PROCEEDINGS

ASET-2018

International Conference on Advance Research Approaches in Applied Sciences and Engineering Technology

Venue: Hotel Mystays Ochanomizu Conference Center

Tokyo, Japan

Date: July 21-22, 2018

CEJ

Consortium of Engineering & Technology

CONFERENCE BOOK OF ABSTRACT PROCEEDINGS

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TABLE OF CONTENTS

Book of Abstracts Proceedings

International Conference on Advance Research Approaches in Applied Sciences and Engineering Technology ASET

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Proceedings of the International Conference on Advance Research Approaches in Applied Sciences and Engineering Technology (ASET)

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International Conference on Advance Research Approaches in Applied Sciences and Engineering Technology (ASET)

Venue: Hotel Mystays Ochanomizu Conference Center

Conference Theme: Providing Platform for enhancement of research and developmental activities through networking.

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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: July 21-22, 2018
LOCATION: Hotel Mystays Ochanomizu Conference Center
DAY: Saturday-Sunday
Event Title: International Conference on Advance Research Approaches in Applied
Sciences and Engineering Technology ASET-2018

Start Time

09:00 am 09:10 am: Registration & Kit Distribution
09:10 am 09:20 am: Introduction of Participants
09:20 am 09:30 am: Inauguration and Opening address
09:30 am 09:40 am: Grand Networking Session

Tea/Coffee Break (Tea/Coffee Break (09:40-10:00 am)

CONFERENCE AGENDA

DATE: July 21-22, 2018
LOCATION: Hotel Mystays Ochanomizu Conference Center
DAY: Saturday-Sunday
Event Title: International Conference on Advance Research Approaches in Applied
Sciences and Engineering Technology ASET-2018

Session: 01 (Oral)
10:00 am - 11:30 am: Presentation Session
Track A: Engineering, Technology & Applied Sciences

Presenter Name	Manuscript Title	Paper ID
Chia-Ling Huang	Fuzzy-Driven Reliability Redundancy Allocation Problem for Reliability Evaluation in Logistics Industry	ASET-JULY-101
Sharmin Sultana	bDouble Gene Targeting Multiplex PCR-RFLP Discriminates Bovine and Porcine Substitution in Commercial Food Products	ASET-JULY-103
Bounkham PA-NYAVONG	Influence of Changing Government Fees and Mining Tax on Final Pit Limits of Phonesack Coal Mine at Kaleum District, Xekong Province in Lao PDR.	ASET-JULY-104
Keopaseuth ketumala	Influence of Block Dimension and Equipment Selection on the Final Pit Determination of Coal Deposit at Heenherp District, Vientiane Province, Lao PDR	ASET-JULY-106
Dr Dongyeob Han	Change Detection of Bi-Temporal UAV Images	ASET-JULY-114
Min-Hsuan Lu	A Prototype Design of A Smart and Portable Coastal Fisheries Assistant System	ASET-JULY-115
Aitor J. Garrido	Modelling of Oscillating Water Column Devices Part I: Model Statement	TKE-478-102

CONFERENCE AGENDA

DATE: July 21-22, 2018
LOCATION: Hotel Mystays Ochanomizu Conference Center
DAY: Saturday-Sunday
Event Title: International Conference on Advance Research Approaches in Applied
Sciences and Engineering Technology ASET-2018

Session: 02 (Oral)
11:30 am - 12:30 pm: Presentation Session
Track B: Business, Economics, Social Sciences and Humanities

Presenter Name	Manuscript Title	Paper ID
Yu-Chen Wei	Family Influences in the Internationalization of the Top 1000 Taiwanese Enterprises: Enduring Relationships with Stakeholders Do Count	IEBS-JULY-1012018
Yuh-Dauh Lyuu	A Robust Trinomial Tree For General Local-Volatility Models	IEBS-JULY-1172018
Sanyi Yang	Political Violence and Foreign Policies	IEBS-JULY-1302018
Wan-Jeng Chang	The Application of Comparisons to English Learning	IEBS-JULY-1312018
Thunyanee Pothisarn	Use Intention of Thai Internal Audit towards Data Analytics Tools	IEBS-JULY-1352018

Lunch Time (12:30 - 01:30 pm)

CONFERENCE AGENDA

DATE: July 21-22, 2018
LOCATION: Hotel Mystays Ochanomizu Conference Center
DAY: Saturday-Sunday
Event Title: International Conference on Advance Research Approaches in Applied
Sciences and Engineering Technology ASET-2018

Session: 03 (Poster)

01:30 pm - 02:30 pm: Presentation Session

Track A: Engineering, Technology & Applied Sciences

Presenter Name	Manuscript Title	Paper ID
Chao-Tsang LU	Using Homogeneity Agitation Technique to Make Chitosan/Essential Oil Microcapsules: Efficacy Evaluations	ASET-JULY-105
A.A. Burkov & S.V. Fomin	Blends of PLA/NR with Epoxidized Soybean Oil: Rheological Property, Morphology and Mechanical Property	ASET-JULY-108, 108C
O.V. Elkin, D.A. Kozulin & A.N. Kibishev	Electrochemical Behavior of Terbium Ions on Mo Electrode in NaCL-KCL Melt	ASET-JULY-109, C, C2
E.S. Shirokova	Relaxation Behavior of Elastomer Composites: The Effect of a Hybrid Carbon Black/Carbon Nanotubes Filler	ASET-JULY-110
Hung-Jen Chen	Mental Workload Evaluation of 2D and 3D Laparoscopic Training through EEG Measurement	ASET-JULY-112

CONFERENCE AGENDA
DATE: July 21-22, 2018
LOCATION: Hotel Mystays Ochanomizu Conference Center
DAY: Saturday-Sunday
Event Title: International Conference on Advance Research Approaches in Applied
Sciences and Engineering Technology ASET-2018

Session: 04 (Oral)
02:30 pm - 04:00 pm: Presentation Session
Track B: Business, Economics, Social Sciences and Humanities

Presenter Name	Manuscript Title	Paper ID
Youngjun Kim	Category-Wise Analysis on Features of Freemium Mobile App Services Based on Topic Modeling and Online Review Data	IEBS-JULY-1212018
Burmguk Lee	A Neural Network Approach for Identifying New Service Opportunities From Multidimensional Vector Space: A Case of Mobile Application Market	IEBS-JULY-1222018
Tsai Mingfang	Parallel Trade under Vertically Related Markets	IEBS-JULY-1372018
Ching- Ho Yen	A Repetitive Rectifying Sampling Plan Based on Process Capability Index	TKS-478-101
Ponpipatsarn Ratchakorn	Management of Nora Rongkru, a Thai Local Ritual Ceremony: A Case Study of Suwanmanee Family in Chingko Sub-District, Singhanakorn District, Songkhla Province	TKS-478-102
Perada Dulyapiradis	Network of FTAs Infatuation: Untangling Ṡpaghetti Bowl Effect¨	TKS-478-103
Pisacha Kambuya	Better Model Selection For Poverty Targeting Through Machine Learning: A Case Study In Thailand	TKS-478-104
Jeehyung Jo & Jong-Hee Lee	Determinants of Video on Demand(VOD) Viewing Patterns: An Empirical Evidence from Korean IPTV Industry	MRSSM-078-ANI106

Closing Ceremony (04:00 - 05:00 pm)

CONFERENCE AGENDA

DATE: July 21-22, 2018
LOCATION: Hotel Mystays Ochanomizu Conference Center
DAY: Saturday-Sunday
Event Title: International Conference on Advance Research Approaches in Applied
Sciences and Engineering Technology ASET-2018

Participants Registered As Listener/ Observer

The following Scholars/ practitioners who don't have any paper presentation, however they will attending the conference as delegates & observers.

Official ID: IEBS-JULY-114A2018

Yejee Jeong

Department of Liberal Arts, Faculty of Humanities and Business

Ewha Womans University

Seoul, Korea (Republic of)

Official ID: ASET-JULY-117

Dr. Seungmin Rho

Faculty of Department of Media Software, Sungkyul University, Korea

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DATE: July 21-22, 2018
LOCATION: Hotel Mystays Ochanomizu Conference Center
DAY: Saturday-Sunday
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Sciences and Engineering Technology ASET-2018

Conference Day 02 (July 22, 2018)

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

TRACK A

ENGINEERING, TECHNOLOGY & APPLIED SCIENCES

Fuzzy-Driven Reliability Redundancy Allocation Problem for Reliability Evaluation in Logistics Industry

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Keywords: Reliability, Reliability Redundancy Allocation Problem, Fuzzy Theory, Logistics Industry

The reliability that has popularly used as a measure of the successful probability in providing the function properly plays an important role in the operation of logistics industry because it is one of the major index to evaluate the quality of service (QoS). And the QoS can strongly stand for the competitiveness of of a logistics company in the same industry. In the logistics industry, the operation of the products needs to be received, stored, picked, inspected, packaged, and delivered that is a huge work so that the design of the operation system to ensure the reliability of QoS is very challenging but important. As we know, the reliability redundancy allocation problem (RRAP) is an famous and effective methodology to improve the system reliability. The reliability of redundancy components in each subsystem is not an exact value so that the fuzzy theory has been used to evaluate it. In addition, the design of the product layout is appropriate for the characteristics of the operation in logistics industry because it can be mass-produced. Therefore, a fuzzy-driven RRAP to enhance the reliability of the operation in the logistics industry with the product layout has studied in this paper. As well as, this study contributes to enhance university-industry cooperation.

Double Gene Targeting Multiplex PCR-RFLP Discriminates Bovine and Porcine Substitution in Commercial Food Products

[1*]Sharmin Sultana, [2]Md. Eaqub Ali
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Keywords: Multiplex PCR-RFLP, Molecular Fingerprints, Halal, Kosher & Vegetarian Issues, Zoonotic Threats, Universal Primer

Gelatin is widely used as an effective material in pharmaceuticals products such as soft capsule and hard capsule shell that is widely consumed in all continents. However, the acceptance of gelatin in pharmaceuticals products largely depends on its animal origins because its main source porcine, cattle and fish by-products have the serious concern in Halal, Kosher and Hindu populations. Recently, some simplex and duplex PCR assays was utilized to assess the animal origins of gelatin in food products but those methods were based on the DNA sequencing approach for PCR product validation which is not only time consuming and costly but also cannot reveal all information in a single assay platform. To address this research gap, we targeted, for the first time, multiplex PCR-restriction fragment length polymorphism (RFLP) assay to ensured better security. The assay was optimized under pure and mixed gelatine matrices and PCR results were further validated by restriction digestion with three different enzymes, BsaAI, Hpy188I, and BcoDI. The specificity of the multiplex PCR assay was cross-tested against 25 non-target species. Finally, 28 halal branded pharmaceuticals capsule shell were screened and 24, 2 and 2 of them were found positive for bovine, porcine and eukaryotes, respectively. The detection limit was 0.1 to 0.01 ng total DNA extracted from pure and mixed gelatines. The study is greatly useful in monitoring and certifying the halal issues in food products.

Influence of Changing Government Fees and Mining Tax on Final Pit Limits of Phonesack Coal Mine at Kaleum District, Xekong Province in Lao PDR.

[1*]Mr. Bounkham PANYAVONG, [2]Prof. Dr. Panlop Huttagosol

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Keywords: Mine Equipment Selection, Equipment Cost, Fees and Tax Policies, Economic Block Value, Minesight 3D Software, Open Pit Optimization, Final Pit Limits, Estimate Ore Reserve

Recent years, some of mining fees and taxes in Lao PDR have been reformed. Therefore, mining activities are impacted from higher operating cost. Alternative final open pit designs are under the influences of changing government fees and mining tax policies. In the case study for this paper illustrates that the most influential factors of final pit limits and mine reserves are fees and mining tax policies on the economic block values. The MineSight 3D software was used to run the model in the open pit designs. Each modeling block value included the coal price, mining costs, processing costs, fees and mining tax. The mining cost and equipment cost resulting from mine equipment selection were estimated for this coal mine. The pit design methods were run for the open pit optimizations are Lerchs-Grossman and Floating Cone Algorithms. The mineable reserves from each open pit were analyzed and compared. The pit optimization is Lerchs-Grossman Algorithms. The increasing reserves were affected from reducing fees and mining tax, which related to the promotion of the mine development. In addition, the increasing coal production extracted from the deposits will help to maximize revenues to the Lao government. Furthermore, socio-economic of the country will be developed.

Using Homogeneity Agitation Technique to Make Chitosan/Essential Oil Microcapsules: Efficacy Evaluations

[1*]Chao-Tsang LU, [2]Po-Yang Hsu [3]Chin-Mei Lin, [4]Ching-Wen Lou, [5]Jia-Horng Lin
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Keywords: Natural Vegetation Essential Oils, Chitosan, Microcapsules, Homogeneity Agitation

Natural vegetation essential oils that are composed of volatile ingredients are commonly used in prevention and healing of diseases. They can inhibit mosquito biting, but the efficacy is undermined by the short storage due to the high volatility. Microcapsules are thus adopted to protect, transmit, and slowly release the essential oils. In this study, a homogeneity agitation technique is used to form chitosan microcapsules wrapping essential oils. An optical microscope and Fourier transform infrared spectrometer are used to observe the surface morphology and measure the structure of microcapsules. In addition, the infrared moisture determination balance is used to measure the wrapping rate and drug loading of the microcapsules. This study successfully produces chitosan/essential oil microcapsules whose particle diameter is 2.42 m and wrapping rate is 88.33%.

Influence of Block Dimension and Equipment Selection On the Final Pit Determination of Coal Deposit At Heenherp District, Vientiane Province, Lao PDR

[1*]Keopaseuth ketumala, [2]Assoc.Prof. Dr. Panlop Hattagosol

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A fundamental aspect in the development of an open pit mining project is the determination of the mineable reserves and the respective design of the ultimate pit limits. Block dimension including bench height and equipment size are some of the influence factors which directly affect the quantity of mineable reserve and the final pit limit. Therefore, the study of these factors was addressed in this paper as a part of mining design of a coal deposit in Lao PDR through the change of block dimension and the use of increasingly larger equipment. Minesight@ 3D software was used to simulate ore body and 3D block modeling. The work identied equipment size and evaluated their costs due to the increasing of block dimension which in order to estimate an economic block value. The spread of results from study illustrated the varying of mineable reserve for each scenario of block dimension. Since the use of larger equipment and less cost, a bigger block dimension produces more mineable reserve and productions, generate a wider and deeper pit shell rather than the small block dimension.

Blends f PLA/NR With Epoxidized Soybean Oil: Rheological Property, Morphology and Mechanical Property

[1*]A.A. Burkov, [2]S.V. Fomin,[3] A.L. Iordanskii,[4]R.L. Vesnin,[5], Ye.S. Shirokova,[6]D.S. Sokolov

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Keywords: Polylactide, Natural Rubber, Compatibilizer, Epoxidized Soybean Oil

This study is focused on the improvement of properties of polylactide (PLA) blended with masticated natural rubber (NR) using epoxidized soybean oil (ESO), renewable additive, as a compatibilizer and plasticizer. For all blends, the PLA/NR ratios was 60/40 w/w. The ESO content in compounds varied from 0 to 20 phr. The size and dispersion of rubber phases in the PLA matrices (with different contents ESO) were observed using scanning electron microscopy. It was found that ESO provided a better distribution of polymers. The increase in the compatibility of PLA/NR is confirmed by the data of differential scanning calorimetry (DSC). The DSC data demonstrated a significant shift of the glass transition temperature of PLA phase to the region of lower values (from +59C to +48C). It should be noted that the cold crystallization temperature peaks in PLA/NR/ESO blends are located at a slightly low temperature in comparison with the mixtures without ESO (from +112C to +97C). Rheological studies showed a decrease in viscosity, decrease in storage modulus and improvement of processability with increasing content of ESO. The optimal mechanical properties of the materials were achieved by the addition of 15 phr ESO. Thus, ESO is an effective plasticizer and compatibilizer for PLA/NR compounds.

Electrochemical Behavior of Terbium Ions on Mo Electrode in NACL-KCL Melt

[1*]O.V. Elkin, [2]A.N. Bushuev,[3]I.V. Tolstobrov,[4]D.A. Kozulin,[5]A.N. Kibishev
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In this paper, the cathodic reduction of terbium ions on Mo electrode in the equimolar molten mixture of sodium and potassium chlorides with addition of 3 to 10 wt. % terbium chloride relative to the lead reference electrode in the temperature range 1073-1173 K were studied by the cyclic voltammetry method. Absence of extraneous peaks in the voltammogram of the solvent to the alkali metal reduction potential and the coincidence of the cathodic and anodic branch of the voltammogram indicate the absence of impurities in the background electrolyte. When terbium chloride is introduced into the background melt, under all the conditions studied, one cathode and one anode current peak are fixed on the voltammograms, which correspond to the reduction and oxidation of terbium. Based on the diagnostic criteria of the theory of cyclic voltammetry, it was shown that the process of reduction of terbium ions proceeds reversibly under the conditions studied at potential sweep rates from 50 to 250 mV/s. It has been established that the process of cathodic reduction of terbium ions proceeds with the participation of three electrons. The diffusion coefficients of terbium ions are determined, the values of which increase with increasing temperature and decreasing concentration and amount to 1.20 10-5 to 2.53 10-5 cm2/s. On the basis of the dependence of diffusion coefficients on temperature, activation energy values (Ea) were calculated. The Ea values decrease from 29.2 to 22.4 kJ/mol with increasing concentration.

Relaxation Behavior of Elastomer Composites: The Effect of A Hybrid Carbon Black/Carbon Nanotubes Filler

[1]I. A. Mansurova,[2] A.A. Burkov,[3] I.B. Shilov, [4*]E.S. Shirokova,[5] E.O. Dolgiy,
[6] A.. Khousainov,[7] Belozerov V.S.

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Keywords: Hybrid Filler, Frost Resistance Of The Material

The glass transition in hybrid carbon black/carbon nano-tube (CB/CNT) filled elastomer composites has been studied through dynamic mechanical analysis (DMA) and differential scanning calorimetry (DSC). The storage modulus E and loss tangent (TanD) are recorded from -100 to 100 C and a frequency of 10 Hz. The thermal analysis was carried out at 2 C/min temperature increment. The vulcanizates were made as per conventional technology. The CNT were introduced into rubber compounds as CB/CNT masterbatches resulting from joint ultrasound processing. The CNT content in the rubber compounds varied from 0.1 to 0.5 phr. The DMA data proved that introduction of CB/CNT hybrid particles resulted in the spread of TanD temperature peaks for all the samples towards lower temperatures and the subsequent shift of the maximum TanD position by 4.0 to 15.6 degrees. The DSC data demonstrated the existence of additional low-temperature -relaxation transitions in the modified vulcanizates (-123-118 C). The observed relaxation behavior could be explained by the increase of vacant volume in the vulcanizates along with the rise in segmental mobility of some macromolecules when compared against the reference sample. The highest hybrid filler content vulcanizate demonstrated certain TanD drop in the glass-to-rubber transition zone and the TanD rise in the high-elasticity state, which fact indicated formation of additional filler-filler and filler-polymer interactions. Thus, the CNT treatment with carbon black resulted in a synergy effect upon the rubbers' dynamic characteristics; hence, it can be applied to the task of raising the material frost resistance point.

Mental Workload Evaluation of 2D and 3D Laparoscopic Training through EEG Measurement

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Laparoscopic surgery is slowly replacing the traditional invasive surgeries due to the benefits, including speedy recovery time, and reducing the chance of complications. But this surgical approach also limits the surgeons' depth perception and vision. They need to spend more time to complete the operation, thus leading the surgeons to have higher mental workloads. This research, through the usage of EEG and NASA TLX analyzed 12 participants who performed tasks with different depth perception to understand the effect of 2D and 3D images on ones mental workload. This experiment uses Alpha brainwave and blink rate as the index for mental pressure while the Gamma wave is used as the index for concentration. Prior to the start of the experiment, participants were asked to rest for 2 minutes to calibrate the brainwave signals from unwanted noises. Afterwards, participants were asked to wear the Muse headband and to stand 2 meters away from the 3D monitor while performing the two tasks (peg transfer and circle tracing). From the brainwave result, 3D display results in higher Alpha wave activity, blink rate, and lower Gamma wave activity. In general, the participants feel more relaxed and have lower concentration level in the 3D environment. The NASA TLX survey results also show that stereoscopic vision can be helpful in lowering mental workload and frustration. Due to the result of both subjective and objective analysis, we conclude that the 3D display technology provides helpful depth perception and direction, thus lowering the mental demand of the participants during the completion of the tasks. However, 3D displays do not produce good enough images, therefore causing eye-fatigue to the participants.

Change Detection of Bi-Temporal Uav Images

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Keywords: Geo-registration, Change Detection, Bi-temporal

Unmanned Aerial Vehicles (UAVs) have been used for surveillance, monitoring, inspection and mapping. In this paper, we present a systematic approach for automatic change detection of bi-temporal UAV images for monitoring bridge. The two-step process is applied; 1) an image registration based on feature point matching, 2) difference image generation of bi-temporal images. Image matching to find corresponding points is one of the most important steps for the precise registration of bi-temporal images. We tested the SURF algorithm to find a quick and effective matching points. The difference between pixel values was minimized by using PIFs (Pseudo Invariant Features) pixel-based relative normalization. Experimental results from UAV images showed that our approach has an insufficient accuracy to be applied to the change detection for bridge surface inspection.

A Prototype Design of A Smart and Portable Coastal Fisheries Assistant System

[1]Jing-Chun Luo, [2]Hsin-Yu Tsai,[3]Min-Hsuan Lu,[4]Shin-Yu Wang,[5]Wei-Hsiang Hung,[6*]William W.Y. Hsu

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Keywords: Fisheries assistant system, Coastal fisheries, Microdevices, GPS

This paper designs a portable fisheries assistant system, capable of detecting operation zone within marine protected areas and recording trajectory. The micro device used to deploy this system has enough computational powers to achieve the above tasks and can integrate with external modules, i.e., GSM transmitter and receivers, GPS receivers, and external storages. Micro devices require much less energy than regular computers and can be activated using mobile power banks, which makes it suitable to carry on fishing rafts and sampans which do not have a stable source of electric power. Development of the software will also take account of using operations that consume less power to lengthen the operation time of the fisheries assistant system. The development of current stage will use 4G mobile network to relay information and will be field tested by going outside and on to the seas. To support the system, a control center will be established to receive, store, process, and integrate the data sent by the assistant system for further processing.

Modelling of Oscillating Water Column Devices Part I: Model Statement

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Keywords: Modelling, OWC, Wave Energy.

The European Energy Road Map 2050 and the Spanish Renewable Energies Plan for 2011-2020 are promoting the use of renewable energies as a necessary path to achieve the greenhouse gas reduction target necessary to avoid the rising global warming, and in particular, the use of Ocean Energy. Within the different types of on-shore wave-based energy devices, Oscillating Water Column (OWC) converters are one of the more widely used ones. An OWC plant is basically composed by a capture chamber coupled to a turbo-generator module. This paper deals with the model development for on-shore OWC wave energy power devices.

TRACK B

BUSINESS, ECONOMICS, SOCIAL SCIENCES AND HUMANITIES

A Repetitive Rectifying Sampling Plan Based on Process Capability Index

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Keywords: Sampling Plan, Process Capability Index, Rectifying Inspection, Operating Characteristic Curve, Sensitivity Analysis.

In quality control, sampling plan and process capability index are two important decision tools. Since the popularity of process capability index, considerable research papers of sampling plan based on process capability index have been addressed. However, these research papers almost focus on the conventional sampling plans, accepting or rejecting the whole goods of one lot directly. In fact, under some circumstances rectifying inspection is frequently used due to the suppliers monopoly or the urgency of buyers shipment. Therefore, designing a rectifying sampling plan based on process capability index is a practical issue. In this paper, we consider the quality costs resulting from the rectifying inspection, including inspection costs, internal failure costs and external failure costs and develop the quality costs model. Referring to the two-point principle of operating characteristic curve, we apply the quality costs model and repetitive sampling to design a repetitive rectifying sampling plan based on process capability index, which minimizes the quality costs of one lot. In addition, sensitivity analysis is executed to investigate the behavior of the relevant parameters against the quality costs. Finally, we compare the proposed plan with Yen et al.(2015) in terms of the quality costs. With the results of our proposed methodology, the industry can take that as another alternative method for rectifying inspection.

Management of Nora Rongkru, a Thai Local Ritual Ceremony: A Case Study of Suwanmanee Family in Chingko Sub-district, Singhanakorn District, Songkhla Province

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Keywords: POSDCoRB, Ritual Ceremony, Nora Rongkru, Locality

This qualitative study aims to investigate management of Nora Rongkru (a southern local Thai ritual) of a family and a community in to provide a case study and a guideline for cultural management in other areas. In addition, the participation of a community is also examined to promote rapport between the family and the community, which could maintain and carry on the ritual. Data collection included a literature review of relevant document, an interview, and participant observation. Participants were members in Suwanmanee Family, the assigned persons, and the organizers. Data analysis employed POSDCoRB (Gulick Luther, 1937) and the descriptive analysis was applied. Results show that members in Suwanmanee family members and the community were involved with the management of Nora Rongkru. The management of the event was congruent with Luther Gulicks POSDCoRB in terms of the plans, organizational management, the recruitment, task assignment, the coordination, the report, and the budget. All these processes were supervised by Suwanmanee family members. These people, who had experiences organizing this ritual, took key roles in accelerating the ceremony.

Network of FTAs Infatuation: Untangling "Spaghetti Bowl Effect"

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Keywords: Network Analysis, Community Detection, Gravity Model, International Trade Economics, Spaghetti Bowl Effect, Regional trade

Over the past decades East Asia become described as Factory Asia and involve in triangle trade among regions. However, the Spaghetti-Bowl phenomenon makes it difficult for country to understand the export production pattern and the cross-boarder supply chains. Therefore, the application use of Community Detection in the Network Analysis is employed to examine the evidence of Spaghetti-Bowl effect between the Free Trade Agreements and the traded commodity goods at 6-digit harmonized system for the case of Thailand. To further determine, the result of the product community and network indicators namely Closeness Centrality, Betweeness Centrality and Eigenvector Centrality index are used as input for dependent variable in the Gravity model. The result from the community detection suggests that there are 3 main export groups 1) consumption goods and primary goods 2) intermediate goods and 3) capital goods. The Gravity Model portrays the relationship between trade negotiation and production network can affect Thailand export value. However, there is the evidence of Spaghetti Bowl syndrome in the product group 2 as the trade characteristic of this product group is triangle model. The result implication suggests that Thailand do not have competitive strength on the Global Value Chain of an industrial manufacturing sectors due to the nature of trade and fall in value-added particular for this product group. To mitigate this, Thailand should consider about modification and deepening of existing regional trade agreements to regulate trade activities and promote sustainable development. Furthermore, there is a room for productivity and production upgrading in product 3 if Thailand can catch up with the change in export structural transformation and serve the demand for Factory Asia.

Better Model Selection For Poverty Targeting Through Machine Learning: A Case Study In Thailand

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Keywords: Proxy Means Test, Poverty Targeting, Machine Learning, LASSO, Random Forest, Variable Selection

Proxy Means Test (PMT) is the method for targeting the poor who should obtain the benefit from social programs by estimating an income or expenditure with the Ordinary Least Square (OLS) regression using set of variables which are correlated with those welfare measurements because it is difficult to measure directly. However, the variable selection in OLS would require the stepwise regression which is time-consuming task when the set of variable is very large. Therefore, this study aims to propose the Least Absolute Shrinkage and Selection Operator (LASSO) and Random Forest (RF) algorithms which are part of Machine Learning field to improve PMT model in terms of variable selection and model performance by focusing on the out-of-sample targeting accuracy of poor household in Thailand. The data in this study comes from Thailand Social-Economic Survey (SES) in 2016. The results show that LASSO and RF are more accurate models to estimate the consumption expenditure compared to OLS in out-of-sample prediction. For the out-of-sample targeting accuracy of PMT models which are improved by machine learning algorithms, the LASSO improves on total accuracy of the PMT, while RF gains in the poverty accuracy. In addition, LASSO outperforms RF in terms of reduce in leakage rate. In contrast, an undercoverage rate for RF is significantly less than LASSO. Since, there is a trade-off between the leakage and undercoverage rates, this study suggests that if policy-makers concern about the budget, PMT model based on LASSO is more prefer. On the other hand, if the objective of social welfare program is to help the truly poor, PMT model based on RF is more appropriate.

Family Influences in the Internationalization Of the Top 1000 Taiwanese Enterprises: Enduring Relationships with Stakeholders Do Count

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This study investigates the moderating effects of employee commitment, customer loyalty, and corporate reputation on the relationship between family influence and international expansion. A cross-national research design was conducted using both survey and secondary data of 119 firms taken from the top 1,000 Taiwanese enterprises. This study found moderating effects in the positive impact of family influence on international expansion. Specifically, the study found the relationship between family influence and international expansion stronger for companies with greater relational support from employees, customers, and the public. Multi-level data collection and a longitudinal research design in future research could help in further understanding the relationships between the variables in this study. This paper suggests that family business should establish enduring relationship with their employees and customers and have a plan to improve family reputation that will benefit international market expansion. This study draws on the relational perspective to investigate how family influence results in different international expansion.

A Robust Trinomial Tree for General Local-Volatility Models

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The local-volatility (LV) model for option pricing assumes the instantaneous volatility is a function of the stock price and time. This model is popular because it captures the volatility smile observed in practice besides retaining the preference freedom of the Black-Scholes model. Tree is prevalent among numerical methods for LV models. However, all past attempts to construct an efficient tree for general LV models are prone to having invalid stock prices or transition probabilities. This paper presents a robust trinomial tree for general LV models. Our tree guarantees validity and efficiency. Numerical results confirm the excellent performance of the tree.

Category-Wise Analysis on Features of Freemium Mobile App Services Based on Topic Modeling and Online Review Data

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With the explosive growth of service industry, excessive competition has made it difficult to find new service opportunities. Many companies try to contrive new service by using service map, but most of service map methodologies reduce the data dimension for visualization. The reduction of data dimension inevitably leads to information loss, which may have important implications for the overall circumstance. In response, this paper focuses on minimizing this information loss that occurs during these data dimension reduction processes. This study suggests a brand new approach using the multidimensional vector space to explore new service opportunities. In detail, we find the vacuum in multidimensional vector space composed of service factors, by applying a neural network model. The suggested approach is composed of three parts: first, collecting application descriptive data and review data to extract the service factors, second, developing multidimensional service space and figuring out vacuum of service map, and finally, identifying new service opportunities. The proposed approach will be applied to mobile application services which can utilize large amount of detailed data. The proposed approach is expected to identify new mobile service opportunities more comprehensively than service maps.

Political Violence and Foreign Policies

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The countries that have emerged from the former Soviet Union after the end of the Cold War have always been an important subject for international politics studies. In this paper, the author selects Ukraine and Kyrgyzstan as focal points of regional security case studies. These two countries share several similarities: Firstly, they were members of former Soviet Union and have gained independent sovereignty after the end of Cold War. Secondly, Ukraine and Kyrgyzstan in the early years of independence were relatively high democratized countries and the activities of non-governmental organizations were more active. Secondly, both Ukraine and Kyrgyzstan experienced the color revolution in the early 2000s, but they also broke out a follow-up revolution after that. The assumptions in this paper are: First, the outbreak of the revolution symbols the failure of the state, and the political structure cannot respond to the political demands of the opposition. Therefore, revolution and subsequent development is a set of causal incidents that are closely related to each other. Corruption and regional differences are the internal causes of the revolution. Second, while Ukraine and Kyrgyzstan have similar levels of democratization and the number of revolutions, the political conditions in the two countries are different. The Kyrgyz political elite has strong connection with kremlin; however, attitude toward Kremlin split among different political elite groups. Third, the level of Western involvement in these area is also highly correlated with geopolitical factors.

The Application of Comparisons to English Learning

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Keywords: Social comparisons, Self-comparison, English as a Foreign Language (EFL).

Social comparison is commonly considered to have beneficial effects on learning as well as on motivation, Contrary to this popular belief, studies of the current paper demonstrated that social comparison had more negative consequences for learners achievement than self-comparison. The participating students were 75 English-major sophomores studying in Central Taiwan. 40 of them were in the social comparison group while 35 of them were in the self-comparison group. Students in the social comparison group were found to care more about performance goals relative to learning goals than students in the self-comparison group. After failure, they also displayed less test persistence and worse test performance than students in the self-comparison group. Furthermore, students in the social comparison group described it as a fixed trait more than students in the self-comparison group, who supposed it to be subject to improvement. The findings in the current paper have important implications for how achievement is best encouraged in a Taiwanese EFL (English as a Foreign Language) context.

Use Intention of Thai Internal Audit towards Data Analytics Tools

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Keywords: Thai internal auditors, Data analytic tools, Use intention, UTAUT, SEM.

This paper studies the use and intention to use of data analytics tools of Thai internal auditor. Where the knowledge about current situation of information technology using in internal audit tasks, characteristics of use and intention to use are limit. Questionnaire survey via off-line and on-line channel were used to access the data from Thai internal auditors which 260 Thai internal auditors were participated. This study adopted three constructs of Unified Theory of Acceptance and Use of Technology Model: (UTAUT): Performance Expectancy, Effort Expectancy and Social Influence to explain and predict Use intention of Thai internal auditors towards data analysis tools. conducted with Thai internal auditors. The data analysis was analyzed with descriptive analysis and Structure Equation Model (SEM). The study found that Majority of the respondent are female (69.6than five years experience in internal audit work and most of them are auditing in service industry (40.4majority of respondents used Spreadsheet software to perform management and information technology audit activates at initial stage in unpredictable performance based on individual competence and not on repeatable processes. Regarding the factors use to predict use intention of internal auditors toward using data analytic tools, the statistics result show that Performance Expectancy and Effort Expectancy found to be not significant determinant the Behavior Intention, but Social Influence factor seem to be the main factor affecting the use intention to use data analytics tools of Thai internal auditors.

Parallel Trade under Vertically Related Markets

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Keywords: Parallel trade, Vertically Related Markets

This paper sets up a two-country model in which there is one domestic manufacturer authorizing its product to a distributor in the foreign country. The distributor can sell the product not only to its own market (i.e., the foreign market) but also back to the domestic market. The latter is called as parallel trade. The paper investigates the effects of parallel trade on the wholesale price and the profit of the manufacturer if the domestic market structure is vertically related markets. With a vertically related market structure, it is found that the optimal wholesale price charged by the manufacturer might be higher (lower) under parallel trade regime than that under no parallel trade regime, depending on the market size difference. Moreover, parallel trade may increase the profit of the manufacturer.

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