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ON LOGISTICS & TRANSPORT 2018

ABSTRACT PROCEEDINGS
**SUPPLY CHAIN TRANSFORMATION
IN THE DIGITAL ECONOMY**



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OKINAWAKEN SHICHOSON JICHI HALL
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INTRODUCTION

This is the 10th international conference organised by the Centre for Logistics Research at Thammasat Business School, Thammasat University and the Excellence Centre in Logistics and Supply Chain Management, Chiang Mai University. This is major event for researchers in transport, logistics, supply chain and value chain management especially in the Asia Pacific region. This year's event in Okinawa (Japan), is a continuation of past successful conferences held in Chiang Mai (Thailand), 2009; Queenstown (New Zealand), 2010; Malé (Maldives), 2011; Chiang Mai (Thailand), 2012; Kyoto (Japan), 2013; Kuala Lumpur (Malaysia), 2014; Lyon (France), 2015; Singapore, 2016 and Bangkok (Thailand), 2017. This year's event is held during November 15th to 16th, 2018 and is hosted by The University of Marketing and Distribution Science based in Kobe, Japan.

Under the theme of “**Supply Chain Transformation in the Digital Economy**”, 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

The conference best paper will be invited and considered for publication in the International Journal of Logistics Research and Applications.

WELCOME ADDRESS FROM THE CONFERENCE CHAIRS

On behalf of the organizing committee, we would like to welcome all participants to the 10th International Conference on Logistics and Transport (ICLT2018). It has been 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 "Supply Chain Transformation in the Digital Economy". This highlights the role of information technology in the ever-evolving supply chain practices and its endless economic possibilities in the current digitalisation era. "Supply Chain Transformation in the Digital Economy" 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 harmonise these subtle changes between supply chain members remains a critical issue.

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 CPL Group (Public) Co. Ltd who have supported us through the years. This year we welcome the support of Cabinet Office of Okinawa Development, Ryuku Kaiun Kaisha and Nichirei Logistics Group Inc.

We also apologise in advance if there are any difficulties you may encounter while participating the conference. 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 CHAIR

As host of organizing committee, we would like to welcome all participants to the 10th International Conference on Logistics and Transport (ICLT 2018, Okinawa).

We are pleased to be able to welcome those of you that have been with us for some time now as well as those of you who are new to our group. Today marks our 10th annual conference and we are very proud to be able to host this memorable conference today here at Okinawa with all of you.

Your strong support and active participation have made the ICLT 2018 an excellent event. We have many papers and many people registered. The quality of programs is world –top class, and the spectrum of topics is very current and broad.

I would like to express my gratitude to all of you who so generously helped us make this event come together smoothly.

Fortunately, local organization and enterprise also support our program. We collaborate program with Okinawa Trade Association and we are able to set up special session for them on the first day.

Okinawa is located at the Japanese southernmost tip and is the strong relationship with Asia for a long time. So Okinawa has own unique culture. We would like to hope all participants enjoy Okinawa culture as well as academic conference.

We prepare conference tour on the 2nd day after conference, we enjoy visiting Cold warehouse and also Awamori factory for helping your experience in Okinawa.

We would like to express our thanks all presenters, reviewers and keynote speakers for their contribution. We also apologize in advance if there are any difficulties you may encounter while participating the conference. Finally, we hope that you will enjoy this conference and we hope that the deliberations will be fruitful and successful.

Prof. Takayuki Mori,
10th ICLT, Local Chair

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A STRUCTURED APPROACH TO REDESIGN THE SUPPLY CHAIN STRATEGY OF FMCG COMPANIES

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ABSTRACT

Purpose: To redesign an existing supply chain strategy is a challenge for practitioners. Although academia has provided various general frameworks about different supply chain strategy types, reality is often too complex and uncertain to find the best choice.

This paper aims to develop a 5-step approach that enables a structured supply chain strategy redesign process allowing practitioners to identify, evaluate and select the best supply chain design choices that deliver both, customer value proposition and increased shareholder value.

Design/Methodology/Approach: An abductive research methodology enables a creative iterative process of “theory matching” between academic literature and two case studies attempting to merge theoretical knowledge with real-life observations. The outcome is presently being tested in the context of a 10-month industry project. Test results fall outside the scope of this paper.

Findings: First, the demand side of the supply chain shall be analyzed. Demand profiling techniques to identify relevant demand segments help reduce complexity of the markets being served. For each segment, the related supply uncertainty is assessed too, resulting in an optimal supply chain strategy type for each segment.

A list of potential design decisions (or pre-defined choices) define the configuration of assets and processes for each strategy type and per each functional area of the supply chain. They can be classified as fundamental, efficiency-oriented or flexibility-oriented choices. The selection of the best choice depends on how well it supports the customer value proposition. Thus, the resulting set of choices represents a logical bridge between business strategy and the supply chain.

Finally, the selected choices are assessed on their impact on shareholder value, ensuing the elimination of choices with negative implications. Lastly, the resulting supply chains are screened after synergy opportunities before being released for implementation.

Originality/Value: This paper combines existing supply chain theory with practical lessons learnt from two case studies to develop a structured, practitioner-oriented approach how to proceed when redesigning a supply chain. Our aim is not to develop a new theory but to build on various existing ones in a comprehensive way resulting in an innovative concept.

Research Limitations: Most of the publications as well as both case studies are related to FMCG industry. Further research is therefore needed to guarantee a broader application field.

Practical Implications: If the current 10-month industry test of our approach renders successfully, this paper is intended to become the foundation to develop a practitioner guide for supply chain strategizing.

A STUDY OF THE ATTRACTIVENESS OF AIRLINE CARGO SERVICE INFLUENCING FREIGHT FORWARDERS' CHOICE

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ABSTRACT

Purpose: The purpose of this study is to investigate the competitive and attractiveness of airline cargo services' factors which effect to choice of freight forwarders by the view of forwarders in Thailand.

Design/methodology/approach: The experts' interview is conducted in order to make the decision on the factor screening process. Later, best-worst method is apply to weight the airlines service in the factors weighting process.

Findings: The finding presented the significant factors that airlines have to consider in order to attract the customers (freight forwarders). The results showed that the air freight fare and on-time performance are the most preferable factors. Besides the air freight fare, improving the operation for remaining the high percentage of on-time performance would result in gaining more competitiveness over other potential competitors.

Research limitations/implications (if applicable): In this paper, the significant limitation of this study is the data collection. Some of the data are not available online, therefore, some of the important data are based on experts' interview

Originality/value: For the academic point of view, there are limited research apply best-worst method to analyse air cargo industry. Moreover, the contribution for business perspective is mainly contribute to the airlines development strategy and support the decision making for improving their level of service.

Keywords: Air cargo service, freighter forwarder, Best-worst method, MCDM

A STUDY OF THE ATTRACTIVENESS INDEX OF CHINA (SHANGHAI) FREE TRADE ZONE

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ABSTRACT

Purpose: Methods of attracting different enterprises to join China (Shanghai) Pilot Free Trade Zone (SFTZ) and identification of key factors for investors to join SFTZ are critical issues for Chinese government. This study mainly aims at investigating the attractiveness index perceived by the enterprises which have joined or been interested in joining the SFTZ.

Design/methodology/approach: By reviewing previous literatures and surveying enterprises which have set up their offices in SFTZ or are interested in setting up their offices in SFTZ and applying Importance-Performance Analysis (IPA) technique, we can define the appropriately weighted attractiveness indices for the SFTZ.

Findings: This research target is focused on Shanghai Free Trade Zone. Through reviewing relevant literatures and implementing a questionnaire survey of international enterprises, 27 SFTZ attractiveness factors were constructed. By means of collecting questionnaires, this study analyses enterprises' perception on the degree of importance and performance of Shanghai Free Trade Zone on these attractiveness factors through IPA technique.

Research limitations/implications: In terms of the selection of potential surveyees, the companies recorded in the United States', the European Union's, and the Japanese trade offices in Taiwan are the targeted potential respondents in this research. It is recommended that future researches should distribute questionnaires to enterprises in the greater Chinese region. In addition, it is recommended that future researchers conduct a sustainable follow-up survey to companies that have already established their offices in the Shanghai Free Trade Zone to understand exact degree of importance of these factors and the degree of satisfaction of the companies operated in the Shanghai Free Trade Zone.

Originality/value: In this study, attractiveness factors reported in multifaceted literatures were weighted via questionnaire survey to form Shanghai Free Trade Zone attractiveness indices. Research findings provides not only a direction for SFTZ's future development direction but also for FTZ in other countries. Finally, the development of unique enterprises' attractiveness indicators will provide the FTZ operators the possibility to adjust and improve their current operation practices in a real time manners.

Keywords: China (Shanghai) Free Trade Pilot Zone, Attractiveness Index, Importance-Performance Analysis (IPA) technique

A SYSTEMATIC REVIEW OF PSYCHOLOGICAL MOTIVATION TO CARPOOL

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ABSTRACT

Purpose :The development of internet-based applications has influenced the dynamic of ridesharing and turned researcher's attentions to shared travel behavior such as carpooling . The purpose of this manuscript is to provide a comprehensive review of psychological motivation to carpool which will lead to a set of research issues that could be selected as future research directions.

Design/methodology/approach :Peer-reviewed articles published in international journals since 1976 were collected by using Scopus, ISI Web of Science, and Transport Research International Documentation (TRID) (as databases and Proquest as a database host .The findings from the review were clustered using Pajek software .Main path analysis was used to identify the domain and the evolution of each cluster.

Findings :Based on evidence from the review, the motivation to carpool may depend on whether an individual is a driver or a passenger. We found two groups of articles (the articles that specified whether the respondents were drivers or passengers, and the articles that did not specify the role of the respondents .(This manuscript then suggests that there are three clusters .Two of the clusters contain the articles that examined the motivations for either drivers or passengers .The third cluster contains a large number of articles that did not clarify whether their respondents were drivers or passengers .In each cluster, their evolution is presented descriptively.

Research limitations/implications :In this manuscript, we identified the clusters and their evolutions from the findings that were based on peer-reviewed articles .However, future systematic review studies focusing on a particular cluster should expand a search to non-scholarly articles .For the third cluster, future studies should examine whether the results from an article are associated with motivations for drivers, passengers, or both.

Originality/value :This manuscript identified three clusters and the evolution of each cluster related to psychological motivation to carpool and suggests future research directions regarding to each cluster.

Keywords :Carpool, Rideshare, Liftshare, Psychological Motivation, Travel Decision Making

AN ANALYSIS OF THE INSTITUTIONAL PRESSURE AND COMPETITIVE VALUE IN THE ADOPTION OF GREEN LOGISTICS PRACTICE AND HOW ENVIRONMENTAL COLLABORATION AND INFORMATION SHARING FACILITATE ENVIRONMENTAL SUSTAINABILITY: A THEORETICAL FRAMEWORK

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ABSTRACT

Purpose: As International trade has grown significantly following a rapid rise in global sourcing activities and dispersed production sites in the past few years. There have been increasing concerns about the environmental impacts caused by shipping activities. In addition, the linkage between the logistics, transport section and various environmental threats are not concealed to any contemporary observer. These threats come in different forms, ranging from global warming and resource depletion. Owing to growing awareness about the environment protection, the need to reduce the environment has become a significant priority for many organization operating in supply chain due to the several factors such as institutional pressure, competitiveness value, key resource. Many shippers and logistics service providers are encouraged to implement environmental practice to enhance their green image and gain a competitive advantage. Recent studies had shown Green initiatives adoption by Logistics Service providers (LSPs) may reduce environment impact and provide the resource optimization and it seen as a solution to solve environmental problems. Therefore, this study develops a green logistics-oriented framework to investigate what are the promoting factors influence LSPs to engage in green logistics practice and how green logistics practices can facilitate the environmental sustainability through environmental collaboration and information sharing among shippers and logistics service providers.

Methodology/design/approach: The proposed method in this study is a systematic literature review

Finding: The research extends the conceptual framework highlighted that the institutional pressure, competitive value and key resource are the key influencing factors that compel LSPs to engage in green logistics practice. Moreover, the result also found that both of information sharing and environmental collaboration can facilitate LSPs to adopt green logistics practice in the environmental sustainability.

Research limitations/Implications: The derived hypotheses and have not been empirically measured. This study is a part of ongoing research, so this proposed conceptual framework will be empirically validated to prove this framework into accepted and validated model. In addition, the future research should be directed toward investigating the interrelations among these constructs.

Keywords: Green Logistics Practice, Institutional Pressure, Competitive Value, Supply Chain Barriers, Information Sharing, Environmental Collaboration.

AN EMPIRICAL RESEARCH ON THE CHOICE OF INTERNATIONAL MULTIMODAL TRANSPORT ORGANISATION FORMS – A CASE OF CHINA (CHONGQING)-SINGAPORE STRATEGIC INTERCONNECTION DEMONSTRATION PROJECT

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ABSTRACT

Purpose: The China-Singapore (Chongqing) Demonstration Initiative on Strategic Connectivity is the third Government-to-Government project between China and Singapore, under China's Belt and Road Initiative, Western Region Development and Yangtze River Economic Belt strategies. Cargo such as car parts, machinery and petrochemical products can be transported from Chongqing to Singapore and beyond via an alternative route. This paper explores the organisation of multimodal transport under this China-Singapore (Chongqing) Connectivity Initiative (CCI).

Design/methodology/approach: We make use of a mixed-method approach to gather multiple sources of field data involving the various stakeholders: (1) On-site investigation on multimodal transport operators in Chongqing to find out the operating conditions and major problems faced; (2) Data relating to transaction costs among companies and management costs in companies to quantify relevant cost elements and proxies. We use transaction cost analysis to evaluate two key strategic decision choices: (i) equity cooperation and/ or (ii) market transactions so as to assist multimodal transport operators in making decisions that can engender them to achieve greater efficiency.

Findings: Our preliminary analysis of the transaction and management costs provide a better understanding of the existing organisation of multimodal transport operators. Proposition 1: When transaction costs between operators are higher than their internal management costs, the operators should engage in equity cooperation. Proposition 2: When transaction costs between operators are lower than their internal management costs, the operators should cooperate through market transactions.

Research limitations/implications: This study will provide a reference point for the smooth development of freight movement by multimodal transport under this CCI. This will increase the efficiency of multimodal transport, reduce the cost of multimodal transport, and promote the success of China-Singapore projects.

Originality/value: Our transaction cost analysis approach enables decomposition, refinement, and measurement of transaction costs and management costs for multimodal transport operations.

Keywords: China-Singapore Connectivity, Multimodal Transport, Organisation, Transaction Cost Analysis

AN OUTLOOK ON TECHNOLOGICAL READINESS OF ASEAN PLUS THREE COUNTRIES

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ABSTRACT

Purpose: This paper investigates technological readiness in one of the world's most attractive and open-economy region, ASEAN plus three. As the rapidly rising of technology has become a critical element for success in worldwide business, technological readiness is one of the key factors which motivates multinational investment.

Design/methodology/approach: The paper investigates various perspectives on technological readiness of ASEAN plus three countries, including Networked Readiness Index (NRI), ICT Development Index (IDI), Internet Usage Statistics (IUS), Global Cities Outlook (GCO).

Findings: Strengths and weakness in terms of technological readiness of each ASEAN plus three countries are identified.

Originality/value: The finding reflects the situation of ASEAN plus three countries on technological readiness and their development. The findings are suggestive to policy makers, investors and society, should their development direction opportune.

Keywords: Technological readiness, ASEAN plus three

ANALYSIS OF GOVERNMENTAL INFORMATION LOGISTICS OF EARLY WARNINGS

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ABSTRACT

Purpose: Early warning is a main element of disaster risk reduction. Despite the advancement of information and communication technologies (ICT) and the increase in awareness of the importance of early warning systems (EWS), the effectiveness and efficiency of the warning systems in delivering needed information is still a challenge. The two parts of early warning systems consists of 1) Disaster monitoring where sensing the event is the most important goal, and (2) Warning dissemination where warning are generated and passed to the intended recipients. While the significance of the first part is realized by many projects, the second part is the opposite. Less than a hundred research articles were returned as a search result using keywords “information logistics” and “early warning systems”. On the contrary, more than 66,000 results were obtained when the keyword “early warning systems” was used. Whereas delivery of warning information can greatly reduce risks from natural hazards, it is often found that little or no warning information is available, especially from government agencies who monitoring and warning are their main responsibilities.

Design/methodology/approach: Information logistics of warning information from government agencies is investigated and analyze to study the quality of information delivery including format, granularity and usability. Information delivery from government agencies are compared based on the requirements and specification by the international bodies.

Findings: Lessons learned from the study are discussed. The checklist for providing higher quality of information logistics for early warning is presented.

Research limitations/implications: This study is limited to IT-enabled public communication channels provided by government agencies.

Originality/ value: The current state-of-art of early warning information delivery from government agencies are revealed.

Keywords: Information logistics, Early warning systems, ICT, Quality, Usability

APPLICATION OF COPULA AND VAR IN RISK APPRAISAL FOR CUSTOMER DEMAND IN LUBRICANT OIL WHOLESALE BUSINESS

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ABSTRACT

Purpose: To apply copula and VaR in risk appraisal of four customer demand forecasting techniques which consist of ANN, ARIMA, SETAR and LSTAR.

Design/methodology/approach: Four forecasting techniques were used to forecast growth rate of 10 lubricant oil products, then an efficiency of each growth rate forecasting techniques were reported by exact growth rate forecasting error, MAD, RMSE and MAPE. An error of growth rate forecasting was transformed and fixed to the cumulative distribution function. Then, copula model was formulated by spearman method with *R* project for statistical computing software.

Findings: Risk of four forecasting techniques was calculated by Copula method and supported as VaR value. The total risk of forecasting techniques among all growth rate of 10 products was approximately 5% consequently, it has a chance of 0.05 that customer demand may increase or decrease by 65% Finally, SETAR performed the best among all four selected forecasting techniques in our case.

Research limitations/implications (if applicable): Meaning of proposed copula method and VaR is hard to describe when applied to forecasting technique. Normally, copula is best fixed to describe the financial problem.

Practical implications (if applicable): The proposed approach was implemented in lubricant oil wholesales real business.

Originality/value: The application of Copula and VaR in risk appraisal for demand forecasting is original and novelty.

Keywords: Copula, Value at Risk, Artificial Neural Network, ARIMA, SETAR, LSTAR

CONTEMPORARY ISSUES IN MANAGING GLOBAL LOGISTICS AND SUPPLY CHAIN

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ABSTRACT

Purpose: Nowadays, there are many factors which impact to changing pattern of global logistics and supply chain management. Especially, accelerating to open trade liberalization between nations and disruptive technology. The global chain becomes shorter and more complex. Global trade and business transaction also disclose opportunities and complexity. The objective of this study is to examine current status of global logistics and supply chain players and their changing roles. It also identifies future trends and problematic issues of the players in global perspective. Finally, it designs a new conceptual model to effectively contribute Thailand's changing international trade.

Design/methodology/approach: To achieve the objectives, it reviews related literature and collects primary data through in-depth interviews and questionnaire survey. It concentrates only manufacturing and agricultural goods as a representative. It interviews five companies in each section. Validity and reliability are carefully examined.

Findings: The result shows that importers and exporters lack global knowledge and flexibility to changing global trade. They cannot operate their business in old way. As Thai government accelerates to open trade liberalization to partner countries, and then tariff barriers are reduced or eliminated. In particular, disruptive technologies are changing pattern of business transaction.

Research limitations/implications (if applicable): -

Practical implications (if applicable): Therefore, Thai importers and exporters are confronting to serious barriers when trading with partners. Even though tariff rate has been annually decreasing until zero percent, but non-tariff barriers (TBT, SPS, national treatment, and standards) are increasingly becoming big problems. Players, in particular Thai side, need to be more professional in term of global knowledge and understanding, including readiness to adapt and flex to changes. New global chain would be shorter and leaner in term of total costs and time.

Originality/value: The study leads to the conclusion that before managing global logistics and supply chain, it needs to examine status of global players in term of readiness and adaption to the changes, including identifying current and future problematic issues associated with changing trade patterns and disruptive technology. Then defining the framework and developing the conceptual model. Further research would be conducted by focusing on changing role and responsibility of specific logistics activities and disruptive technology.

Keywords: Logistics, Supply chain, Global trade, Disruptive Technology

DATA CHAIN MANAGEMENT ON CROP PRODUCTION IN PRECISION AGRICULTURE: A REVIEW

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ABSTRACT

Purpose: The adoption of digital technologies in every industry has been increasing at a rapid pace because the digital technologies brings enormous value to business and individual. In agricultural industry, the digital technologies also have been adopting increasingly under the "Precision Agriculture (PA)" that are changing the way on crop management of farmers for enhancing production and improving quality of productivity. PA is a data driven methodology for optimizing and managing the crops production that agricultural producers have been adopting precision agriculture technologies for handful of reasons in recent years. This paper aims to study the methodology and digital technologies to manage data chain and data flow in precision agriculture system in life cycle of crop production.

Design/methodology/approach: The methodology of this study is the literature review relevance data chain and data flow management methods in precision agriculture system presently. After that, these methods and technologies are compared to investigate the benefits and performance of each method, and the method mostly used for managing data chain and data flow in precision agriculture systems.

Findings: To study the digital technologies and the methodology relevant to data chain and data flow management and to investigate the mostly method used to manage data flow in precision agriculture system currently.

Research limitations/implications (if applicable):

Practical implications (if applicable):

Originality/value: The benefit of this paper is to understand and to investigate the methods and technologies used for managing the chain of data flow in precision agriculture system on crop production.

Keywords: Data flow, Supply chain, Product Lifecycle, Data management, Digital technologies

DRIVING SUPPLY CHAIN INNOVATIONS IN SMALL AND MEDIUM COFFEE ENTERPRISES IN NORTHERN THAILAND

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ABSTRACT

Purpose: The paper is to study and analyse the current supply chain of Arabica coffee in Northern Thailand. For decades, Chiang Mai has had the potential to become Thailand's coffee capital. It is therefore essential that the coffee supply chain of case study should be updated and accurately recorded.

Design/methodology/approach: The small and medium sized enterprises have been interviewed for 300 samples in Chiang Mai from upstream coffee farmers, to midstream roaster companies, and to downstream coffee shops and cafes.

Findings: Young coffee entrepreneurs have been giving richly traditional Chiang Mai a caffeinated, cosmopolitan edge. A newfound appreciation for local beans of Arabica coffee, as well as the rise of knowledgeable growers and internationally experienced roasters, made Chiang Mai Thailand's go-to destination for quality brews.

Originality/value: The study offers the transfer of information about a coffee product from the producer or point of origin through all intermediaries in the transaction to the end customer. In other words, the outcomes of this research are useful guidelines for enhancing traceability in supply chain of coffee stakeholders in Chiang Mai.

Keywords: Coffee Supply Chain, Traceability, Chiang Mai

EXPLORING THE FEASIBILITY OF AID DELIVERY FOR EMERGENCY RESPONSE THROUGH CROWDFUNDED CASH-BASED INTERVENTION AND MODERN RETAILERS NETWORK

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ABSTRACT

Purpose: This manuscript aims to explore the feasibility of implementing a flash donation appeal to the general public to respond to disaster situations through delivery of standardised aid package using modern retailers' fulfilment centres or provision of cash-based intervention and discusses the criteria that need to be identified to assess the most suitable response intervention.

Design/methodology/approach: A mixed "method" research approach involving both quantitative and qualitative method has been selected for the study. Data has been collected through short surveys, a series of semi-structured interviews, and unstructured observations to obtain perspectives from various aid practitioners.

Findings: Cash-based intervention offers great flexibility for the disaster-stricken population to quickly recover their livelihoods where minimum disruptions to local economic activities, access to markets and local basic needs exists. The roles of modern retailers through their business continuity practices serves a two-pronged approach to serve as a critical supply channel for aid packages and/or offers access to beneficiaries to utilise their cash entitlement to purchase basic needs.

Research limitations/implications (if applicable): The study is an exploratory research based on empirical data based on existing conditions in one of the South East Asian countries. It is intended to gain further information to suggest hypotheses to the topic under review.

Practical implications (if applicable): Insights will be obtained from industry practitioners and aid community on the potentials offered by existing infrastructure, local practices while taking into account the relevant associated risks.

Originality/value: The continuous expansion of geographical coverage of local modern retailer's network in South East Asia carries strong potential to play a critical role in emergency response situations. The roles of private sector have been recognised in disaster management, however, in many cases, the full potential of collaboration between public, private and the humanitarian sector has not been met due to the inability to operationalise the commitment effectively.

Keywords: cash-based intervention, modern trade, emergency response, channel management.

FRESH GARLIC SUPPLY CHAIN IN NORTH THAILAND

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ABSTRACT

Purpose: The supply chain of fresh garlic in the north of Thailand was studied. The objective was to trace the structure of supply route from farmer to factory. Beside, an investigation of cost in each chain was collected to analyse some features of cost reduction. Four garlic cultivation areas were study i.e. A.Pai, Mae Hong Son; A.Li, Lamphun; A.Mae Wang, Chiang Mai; A.Samoeng, Chaing Mai. The results from this research suggested some possible ways to improve supply chain performance of fresh garlic production.

To investigate the supply chain structure of fresh garlic from farm cultivate until deliver to factory and examine the cost occurs in the chain.

Design/methodology/approach: Gralic farming was explored to correct the data contained land preparation, seed preparation, cultivate, fertilization, harvest and post harvest, stock and deliver method to the factory.

Findings: Results of the study showed the costs of fresh garlic production in A.Pai, A.Li, A.Mae Wang, A.Samoeng, are 23848, 28133, 26092, 27106, baht per rai)1 rai =0.16 hectare (respectively .Regarding to production limitations, it can be found that farmers faced 3 production problems i.e.; a large amount of chemical fertilizers usage, shortage of labor force and inefficient utilization of pesticides.

Research limitations/implications (if applicable): n.a.

Practical implications (if applicable): n.a.

Originality value:

Keywords: Fresh garlic supply chain, supply chain cost reduction

HOW COULD DIGITAL INNOVATIONS IMPACT THE RESEARCH IN LOGISTICS AND SUPPLY CHAIN MANAGEMENT? A PROSPECTIVE STUDY

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ABSTRACT

Purpose: Logistics and supply chain management (L/SCM) are fields of study which production rate shows an important interest in research (Sachan et Datta, 2005). However, this trend could be impacted by innovation (Wang et al, 2016). Indeed, in a digitalizing world, the place occupied by innovations growth could lead to a lack of visibility about the research main lines in L/SCM (Kumar et al, 2015) and the adapted innovation strategies for companies (Seraidarian, 2008). This study explores how digital innovations can draw a part of the research agenda in L/SCM as strategic added value for companies in the future.

Design / Methodology: We combine Delphi and Prodin methods (Schmidt et al, 2001; Scouarnec, 2008) to realize a prospective study in four rounds based on a 128 respondents panel. The empirical investigation took place over 8 months.

Findings: The results show that some challenges would be take into account in the Logistics of the Future, highlighting the need to manage several paradoxes focusing on data, actors, territories and the view of the value in L/SCM.

Originality / Value / References: This study investigates how researchers could address challenges of innovation in L/SCM by identifying scenarios that will be apply in the future. These results would help deciders or managers to anticipate challenges and adapt their skills and their companies designs or models.

IMPROVEMENT OF DOORFRAME PRODUCTION PROCESS IN WOOD FACTORY USING LEAN TECHNIQUE

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ABSTRACT

Purpose: This research focuses on the improvement of doorframe production process using lean technique. The objective is to reduce time and non-value-added activities, balance the production line and reduce delay in product delivery.

Design/methodology/approach: The study started from analyzing the processes. The waste can be observed through value stream mapping, process chart and fish-bone diagram. The ECRS technique was employed to eliminate waste at each work station. The line balancing technique was then implemented to optimize production line. The processes were improved with the continuous flow under the conditions of customer requirements.

Findings: One Necessary but Non-Value Added activity (NNVA) was eliminated as a result of process improvement. Total production time was reduced 14.57% from 1,341 to 1,146 seconds. The production efficiency was increased 57.40%. From Improved production processes, on time delivery was realized to be increased by 13.55%.

Research limitations/implications: The work limits to the doorframe production. Products with similar production process may employ this toolset to improve their current practice.

Practical implications: This study introduces current practice techniques to actual implement in the wood factory case study.

Originality/value: After successful implementation in doorframe production department, similar approach can be applied to other production line in the company.

Keywords: Process Improvement, Lean Technique, ECRS, Wood Industry

LEVEL OF INFORMATION TECHNOLOGY USAGE IN MANAGING LOGISTICS AND SUPPLY CHAIN OF THAI INDUSTRY

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ABSTRACT

Purpose: The paper aims at exploring the level of Information Technology usage in managing logistics and supply chain of Thai industry.

Design/methodology/approach: The paper investigates the level of IT usage in managing logistics and supply chain of 9 industry groups, based on database of Logistics/ Supply Chain Scorecard (LSC). Of interest is (1) data interchange coverage, (2) logistics and supply chain data management and (3) logistics and supply chain IT capacity building.

Findings: The paper identifies levels of IT usage in each industry and also discusses these differences.

Research limitations/implications (if applicable): The dataset is limited. Therefore, the finding is not conclusive yet suggestive.

Originality/value: The finding is suggestive, shall any policy be made to promote and support each of these industries.

Keywords: IT in logistics and supply chain management, Logistics/ Supply Chain Scorecard, Thai industry

LOGISTICS SITUATION IN MYANMAR

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Abstract

Purpose

The purpose of this paper is to summarise the current logistics situation and planned or proposed logistics development in Myanmar for the possible investor in the country.

Approach

The authors searched publications of government sources, including DICA (Directorate of Investment and Company Administration of Myanmar), JICA (Japan International Cooperation Agency, the ODA arm of the Japanese government), and supranational agencies like the World Bank and the Association of South-East Asian Nations. Further published material from publically available sources was used to illustrate latest developments.

Findings

It was found that, while Myanmar is classified as a Least Developed Country and has a low Logistics Performance Index, it has been developing fast in recent years and is on track to greatly improve in the logistics field.

Research Limitations

This research is based on secondary data. In order to go deeper into the development and opportunities, primary data would have to be collected and analysed, which is beyond the scope of this conference paper.

Practical Implementations

For any company planning to invest in Myanmar now, be it as a manufacturer or an importer and distributor of goods, the question arises whether the logistics performance of the country is at a workable or satisfying level. While every company is different, this paper gives an overview of the current situation to encourage investment in Myanmar.

Originality/Value

This is a most current snapshot of the logistics situation in Myanmar, summarising data from various sources and should be a useful tool for the potential investor.

Keywords: Myanmar Logistics, South-East Asia, Least Developed Country, Country Development.

MEASURING PERFORMANCE OF LOGISTICS SERVICE PROVIDERS: A PROPOSED CONCEPTUAL FRAMEWORK

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ABSTRACT

Purpose: The purpose of this paper is to provide a comprehensive framework related to how the measurement of logistics performance can be conceptualised for logistics service providers (LSPs). The paper also identifies prominent performance indicators in the perspective of systems theory, in terms of *input* and *output mechanism*.

Design/methodology/approach: This paper can be separated into two folds. Firstly, the LSP performance measurement is presented and discussed to identify the performance dimensions. Second, a conceptual model is proposed by listing of comprehensive indicators which illustrated in the literature.

Findings: Based on the literature, the proposed framework identifies three major dimensions (LSP performance measurement, organizational performance, and competitive advantage) and suggests that a good performance of logistic functions in LSPs could lead to the better level of organizational performance and, finally, increase the competitive advantage of LSPs. The literature also suggested that there are five performance dimensions for LSPs namely efficiency and effectiveness, service quality, inter-organisational, socio-environmental, and financial. The performance indicators for each dimension are presented and discussed respectively.

Research limitations/implications: By conducting a systematic literature review, this paper proposes a conceptual framework with a respect to the theoretical background of LSP performance measurement. Practical applications that allow the model to be tested in real situations with LSPs should be carried out in the future. Practical implications that could help a LSP develop and build performance system effectively should be further explored.

Originality/Value: The paper proposes the framework which is conceptually a new way to develop a performance measurement in LSPs. Comprehensively, it further identifies performance dimensions and indicators regarding to each dimension.

Keywords: Conceptual framework, Logistics service provider, Performance measurement, Performance indicators

RISK EVALUATION OF COLD CHAIN LOGISTICS SERVICE PROVIDERS IN THAI FOOD INDUSTRY

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ABSTRACT

Purpose: This research paper is aimed to explore existing risks found in cold chain logistics service providers with a particular focus on the Thai food industry. Several studies have been found in the context of risk in Logistics Service Providers (LSPs), however, to the best of authors' knowledge, only a handful has been found in identifying the risk in food industry, especially in Thailand. With Thai export value of 30 billion US Dollars, the globalisation of food supply, storage, distribution and processing has gained its significance status in the business well-being. With this amount of export value, a high profile risk could be found and is worthwhile to conduct this research.

Design/methodology/approach: A detailed compiled list of risk has been identified from the literature. In order to sort them into groups, a set of questionnaires has been utilised and distributed to 2,547 companies which has experience with cold chain logistics and via factor analysis, three main groups has been identified, namely: operational risk, political and financial risks and social and environmental risks. In the last stage of analysis, a fuzzy analytical hierarchy process has been used to prioritize the risk factors from the Thai industry's perspective.

Findings: It is been found that operational risk posit a high amount of risk items which could hinder cold chain performances, however, it is the social and environmental risk group that accumulates the high weight among the three groups.

Research limitations/implications: Other list of prospect respondents could be used to further validate the findings.

Practical implications (if applicable): N/A

Originality/value: This research provides a new perspective in viewing risk in cold chain logistics operations. With the expansion of globalisation, strategic planning is critical in gaining competitive advantage internationally. The result of this finding is geared towards assisting decision makers in planning their cold chain logistics operations.

Keywords: Cold Chain, Logistics Service Providers, Thai food industry, Fuzzy AHP.

RISK-BASED SYSTEM FOR PRODUCT AUTHENTICATION IN THE MOROCCAN HANDICRAFT SUPPLY CHAIN

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ABSTRACT

Purpose: In the wide manufacturing era, Handicraft organization has a mission to manage and protect its products that are supposed to be precious; first, the product will be protected by ensuring its information. In fact, not all manufactured products are free from common issues, thus, the main issue that the handicraft products are actually facing is the counterfeiting due to the globalization and the out-sourcing.

For better support the handicraft mission, handicraft supply chain management (SCM) and use of an automated information technology systems based on the risk management services, can play a critical role in protecting the organization's information assets.

Methodology and approaches: In this paper, we lend the process of saving the handicraft product from counterfeiting by integrating a system based on the risk management services. Furthermore, we give an overview of components 4.0 as the key enabler for a successful IT security program that compounds the handicraft supply and the risk assessment. So that, our work is based on the general concepts presented by the national institute of standards and technologies (NIST), Industry 4.0 concepts and the international standards organization (ISO:12938, ISO:9001 and ISO:31000).

Findings: Studying the risk in the supply chain process, lead the organization to reduce the coming frauds and detecting with ease the counterfeiting sources. Thus, the handicraft supply chain will be improved and the shared information between the organization parts will be more ensured. For example, the customer as the most important actor in the system wants to know about his good genuineness, so he will request to authenticate the product with the help of provided services, those services will be provided by the agent part of risk management, and rendering the trustworthy to the requested information.

Key words: SCM, Risk Management, Authentication, Industry 4.0.

ROBOTICS PROCESS AUTOMATION THROUGH LEAN ENGINEERING

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ABSTRACT

Purpose: As industries seek to improve their business systems, to reduce cost and grow throughput, lean principles are being widely implemented even when applying automation technologies into their operations. Value Stream Mapping (VSM) is a powerful lean technique used by firms to achieve the desired productivity improvement. This paper seeks to help a public sector healthcare service enterprise to manage its internal processes more effectively and efficiently, exploring ways to eliminate process waste and designing the future state map scenarios (“to-be”) so that it can serve as a guide for future lean activities. Specifically, the enterprise is looking at using robotics and automation technologies in the blood processing services. Doing so will help to counterbalance the need for more trained manpower to meet the growing demand for faster and more blood services processing.

Design/Methodology/Approach: We apply VSM using the software eVSM to map the actual detailed physical process of blood processing, starting from collecting the process information, mapping the current state (“as-is”) involving both material and information flows, followed by analysing the value-added and non value-added activities, and eventually exposing hidden waste and sources of waste. This is completed through a time and motion study taken over several months. Tapping on the sources of waste as opportunities for process improvement, we applied design thinking to design the future state of the operations. Next, a cost-benefit analysis with consideration of the time value of money is used to compute the benefits and cost of applying process automation.

Findings: There are unnecessary movements of people and materials from one location to another within the facility. The activity flows in the blood processing lab can be improved with a simple design of the layout, leading to savings in travel distance and time. Further, the waiting time by staff can be improved by implementing robotic process automation on the transport and work activities, without compromising on the product safety and quality. Using robotic process automation, labour productivity increased by 16%.

Originality/Value: This study can help other time sensitive and perishable service firms to consider using the traditional VSM redesign as part of design thinking and lean engineering to improve workflow, reduce waste in travel and waiting, and lift the productivity of existing operations.

Keywords: Value stream mapping, Lean engineering, Design thinking, Logistics, Case

SALES FORECASTING OF BOW SAW BLADE USING ARTIFICIAL NEURON NETWORKS IN INDUSTRIAL BLADE FACTORY IN THAILAND

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ABSTRACT

Purpose: Currently, artificial neuron networks (ANN) is widely used in forecasting model on many scientific research areas such as engineering, biomedical and education. In the selected case, a blade manufacturing factory is selected to implement the proposed method. The aim of this study is to stabilize material ordering process on a made-to-stock product. This studied is aimed to compare the performance of artificial neuron networks with other three classical forecasting techniques and to evaluate the supply ordering amount for the manufacturing production.

Design/methodology/approach: There are Moving Average (MA), Exponential Smoothing (ES), and Winter's Additive Exponential Smoothing techniques. Sales of bow saw blade in an industrial blade factory are studied during the last five years. Management of this factory have never been used any kind of forecasting technique before.

Findings: Results are shown that ANN is provided better performance than the others through the mean square error.

Research limitations/implications: N/A

Practical implications: N/A

Originality/value: To the best of author's knowledge, a systematic forecasting method is still lacking in this industry. Several industries, especially in the region, are heavily depended on personal experience in conducting forecasting activity. With this, the firm are able to increase the accuracy in forecasting and ultimately, reducing cost for the manufacturing processes.

Keywords: Artificial Neuron Networks, Sales Forecasting, Forecasting techniques, Industrial Blade Factory

SMART TRAVEL PLANNING FOR CHIANG MAI'S ECOTOURISM

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ABSTRACT

Purpose: The research purposes the suggested routes for ecotourism destinations in Chiang Mai by using the traveling salesman problem (TSP). Chiang Mai has been noticed as the destination of ecotourism because of a rich and beautiful natural resources. Hence, it should be convenient for tourists to have a web-based platform providing all updated destinations and suggested plan about ecotourism.

Design/methodology/approach: As a pilot study, the most popular 10 ecotourism destinations were collected from the secondary data observation. The method of travelling salesman problem is applied to create the optimal travel plans under the different time constrains. Then web-based programming is able to show the created trip plan and travel itinerary.

Findings: The TSP showed a suggested plan for ecotourism route in Chiang Mai starting from the center. Moreover, this study purposes the plan based on the length of traveling duration between 3 hours and 48 hours for tourists to manage their traveling time. The final results of this study will be presented in the web-based platform and available for all tourists to download.

Originality/value: The study is applied the advantages of TSP technique to the tourism context. The outcomes of this research are presented and available for the target tourists as the web technology platform which could increase tourists' satisfaction level when they are looking for ecotourism destinations in Chiang Mai, Thailand.

Keywords: ecotourism, traveling salesman problem, tourism logistic, Chiang Mai

STRUCTURAL CHARACTERISTICS OF HUMANITARIAN SUPPLY NETWORK

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ABSTRACT

Purpose: The purpose of this paper is to investigate structural characteristics of humanitarian supply network of disaster relief operations in Khon Kaen province by using social network analysis.

Design/methodology/approach: We apply social network analysis to real supply network data derived from the key legal document governing disaster management in Thailand, Disaster Prevention and Mitigation Act, B. E. 2550 and related government documents. We use different social network analysis metrics at the node- or firm-level. The metrics are linked to specific roles in the humanitarian supply network and their implication performance.

Findings: The humanitarian supply network consists of 378 actors and 934 links. Khon Kaen Provincial Emergency Operation Centre (KK-PEOC) is prominent on all centrality metrics in the humanitarian supply network. The degree distribution of the humanitarian network follows a power law. This characteristic imply that the humanitarian network is a scale-free networks.

Research limitations/implications (if applicable):

Practical implications (if applicable):

Originality/value: This paper presents application of social network analysis to reveal structural characteristics of humanitarian supply network of disaster relief operations in Khon Kaen province. The research revealed how the network operates and behaves.

Keywords: Humanitarian supply network, Social network analysis, Network structure, Structural analysis, Network indices

THE IMPACT OF DIGITAL TECHNOLOGY IN INTERORGANIZATIONAL SUPPLY NETWORKS

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ABSTRACT

Purpose: The purpose of this paper is to examine how rapid changes in digital technology affect interorganizational supply networks as these drastic changes are having an impact on the value creation roles of the actors contributing to alter the whole value creation process. The aim of this paper is to reveal how this uncertainty of technology-driven change is perceived, what impacts it has and how it affects at the network level.

Design/methodology/approach: This research follows a case study approach to illustrate how small and medium-sized enterprises perceive technology-driven change and uncertainty. An integrated literature review is utilized to ground the research and empirical data is collected by stakeholder analyses and semi-constructed interviews to investigate the perception of technology-driven change and its impacts in the whole supply network.

Findings: The results illustrate that perception of different digital technology-related changes varies significantly. Uncertainty caused by these changes and their local impacts are differently perceived by individuals having diverse impacts varying from potential threats to opportunities. Furthermore, the results indicate how digital technologies have altered interorganizational supply networks by reorganizing the roles of actors.

Research limitations/implications (if applicable): This research follows a qualitative research method, which has obvious limitations. The research has been conducted on a limited number of companies in a limited geographical area.

Practical implications (if applicable): This research reveals how different interorganizational actors perceive the uncertainty caused by technological changes and gives insights to managers how to manage uncertainty caused by technology-driven change.

Originality/value: This paper reveals the different approaches on uncertainty created by digital technologies and offers insights for scholars on how the uncertainty of technology-driven change is perceived. Moreover, the paper gives insights on how the impacts of the technology-driven change have altered interorganizational supply networks.

Keywords: Uncertainty, Technological Change, Interorganizational Network, Digital Technology

TOWARDS AN IMPLEMENTATION OF SUSTAINABLE SUPPLY CHAIN MANAGEMENT (SSCM) ASSESSMENT FRAMEWORK AND FUTURE RESEARCH DIRECTION

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ABSTRACT

Purpose: The proposed sustainable supply chain management (sSCM) performance measurement framework has developed since 2014 in order to facilitate decision makers to develop sustainability measurement model. This work aims to analyze the results of implementing the sSCM Performance Measurement framework in three practical case studies (one case in electronics industrial sector and two cases in agricultural sector). In addition, this work aims to propose a future perspective to improve an implementation contribution of sSCM assessment model.

Design/methodology/approach: Case study approach and context analysis

Findings: The proposed sSCM performance measurement framework allows decision makers defining the complexity of supply chain and selecting sustainability measures based on eight criteria in three dimensions. This work found that (1) the most important dimension from decision maker's point of view is still an economic dimension and the least important is a social dimension. (2) Even if this framework allows decision makers assess a complex supply chain such as an ultimate supply chain or a stakeholder supply chain, in practical, decision makers adopted this framework into a company and direct supply chain level. (3) Social indicators and measures selection is still a challenge in sustainability performance assessment

Research limitations/implications: The research work on measuring social performance in supply chain is still in the beginning stage. Researchers can adopted the proposed sustainability criteria to enhance key social practices for sSCM in industrial sector.

Originality/value: The contribution of this work is an implementation of sSCM performance measurement framework to one case in electronics industry and two cases in agricultural sector. This work enhances the valuables of adopting the supply chain complexity perspective, process-based perspective, decision-making level could help decision makers to develop a sustainability measurement model. Moreover, the future direction for improving sustainability in supply chain are discussed in this work.

Keywords: sustainable supply chain, performance measurement, multi-criteria decision making, maturity model, AHP

TOWARDS LONGTERM REFUGEE CARE: AN ADVOCACY FOR PERMANENT CAMPS AND HOUSING

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ABSTRACT

Purpose: Enormous numbers of displaced persons roam the world looking for refuge mostly from war and violence. Under current international humanitarian laws safe countries are obliged to accept, resettle and protect refugees and governments are required to protect internally displaced persons (IDPs). To accommodate IDPs and refugees, countries often use temporary camps. They provide refugees and IDPs with food, water, shelter, sanitation, hygiene and so forth. This paper contrasts and compares this short-term emergency approach to refugee and IDP sheltering to permanent refugee and IDP settlement options.

Design/methodology/approach: Drawing upon an analysis of secondary data such as published scholarly and practitioner literature, organisational reports, and publicly available documents, the paper advocates for more permanent refugee and IDP sheltering and housing solutions.

Findings: The paper finds that a longer term permanent approach will (1) lower costs of infrastructure (2) encourage private sector business activities and thus create employment within camps as well as (3) defuse potentially difficult social issues of education continuity and healthcare provision as well as caring for and protecting women and children. Thus the suggested approach is worth a consideration by humanitarian and disaster response stakeholders.

Research limitations/implications (if applicable): This is a conceptual paper based on a comprehensive literature research and analysis.

Social implications (if applicable): This paper advocates for the universal human rights of IDPs and refugees and their dignity, and how the logistics and planning of camps and housing can contribute to upholding such dignity.

Originality/value: It contributes indirectly to logistics policy and refugee policy as well as logistics service quality, housing and advocacy for human rights and human dignity.

Keywords: Humanitarian logistics; Refugees; Humanitarian operations; Internally Displaced Persons

Admission Information >>>

Admission Criteria

Admission to the program will be based on the Admission Committee's careful evaluation of the applicant's qualifications.

Master's degree requirement

Applicant must hold a Master's degree in related field.

Interview

Applicant must show strong commitment, strong research capability, and ability to communicate in English.

Research Proposal

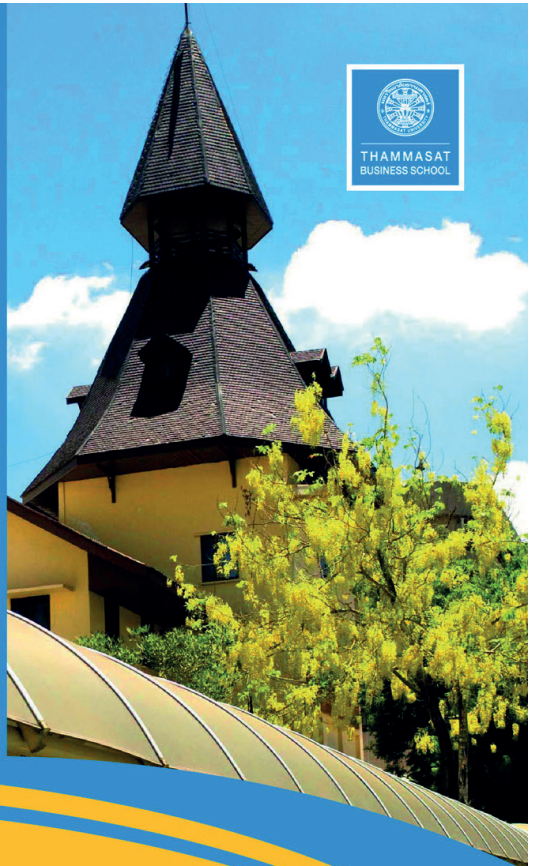
Only an applicant enrolling for plan I has to submit a research proposal in area of interest and the Ph.D. executive committee will consider and suggest the dissertation advisor who might be interested in the proposal.

Admission Requirements

- 1) A TU-GET score of 550 or TOEFL score of 550 (paper based), 213 (computer based), 79 (Internet Based) or IELTS score of 6.0 taken within 2 years on the application date.
- 2) A GMAT score of 550 or GRE score of 1100 (verbal and quantitative parts) or SMART II score of 600 (minimum of 250 for each part) or satisfactory level score of Graduate Program Admission Test taken within 5 years on the application date.
- 3) Three letters of recommendation
- 4) A statement of intent to pursue a Ph.D. degree
- 5) The Research Proposal (for application to Plan I)

Tuition Fees and Expenses

Tuition and general fees are approximately 230,000 Baht per annum.



For more information contact:

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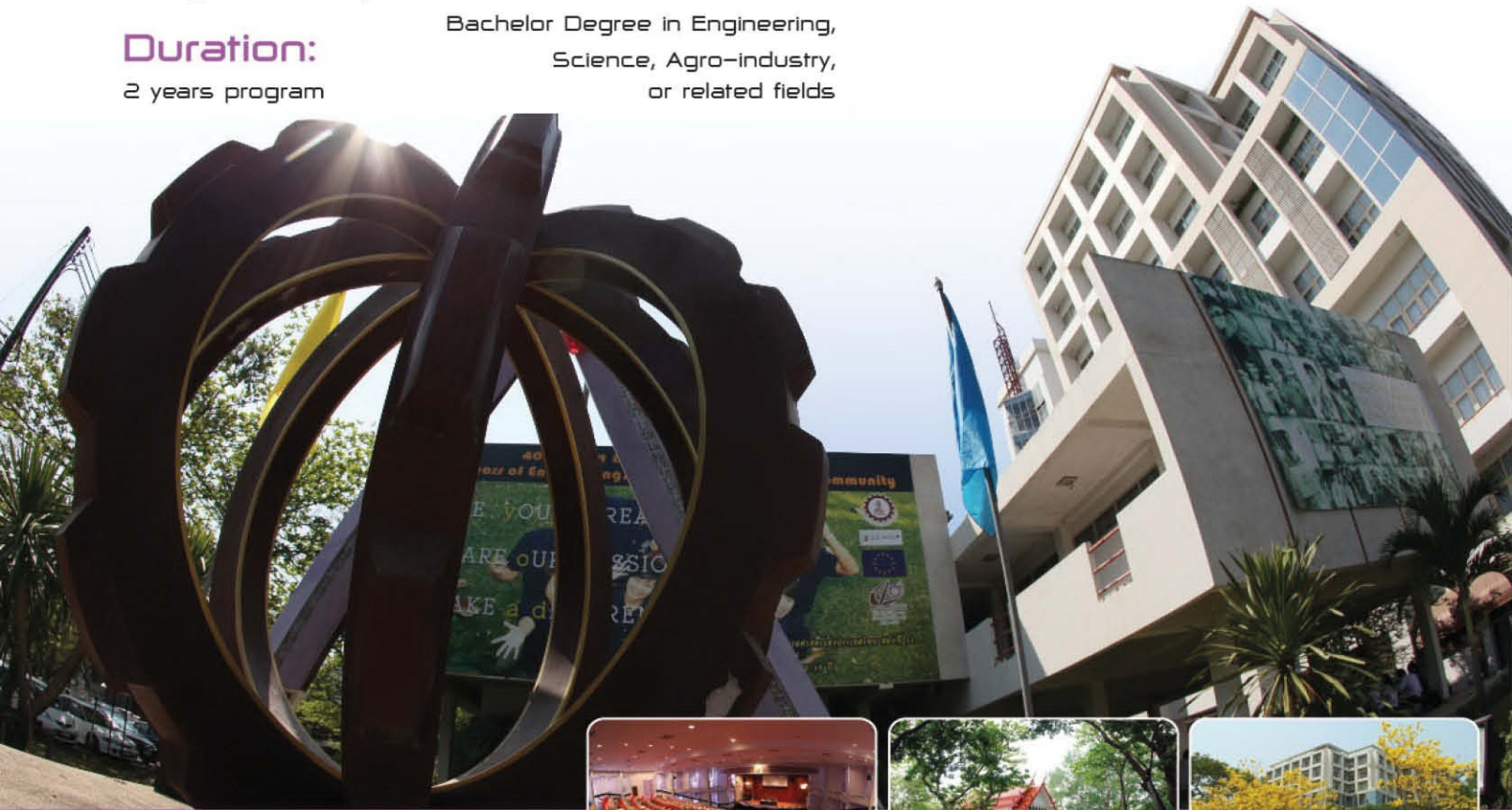
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Qualifications

Plan A1. (Research only Program)

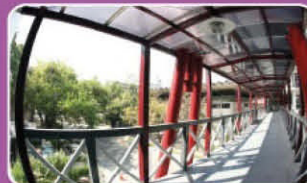
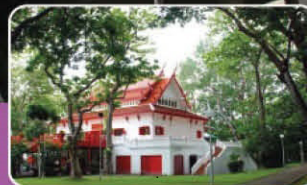
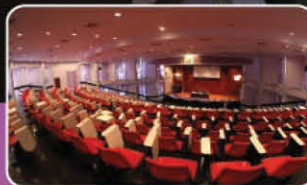
- Hold a Bachelor Degree in Engineering
- Hold a Bachelor's cumulative GPA of at least 3.00 or minimum 2 year working experience in related fields

Plan A2. (Coursework + Research)

- Hold a Bachelor Degree in Engineering, Science or related fields.

Plan A2. (Double Degree)

- Hold a Bachelor Degree in Engineering or Science.
- Sufficient English Proficiency (IELTS > 6.0, TOEFL > 500 or equivalent)
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- Possibility of being awarded degree from Chiang Mai University : Master of Engineering in Logistics and Supply Chain Management
- Otto-Von-Guericke University: Master of Science in Industry Engineering Logistics



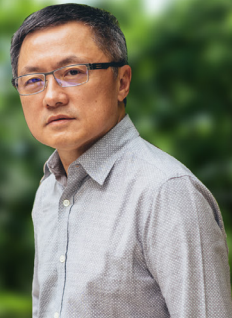


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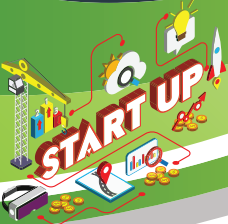
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