industry is experiencing significant changes in recent years. Level 5 autonomous vehicles possess the highest level of vehicle automation, where drivers' intervention is no longer needed. Nevertheless, the moral dilemma arises accordingly as the autonomous vehicle needs to control and regulate its own driving pattern and make the optimal decision when it is involved in any traffic accident. This preliminary study explores the perception of moral issues from potential autonomous vehicle users and how the perception affects the design of autonomous vehicles facing moral dilemmas.

Design/methodology/approach: In this study, we conduct a stated preference survey to explore the preferences of prospective users regarding different decision-making models in the context of Singapore when they are presented with moral dilemma situations involving Level 5 autonomous vehicles, where descriptive analysis and discriminant analysis are utilised to analyse the survey results.

Findings: Analytical results indicate that different levels of expectations for autonomous vehicles lead to stronger beliefs in the artificial intelligence (A.I.) algorithms handling moral dilemmas. However, gender and respondents' hazard perception do not significantly influence the attitudes of respondents towards the development of decision-making models for autonomous vehicles. The results also show that rebates in insurance premiums and legal liability were effective in engendering a change in respondents' preferences towards a moral model developed by A.I. as the autonomous vehicle decision-making model. Moreover, two groups regarding the expectation of autonomous vehicles are identified based on the discriminant analysis.

Research limitations/implications (if applicable): Level 5 autonomous vehicles are not yet reached marketability in Singapore. A stated preference survey, instead of a revealed preference survey, was thus employed, in which respondents might overstate their valuation or expectation of a particular good, service or outcome.

Originality/value: The results of this study can provide policy implications to transportation planners and manufacturers in developing the decision-making model when Level 5 autonomous vehicles face moral dilemmas.

Keywords: Level 5 autonomous vehicle, Moral dilemma situations, Stated preference survey, Discriminant analysis, Policy implications

PERFORMANCE IMPROVEMENT OF COFFEE BEAN PRODUCTION BY LEAN TECHNIQUE

Wassanai Wattanutchariya* and Yosita Phanluck
*Advanced Technology and Innovation Management
for Creative Economy Research Group,
Department of Industrial Engineering, Faculty of Engineering,
Chiang Mai University, Chiang Mai, Thailand*

ABSTRACT

Purpose: This project aims to increase the efficiency of the coffee bean processing process through lean techniques.

Design/methodology/approach: Lean technique by analyzing and recommending ways to optimize the production process according to the study of Flow Process Chart to use Motion and Time Study analysis and evaluate process efficiency with Value Stream Mapping (VSM), then analyze the problem or waste condition. Including improving work with the ECRS principle and compare the results of improving the production process.

Findings: The results of the research were able to improve non-value-added but necessary operations in the production process in 3 steps, resulting in a 10.02% increase in value-generating activities, including a reduction in time by 1.79 minutes, representing 13.57%. The distance was reduced by 2,190.25 meters, representing 96.31%, resulting in an increase in the efficiency of the coffee bean processing process.

Research limitations/implications (if applicable): -

Practical implications (if applicable): -

Originality/value: This project can be implemented in other production line to improve the efficiency of the processing due to the reduction of non-value added operation using Lean technique.

Keywords: Coffee Processing, Lean, VSM, ECRS, Motion and time study, Performance improvement

RESILIENT SUPPLIER RELATIONSHIP MANAGEMENT FRAMEWORK FOR HUMANITARIAN ORGANISATION

Narath Bhusiri¹, Puthipong Julagasigorn², Paitoon Varadejsatitwong³, Ruth Banomyong⁴, and Nirpa Dhami⁵

^{1,2,3,4}Centre of Excellence in Connectivity, Thammasat Business School, Thammasat University, Thailand

⁵World Vision International, Nepal

ABSTRACT

Purpose: Conducting humanitarian operations, especially in the case of long-term development aid programmes, require humanitarian organisations to search, engage, source, procure, negotiate, contract, and purchase large amount of relief commodities from suppliers annually. Precise engagement approaches with suppliers play a vital role in ensuring supply consistency. With more frequency and larger magnitude of disasters in addition to a new global economic recession and other uncertainties, supply disruptions can more easily take place, causing interrupted humanitarian supply chains and ultimately more suffering and decease of beneficiaries. Thus, humanitarian organisations are required to investigate new ways of enhancing their upstream supply chains to be able to cope with the disruptions. This paper aims at improving procurement strategies and engagement approaches towards suppliers. In particular, a comprehensive supplier relationship management framework is proposed for humanitarian organisation to better understand the importance of different suppliers, better manage and streamline relationships with suppliers, and better evaluate supplier performances.

Design/methodology/approach: Action research is employed to adapt the supplier relationship management framework proposed in commercial supply chain practice to the humanitarian supply chain context. The research team works with humanitarian supply chain experts to ensure the feasibility and applicability of the adapted framework.

Findings: The adapted framework can be used as a guideline to streamline and implement humanitarian supply chain strategies, action plans, and processes for better supplier relationships and more resilient supply chain.

Originality/value: The adapted framework is among the first tool to provide a comprehensive principle for humanitarian organisations to increase their upstream supply chain resilience. The adapted framework covers procurement and supplier categorisation, relationship implementation guidelines as well as supplier performance metrics.

Keywords: Humanitarian supply chain, Supply chain resilience, Supplier categorisation, Supplier performance metric, Supplier relationship management

SMART CITY LOGISTICS FOR SUSTAINABILITY: A CASE STUDY OF SUSTAINABLE CITY LOGISTICS IN HELSINKI

Helleke Heikkinen 1, Anna Aminoff 2
Hanken School of Economics, Finland*

ABSTRACT

Purpose: There is an increased need for more sustainable city logistics solutions. Challenges like global warming has made city actors increasingly aware of their role in finding sustainable city logistics solutions. The goal of this study is to explore the development of sustainable city logistics solutions from a city-internal perspective, utilizing technological frames as a lens.

Approach: A single case study methodology, investigating various actors in the city of Helsinki, was taken. Interviews and secondary data were used, and respondents included city department officials responsible for traffic, environment, and business development as well as regional development companies and programs running last mile and urban development pilots.

Findings: Based on the reports and interviews, we observed that in general, Helsinki city has a clear innovation and technology emphasis pertaining to sustainable city logistics. However, at the same time a fragmentation of efforts and a lack of cohesion is present observed in the discrepancy between the importance of the overall goal of carbon neutrality and anchoring sustainable city logistics solutions to it through actions. The heightened emphasis on innovation to reach city logistics sustainability may result in a more passive role for the city.

Practical implications: This research offers novel insights for policy guidelines for cities and company managers engaged with city logistics. The study can help in guiding development of sustainable city logistics solutions.

Originality/value: The research contributes to a better understanding of the role and influence of the internal city actors on sustainable city logistics development. The technological frame perspective provides a better understanding of how internal city actors, and their activities are aligned and how potential incongruence in goals is manifested.

Keywords: City logistics, sustainability, innovation, actors, technological frames

SUPPLY CHAIN ASSESSMENT AND ALIGNMENT FOR SPECIAL ECONOMIC DEVELOPMENT ZONE

Varattaya Jangkrajarn¹, Apichat Sopadang^{2,3}, Prim Fongsamootr^{2,3}, Anuwat Boonprasope^{2,3}, and Sakgsem Ramingwong^{2,3}*

¹Department of Management and Entrepreneurship, Chiang Mai University Business School, Chiang Mai University – Thailand

²Department of Industrial Engineering, Faculty of Engineering, Chiang Mai University – Thailand

³Supply Chain and Engineering Management Research Unit, Chiang Mai University - Thailand

ABSTRACT

Purpose: The paper investigates the supply chain alignment for Northern Economic Corridor (NEC) as a rising special economic development zone in Thailand.

Design/methodology/approach: The paper assesses NEC using concepts of SEZ Competitiveness Model to analyze the demand and supply within the scope using Triple Helix model.

Findings: There are differences in targeting clusters in areas of interest. This is suggestive for devising promotion and support measures by government.

Originality/value: The finding will be used as input for developing NEC master plan.

Keywords: Special Economic Zone (SEZ), Northern Economic Corridor (NEC), BCG Economy

SUSTAINABILITY OF SUPPLY CHAINS FOR ELECTRIC VEHICLES

*Fernandez, Thomas E. and Kalniev, M.
University of the Thai Chamber of Commerce*

ABSTRACT

Purpose: The purpose of this paper is to evaluate the sustainability of chain chains for electric vehicles (EVs).

Design/methodology/approach: This is a conceptual paper. Academic literature and – due to the novelty of the product evaluated – articles from reputed journalistic sources are analysed.

Findings: While EVs hardly pollute the air during operation, they are advertised as environmentally friendly and ethically desirable. However, there are still problems to be solved in the supply chain, from the origin of raw materials (mining of cobalt and of rare earths) to the reuse and recycle steps. The three P's of sustainability are People (society), Planet (environment) and Profit (companies need to make profit, otherwise they cannot exist much longer and are therefore not sustainable), and problems with all three have been found.

Research limitations/implications: Companies tend to be tight-lipped about sustainability problems in their EV supply chains, because “being environmentally friendly” is their main marketing strategy, so the reliability of some sources is questionable. The author tries to compensate this by using sources from different sides of the opinion spectrum. Futhermore, this research is limited to battery-electric passenger cars (BEV), not plug-in hybrids (PHEV), hybrids, or hydrogen-powered vehicles.

Practical implications: Awareness of sustainability problems in the EV supply chains should be improved, so that companies and governments invest more into new technologies to improve the production in terms of societal and environmental impact, which the added benefit of increasing profits for the companies.

Originality/value: Improvement of sustainability will improve the value of EVs to the three P's, from which society at large, the environment and lastly also the producers of EVs will benefit.

Keywords: Sustainability, supply chains, electric vehicles.

THE ATTITUDE OF THAI TOURISTS TOWARDS GREEN LOGISTICS

Sainatee Chernbumroong, Siravat Teerasoponpong, Varattaya Jangkrajarn**
Department of Management and Entrepreneurship,
Faculty of Business Administration, Chiang Mai University,
Chiang Mai, Thailand

ABSTRACT

Purpose: This paper is aim to proposal conceptual framework for the investigation of the usage of green logistics and green transportation in tourism context.

Design/Methodology/Approach: The paper review literature in the field of green logistics, green transportation, especially in tourism context. It adopted physiological concept as it is believed that knowledge, attitude, and practice could encourage the usage of green logistics and green transportations.

Findings: From the literature review, the paper provides the conceptual framework. It reveals the linkage between green logistics, green transportations and knowledge, attitude and practice.

Original/value: The findings can be used to investigate link between green logistics, green transportations and knowledge, attitude and practice. It could lead to the development of proper policies to encourage the usage of green logistics and green transportations.

Keywords: Green Logistics, Green Transportations, Attitude, Tourism

THE CIRCULAR ECONOMY CONUNDRUM: BARRIERS, ENABLERS, AND TENSIONS

Lisa M. Ellram¹, Sarah Schiffling², Helleke Heikkinen², Stina Lundin³, John Kibe Munyoro², Anna Zhuravleva²

¹ Farmer School of Business, Miami University, Oxford, Ohio, USA

² HUMLOG Institute, Hanken School of Economics, Helsinki, Finland

³ Department of Technology Management & Economics, Chalmers University of Technology, Gothenburg, Sweden

ABSTRACT

Purpose: This research aims to investigate the barriers, enablers, and tensions evident in implementing circular economy (CE) practices. By exploring arising paradoxes and their implications, the study contributes to a better understanding of CE implementation and provides insights into a contested concept.

Design/methodology/approach: The study follows a qualitative research approach, employing a theory elaboration framework to analyse seven case studies representing different CE practices in a range of industries and geographical contexts. Primary data is collected through interviews and supplemented with document analysis. Proposition development is based on paradox theory and existing literature.

Findings: Findings reveal recurring tensions between environmental and financial/social objectives and highlight the paradoxical tensions inherent in the most effective practice: refuse. The study identifies the importance of efficiency-based practices such as rethinking, reducing, and reusing. The applicability of repair, refurbish, and remanufacture practices varies depending on the product type, while repurposing and recycling are integral to CE. The significance of incorporating return logistics into the CE business model to ensure the viability of product return systems is explored.

Research limitations/implications: The study highlights the tensions and challenges faced in CE implementation through the lens of paradox theory.

Practical implications: The research emphasises the necessity of a mindset shift from a linear economy to CE but acknowledges the inherent tensions. Insights from this study can guide practitioners in navigating these tensions and stresses the importance of encouraging reduced consumption.

Originality/value: This research contributes to the limited empirical evidence on CE practices and the key challenges hindering CE implementation. The study's originality lies in its comprehensive analysis of tensions and its exploration of CE practices across diverse product and service contexts using a paradox theory lens.

Keywords: Circular economy, Paradox theory, Sustainability, Supply chain management, Reverse logistics

THE KEY DRIVERS AND BARRIERS IN THE ADOPTION OF MEDICATION DISPENSING TECHNOLOGY

Ganda Boonsothonsatit ¹, Rardchawadee Silapunt ², Salinee Choowitsakunlert², Wirachchaya Chanpuypetch ³, Kamol Kaemarungsi ⁴, Nilubon Chonsawat ^{5*}

¹ Graduate School of Management and Innovation, King Mongkut's University of Technology Thonburi

² Electronic and Telecommunication Engineering, King Mongkut's University of Technology Thonburi

³ College of Maritime Studies and Management, Chiang Mai University

⁴ National Electronics and Computer Technology Center, National Science and Technology Development Agency, Thailand

⁵ Logistics Innovation research center under Graduate School of Management and Innovation, King Mongkut's University of Technology Thonburi

ABSTRACT

Purpose - This research aims to identify the key driver and barriers that influence the adoption of medication dispensing technology. The study seeks to contribute to inform the seamless integration of healthcare technology into the fabric of modern medical practices.

Design/methodology/approach - This research employs an interview approach. Qualitative data is gathered through semi-structured interviews with healthcare stakeholders.

Findings - The findings reveal a complex interplay of key driver and barriers influencing medication dispensing technology adoption. Clinical benefits emerge as a primary driver, with healthcare professionals emphasizing improved patient outcomes.

Research limitations/implications - Limitations of this research are potential participant response only conceptual framework of key drivers and barriers of sample size, and generalizability constraints. The research primarily focuses on specific Thai healthcare.

Practical implications - The research findings offer valuable insights for healthcare stakeholders. Organizations can leverage the understanding of influencing factors to develop tailored adoption strategies. Healthcare providers can better navigate the complexities of technology integration and can refine their offerings to align with healthcare needs.

Originality/value - This research contributes to the field by comprehensively analyzing the multifaceted key driver and barriers that impact medication dispensing technology adoption. It offers a nuanced understanding of stakeholders' complex decision-making processes, contributing to healthcare technology adoption.

Keywords – drivers, barriers, healthcare, medication dispensing, technology



VEGA 20

Vega Twenty Co., Ltd.

TITAN 20

Titan Twenty Co., Ltd.

ORION 20

Orion Twenty Co., Ltd.

With more than 20 years of professional experience in Oil Trading Business, Sea Oil Public Company Limited and its subsidiaries (SEA OIL) have become an expert in Oil Trading business and constantly provide high-quality services and products. Currently, we have entered into three areas of business which are Oil Trading Business, Catering & Supply Management, and Exploration & Production as SEA OIL aims to be the leading full service provider in Energy industry under Good governance management with responsibility to all stakeholders, including society community and environment.



88 Soi Bangna-trad 30, Debaratna Road, Bangna, Bangkok 10260
Tel: +66-2398-9850-1 Fax: +66-2398-9852
Website: www.seaoilthailand.com



One WICE One Network



Headquarter
in Thailand



Singapore



Malaysia



China



Hongkong

WICE Group operates its business responsibly, transparently, accountably, fairly, ethically and with due regard to all of its stakeholders by adhering to the principles of good corporate governance.

We Deliver Values and Smart Solutions

LGX LaemChabang
Green Express

From LaemChabang direct to Customers

Shang Sing Hong

Daily Air Consolidation
Shanghai Singapore Hongkong

WESA

WICE Emirate Sea Air
Cost Saving, Time Certainly

US D2D

Door - to - Door
Customized Destination



Choose our Green Solutions
Choose your Greenery Logistics





PRIMA MARINE
PUBLIC COMPANY LIMITED

www.primamarine.co.th

**A LEADING
INTEGRATED
MARINE TRANSPORT
BUSINESS**



We are a full-service provider in the marine transport industry to include integrated ship management and also specialize in the storage of crude oil, petroleum products, semi-petroleum products and liquefied petroleum gas.

Our Businesses:

- Trading Business • Domestic Trading Business
- International Trading Business • Floating Storage Unit (FSU) Business
- Offshore Vessel Business • Ship Management Business