

PROCEEDINGS

SETAS-2020

**3rd International Conference on Science
Management, Engineering Technology
and Applied Sciences**

Venue: Hotel MyStays Shin-Osaka Conference Center, Japan

Osaka, Japan

Date: February 15-16, 2020



CONFERENCE BOOK OF ABSTRACT PROCEEDINGS

Consortium-ET

Consortium of Engineering & Technology



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Book of Abstracts Proceedings

**3rd International Conference on Science Management, Engineering Technology
and Applied Sciences (SETAS-2019)**

Osaka, Japan
February 15-16, 2020
ISBN: 978-623-6563-66-5

Email: info@consortium-et.com

URL: www.consortium-et.com



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Proceedings of the 3rd International Conference on Science Management, Engineering Technology and Applied Sciences (SETAS)

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***3rd International Conference on Science Management,
Engineering Technology and Applied Sciences (SETAS)***

Venue: Hotel MyStays Shin-Osaka Conference Center, Japan

Conference Theme: Forum for enhancement of research and developmental activities through networking and sharing ideas.



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CONFERENCE TRACKS

- Computer and Software Engineering
- Mechanical & Metallurgical Engineering
- Electrical & Electronics Engineering
- Civil Engineering
- Bio-Technology & Food Technology
- Chemistry & Chemical Engineering
- Physical, Applied and Life Sciences
- Interdisciplinary

CONFERENCE CHAIR MESSAGE

Michael Sasaoka

“International Conference of Consortium of Engineering & Technology” is a platform that thrives to support the worldwide scholarly community to analyze the role played by the multidisciplinary innovations for the betterment of human societies. It also encourages academicians, practitioners, scientists, and scholars from various disciplines to come together and share their ideas about how they can make all the disciplines interact in an innovative way and to sort out the way to minimize the effect of challenges faced by the society. All the research work presented in this conference is truly exceptional, promising, and effective. These researches are designed to target the challenges that are faced by various sub-domains of the social sciences and applied sciences.

I would like to thank our honorable scientific and review committee for giving their precious time to the review process covering the papers presented in this conference. I am also highly obliged to the participants for being a part of our efforts to promote knowledge sharing and learning. We as scholars make an integral part of the leading educated class of the society that is responsible for benefitting the society with their knowledge. Let’s get over all sorts of discrimination and take a look at the wider picture. Let’s work together for the welfare of humanity for making the world a harmonious place to live and making it flourish in every aspect. Stay blessed.

Thank you.

Michael Sasaoka

Conference Chair

Email: contact@consortium-et.com



CONFERENCE AGENDA

DATE: February 15-16, 2020

LOCATION: Hotel MyStays Shin-Osaka Conference Center, Japan

Event Title: 3rd International Conference on Science Management

Engineering Technology and Applied Sciences SETAS-2019

Start Time

- 09:00 am - 09:30 am: Registration & Kit Distribution
- 09:30 am - 09:40 am: Introduction of Participants
- 09:40 am - 09:50 am: Inauguration and Opening address
- 09:50 am - 10:00 am: Grand Networking Session

Tea/Coffee Break (10:00 am - 10:30 am)



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10:30 am - 12:00 pm: First Presentation Session

Room 1

Track A: Business, Social Sciences & Humanities

Presenter Name	Manuscript Title	Paper ID
HESS-FEB-104	Exploring the Impacts of Innovation and LMX in Biotechnology Industry	Sheng-Rong Cheng
HESS-FEB-107	Conceptualising the Four Cs in the Elementary (K-6) Italian Language Classroom at Oatley Public School, New South Wales, Australia: Embedding Creativity, Critical Reflection, Communication and Collaboration	Penelope Johnstone

Track B: Engineering, Technology, Computer & Applied Sciences

SETAS-FEB20-105	Identification Hotspot Green House Gases Emission In Supply Chain Agroindustry Potato Chips	Ririn Regiana Dwi Satya
SETAS-FEB20-106	Pareto-Based Algorithm for Adaptive Aggregat Production and Distribution Planning in Shrimp Agroindustry Supply Chain	Lely Herlina

Lunch Break & Closing Ceremony (12:00 pm - 01:00 pm)

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Conference Day 02 (February 15, 2020)

Second day of conference will be specified for touristy. Relevant expenses are borne by Individual him/herself.



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TRACK A

ENGINEERING, TECHNOLOGY & APPLIED SCIENCES

Identification Hotspot Green House Gases Emission In Supply Chain Agroindustry Potato Chips

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^{1,2,3,4}Department of Agro-Industrial Engineering, Faculty of Agricultural Technology,
IPB University (Bogor Agricultural University), Bogor, Indonesia

Keywords: GHG Emissions, Life Cycle Assesment, Potato Chips, Supply chain

The supply chain of potato chips agroindustry products is very useful to be applied in various aspects, therefore it is necessary to continuously improve its performance. Factors that must be considered in the supply chain design of agricultural commodities and agro-industrial products in order to obtain a supply chain that is comprehensive, effective, efficient, responsive, fair and sustainable. Climate change is a major issue in sustainability, because it can cause dangerous temperature and sea level rise, drought, and others. Scientists throughout the world provide information that supports the fact that climate is changing and that this change is partly due to human activities through the release of Green House Gases (GHGs). However, lately, GHG emissions have increased, partly due to industrialization and changes in agriculture and land use. Based on this background, the authors conducted a study with the aim of analyzing the life cycle of the potato chip supply chain with carbon footprint methods in order to reduce environmental impact. In this research, carbon footprint models will be designed on potato chip agro-industry so that spots can be identified that have the potential to produce environmental impacts. Spot identification is done by analyzing the distribution and transportation of the potato supplier and the process of producing potato chips, so that the production process is environmentally friendly. The results of the design of the potato chip agro-industry carbon footprint model is that it can determine carbon emissions released along the supply chain of potato chips agroindustry and be measured quantitatively, so that stakeholders / actors involved in the supply chain can utilize them in the decision making process. So that it is expected to increase efficiency and reduce the environmental impact that occurs due to the production of potato chips and implement environmentally friendly and sustainable industries.

Pareto-Based Algorithm for Adaptive Aggregate Production and Distribution Planning in Shrimp Agroindustry Supply Chain

^{1*}Lely Herlina, ²Machfud, ³E Anggraeni, ⁴Sukardi

^{1,2}Departement of Agro-Industrial Engineering, Faculty of Agricultural Technology, IPB University (Bogor Agricultural University), Bogor, Indonesia ^{3,4}Industrial Engineering Departement, Faculty of Engineering, University of Sultan Ageng Tirtayasa, Banten, Indonesia

Keywords: Shrimp agroindustry, Supply chain, Adaptive aggregate production and distribution planning, NSGA-II

In the global supply chain, the integration of production and distribution is one of the important activities that must be carried out. This also applies to the shrimp agroindustry supply chain. The shrimp agroindustry is one of the agro-food industries that deals with processing raw shrimp into various frozen shrimp products. The demand for frozen shrimp products is very diverse, while the supply of raw shrimp consists of various sizes and has perishable properties. To fulfill consumer demand, aggregate production planning must be made adaptively. Adaptive means being able to improve aggregate planning due to changes in demand. Integration of adaptive aggregate production and distribution planning will result in better planning. Based on this, we developed an adaptive aggregate production and distribution model for the shrimp agroindustry supply chain. Non-dominated sorting genetic algorithm II (NSGA-II) which is a pareto-based algorithm is used to solve the problem. The aim is to minimize total costs and maximize service levels. The sample problem from the shrimp agroindustry in East Java is used to show the efficiency of the proposed algorithm.



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TRACK B

BUSINESS, ECONOMICS & MANAGEMENT STUDIES

Exploring the Impacts of Innovation and LMX in Biotechnology Industry

*Sheng-Rong Cheng
Asia University, Taiwan

Keywords: Innovation, leader-member exchange, job performance, SEM, fsQCA

Because of the broad applications and compelling advantages, biotechnology successfully draw the attention of investors and scientists in the past two decades. The highly research/skill-intensive nature of biotech industry makes it highly capital-intensive and human resource-dependent. According to the resource-based theory, organizational behavior plays a critical role in sustaining an above-average performance. Based on these regards, in this study we investigated the identifying antecedents or determinants affecting employee's job performance in biotechnology industry, with a special focus on the relationships among innovation, leader-member exchange, task conflict, job satisfaction, and job performance. An online questionnaire survey method was employed to collect primary data from employees of biotechnology industry. To explore the gap between symmetric and asymmetric thinking in data analysis, two methods, structural equation modeling (SEM) and fuzzy set qualitative comparative analysis (fsQCA), were applied and their results were compared. The results of SEM indicated that both innovation and leader-member exchange have significant effects on task conflict and job satisfaction, task conflict and job satisfaction are associated with job performance. The results of fsQCA proposed that employee can achieve high job performance when high level of leader-member exchange with high innovation.

Conceptualising the Four Cs in the Elementary (K-6) Italian Language Classroom at Oatley Public School, New South Wales, Australia: Embedding Creativity, Critical Reflection, Communication and Collaboration

*Penelope Johnstone

Italian Language Teacher Oatley Public School New South Wales Australia

Keywords: Poverty; DMSP/OLS, Nighttime light, Provincial level, Principal component analysis, PCA, Poverty index, Spatial statistical.

The purpose of this paper is to examine a new approach to address challenges in the elementary language classroom. In the contemporary classroom teachers must provide students with engaging learning opportunities that encourage the development of skills which will equip them for the rigours of all aspects of modern society. A new approach is needed to engage students in the area of language education and equip 21st Century learners with the four Cs: Creativity, Critical Reflection, Communication and Collaboration. Preparing students for the demands of the evolving workplace in a rapidly changing global community is the challenge facing teachers and companies around the world in 2020. Leaders/mentors must engage their personnel with meaningful ongoing training to meet the needs of a constantly evolving workplace. Transforming Schools 4Cs program has been adopted by the leadership team at Oatley Public School, as a whole school direction for 2020 and beyond. Professional development projects, guided by academic experts from Sydney University, encourage teachers to reflect on their teaching practice and work collaboratively to develop engaging, challenging and differentiated learning experiences for students. There has been suggestion that students must master additional subject areas within the curriculum, including foreign languages, the arts, geography, science and social studies. In Australia and around the world there has been a focus on STEM subjects. There has been enormous debate about why the acronym is not STEAM, to include the Arts. Through foreign language learning students are encouraged to apply their creativity through a variety of learning experiences such as music, drama, visual arts, science & technology, mathematics, human society in its environment (social studies), literature, history and geography. Students are encouraged to make connections with learning experiences across the curriculum and beyond the classroom, through an integrated learning approach. With guidance and support from academic experts, teachers will develop confidence in a new approach and way of



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thinking in regards to classroom practice. Students must engage with wide-ranging learning opportunities in order to become creative, critical thinkers and exceptional communicators who are confident collaborators.

UP COMING EVENTS

You can find the details regarding our upcoming events by following below:

<http://consortium-et.com/upcoming-events/>

MISSION

To disseminate knowledge and help scholars, practitioners and administrators to promote the high quality research.

