

ACSS ACSEE AGen 2018

Art Center Kobe, Kobe, Japan

June 8-10, 2018

Final Draft Schedule

Please Check & Confirm

Please check that all information pertaining to you is correct and notify us at acss@iafor.org if there is any error.

Please notify us of any corrections by **Friday, May 11 18:00** (Japan Time).

Final Schedule

After minor changes have been made to the schedule we will send you a link to the final schedule.

The final schedule will contain session information and a detailed day-to-day presentation schedule (including room allocations and session chairs).

This will be available on **Friday, May 25**.

Friday, June 8

Plenary Day Outline

*to be finalised

08:45-09:30 Conference Registration & Morning Coffee

09:30-10:00 Announcements, Welcome Addresses & Recognition of IAFOR Scholarship Winners

10:00-10:30 Featured Panel Presentation

James W. McNally, University of Michigan, USA & NACDA Program on Aging
Hiroshi Ishida, University of Tokyo, Japan

10:35-11:05 Featured Presentation

Philip Sugai, Doshisha Business School, Japan

11:10-11:40 Keynote Presentation

Lowell Sheppard, HOPE International Development Agency, Japan

11:40-11:55 IAFOR Documentary Photography Award | 2017 Winners Screening

11:55-12:05 Conference Photograph

12:05-13:45 Lunch Break | Mame no Hatake

13:45-14:45 Featured Workshop

William Baber, Kyoto University Graduate School of Management, Japan

14:50-15:50 Featured Workshop

Locating Data for Research: Data Collections and Resources for Thesis Writing, Teaching, and Grant Development for the Social Sciences and the Environment

James W. McNally, University of Michigan, USA & NACDA Program on Aging
Kathryn M. Lavender, NACDA Program on Aging, USA

15:55-16:55 Conference Poster Session & Coffee Break

17:00-18:30 Conference Welcome Reception

Saturday, June 9

Day 2 Outline

*to be finalised

08:30-09:00 Coffee, Tea and Pastries

09:00-11:00 Parallel Session I

11:00-11:15 Coffee Break

11:15-12:45 Parallel Session II

12:45-13:45 Lunch Break | Mame no Hatake

13:45-15:45 Parallel Session II

15:45-16:00 Coffee Break

16:00-18:00 Parallel Session IV

18:00-21:00 Official Conference Dinner (optional extra)

Sunday, June 10

Day 3 Outline

*to be finalised

08:45-09:15 Coffee, Tea and Pastries

09:15-10:45 Parallel Session I

10:45-11:00 Coffee Break

11:00-12:30 Parallel Session II

12:30-13:30 Lunch Break | Mame no Hatake

13:30-15:00 Parallel Session III

15:00-15:15 Coffee Break

15:15-16:45 Parallel Session IV

16:45-17:00 Closing Remarks

Friday Poster Session: 15:55-16:55Room: *To be Announced in Final Schedule***41862****Experimental Analysis for Anaerobic Digestion Efficiency of Bioenergy Facility in Daejeon, Korea**

Han-Sol Yang, Chungnam National University, South Korea

Jae-Hyuk Hyun, Chungnam National University, South Korea

Ki-Kwang Kim, Chungnam National University, South Korea

Chae-Wook Lim, Chungnam National University, South Korea

Since the prohibition of direct landfilling of food waste in 2005, a large number of recycling facilities in Korea have been operated as alternatives. And due to 'London Dumping Convention', prohibiting ocean discharge of sewage sludge, food waste leachate, livestock excretions on 2012, 2013, 2014 respectively, a large amount of organic matter should be treated on land. Since then, the country became interested in anaerobic digestion to obtain biogas as well as appropriate removal of organic wastes. But, local governments have felt difficulties in the operation of facility due to lack of skill and understanding about anaerobic digestion. To solve this problem, we analyzed the efficiency of anaerobic digestion facility operating with mixed feedstock of food waste and leachate in Daejeon and examined the efficiency of treatment for the future. Total average input of feedstock was measured as 353.17ton/day, among which 296.47ton/day was put into the anaerobic digester and the rest 56.7ton/day was headed to landfill site as impurities. In case of IST(Intermediate Storage Tank), ADT(Anaerobic Digestion Tank), and ST(Stabilization Tank) in the facility, the average removal efficiency of TS was measured as 72.5% and VS as 80.2%. Biogas generation was 26,450Nm³/day, the CH₄ content was measured as 63.83%. The amount of biogas, CH₄ generation was analyzed as 0.77Nm³/kg-VS, 0.49Nm³/kg-VS. VS/TS ratio was found to be 87.0%, 72.5%, 62.5% in IST, ADT, ST respectively. This suggests that Methanogen is actively growing in the ADT and the ST, so that the digester operation efficiency is likely to be high.

41873**Computational Fluid Dynamics Analysis of Anaerobic Digestion Facility in Daejeon, Korea**

Ki Kwang Kim, Chungnam National University, South Korea

Jae Hyuk Hyun, Chungnam National University, South Korea

Chae Wook Lim, Chungnam National University, South Korea

Han Sol Yang, Chungnam National University, South Korea

Currently, 'Waste to Energy' policy is one of efficient and stable ways to secure renewable energy that can replace fossil fuels through a change in people's perception of waste and building a sustainable resource recycling society. However, organic wastes such as food waste are still difficult to treat, obnoxious odor is generated, and they may cause concerns to people nearby, which limit the installation and operation of facilities. In addition, even if most of the facilities are well equipped with advanced schemes, if they are operated without understanding and knowledge of biological anaerobic fermentation, there will be problems in controlling the conditions for growth of microbes and ultimately the facilities will cease their operation. To solve these problems, the efficiency of organic waste removal in anaerobic digestion reactor was analyzed, the effect of agitation through CFD simulation was compared and analyzed in the bioenergy facility operated in Daejeon City, Korea. As a result, it is considered that the growth rate of microorganisms and decomposition rate of organic matter are highly dependent on well balanced concentration of microorganisms and organic matter in digesters. During the agitation of feedstock using impulse pump in two digesters, strong turbulence was generated by passing through the perforated plate installed in the digester, and the contact efficiency between the microorganisms and organic matter was maximized, the generated

gas was deaerated, and accordingly the methane content of biogas was enhanced. Consequently it can be concluded that the operation efficiency of the digestion reactor became enhanced.

41877

Mercury Inventory and Flow Analysis From Mercury-Added Products in Korea

Yeji Jang, Chungnam National University, South Korea

Yuree Kwon, Chungnam National University, South Korea

Yongchul Jang, Chungnam National University, South Korea

Mercury has become a chemical of critical concern in international community as United Nations Environment Programme (UNEP) recently adopted Minamata Convention on Mercury as an international action, which was effective in August 2017. It is important to determine the flow and amount of mercury from mercury-added products such as fluorescent lamps, batteries, thermometers, and switches to be phase-out and removed. In this study, substance flow analysis (SFA) and inventory of mercury were performed on the products in Korea. As a result of this study, it was found that approximately 3.0 ton of mercury was generated from fluorescent lamps, while 1.8 ton of mercury was originated from mercury thermometers and blood pressures. Based on the results of SFA, a total of 5.3 ton mercury from mercury-containing products should be properly managed and treated in 2015. waste materials from five different waste treatment and wastewater treatment facilities. In the future, more detailed study on more diverse products may be needed to determine uncertainty of mercury flow from the products such as stocks, flows, and disposal amounts.

41878

Emissions and Reduction of Greenhouse Gases From Solid Waste Toward a Sustainable Society in Daejeon Metropolitan City, Korea

Yuree Kwon, Chungnam National University, South Korea

Yeji Jang, Chungnam National University, South Korea

Yong-Chul Jang, Chungnam National University, South Korea

Mitigation efforts to greenhouse gases (GHGs) emissions from various sectors have been actively being made worldwide toward a sustainable society. In this study, the amounts of GHG emissions and reductions by municipal solid waste (MSW) management in Daejeon Metropolitan City (DMC) in Korea from 1996 to 2026 were estimated by the National GHG inventory guideline. In the past, the major method of management of MSW was landfilling. However, over the past few decades, the rate of recycling of MSW steadily increases. It is very important to quantitatively determine the emissions and reductions of GHGs from waste sectors to identify the major contributors and potential reduction options of the gases. During the study period, the total amount of MSW generated in DMC did not vary significantly. However, the management methods of MSW have dramatically changed; the amount of landfilling decreased by about 90%. The amount of recycling increased by more than four times. As a result, the amount of GHG emissions by MSW management in DMC has decreased by about 47%, while GHG reduction rate by MSW recycling in DMC has increased by up to 140%. The results of this study can be used to develop effective GHG reduction policy in the local government as well as national government. It should be noted that there is an uncertainty in regards to the future GHG reduction from waste recycling and energy recovery depending on actual operational conditions.

41914

Influencing Factors of Energy Intensity: An Example From Hubei Province, China

Hongli Liu, China University of Geosciences, Wuhan, China

Jun Zhang, China University of Geosciences, Wuhan, China

Jinhua Cheng, China University of Geosciences, Wuhan, China

Xi Shen, China University of Geosciences, Wuhan, China

Penghong Cheng, Huazhong University of Science and Technology, China

Energy intensity is a measure of a region's energy efficiency and studying its influencing factors would contribute to energy conservation and the development of a sustainable economy. Based on the time series data of energy consumption in Hubei Province since 2000, this study uses OLS model to identify main influencing factors of energy intensity, including economic development, urbanization, industrial structures and energy conservation policies. After preliminary analysis, our results show that: 1) The overall energy intensity in Hubei Province has declined, but it is relatively high during the whole period, indicating that there still remains room for improvement in energy efficiency; 2) The improvement of income level and urbanization level have had a significant effect on the reduction of energy intensity. The upgrade in industrial structures also have had the similar effect; 3) The implementation of energy efficiency policies and other related regulations have boosted the energy efficiency in this province. In summary, the recommendations are as followings: 1) Increasing investment in advanced and applicable technologies, which could improve industrial technical efficiency and scale efficiency, would significantly improve energy efficiency in the production processes; 2) Upgrading industrial structures and shutting down small enterprises with high energy consumption and low output values gradually would save energy in secondary industry; 3) Increasing the proportion of clean energies and reducing the use of fossil fuels could optimize energy structures and then reduce energy intensity.

41933

Informal E-Waste Recycling in China

Lu Lu, China University of Geosciences, China

E-waste recycling is becoming an urgent and prominent issue in China as its amount is increasing at a startling speed. However, the problem facing Chinese e-waste recycling industry is the informal sector plays a dominant role in this business instead of the formal one. Due to the high risks of environmental and occupational hazards and loss of valuable materials, the informal recycling has long been criticized and restricted from further development. However, the regulations and strategies used to refrain the informal sector hardly work in effect and the formal sector has to compete with the informal business, which to some extent lower the efficiency of recycling in China. The paper intends to explore the inner reasons behind this phenomenon, trying to search answers from the aspects of economy, law regulation and public recycling behavior. The informal sector cannot be replaced by the formal business in the short term and it can make great contribution if its operation can be changed with safety standards.

39103

The Diversity to Reflect Domestic Interests on International Trade Policy: Comparison of FTA Politics in Korea and Japan

Akio Nawakura, Meiji University, Japan

This study asks why both Korea and Japan have protected their domestic agriculture while concluding a series of free trade agreements (FTAs) in spite of their different political structure. Since the 2000s, both Korea and Japan have concluded large number of FTAs with major economies holding less-competitive agriculture at home. Facing the resistance by farmers, both of the two governments have omitted some agricultural products from the list of FTA negotiations. Though they have implemented similar policies, political structure of the two countries is quite different. While Japan has much political space for lobbying, Korea has been pointed out as delegative democracy, a regime which interest groups have limited space for lobbying. In the case of Japan, farm lobby has demanded the ruling party to exclude agricultural products from the list of FTAs or compensate farmers to cover the damage caused by trade liberalization as a precondition to support the party in National Diet elections. In Korea, meanwhile, because the space for lobbying is limited, some major farmers' associations have acted as advocacy groups. They have encouraged public opinion to resist on the governments' rapid liberalization. It has mobilized millions of citizens to act on street to oppose free trade. This has often acted as pressure on the government. As a conclusion, while Japanese farmers have protected their interests by traditional lobbying methods, Korean

farmers have done it by pressuring the government mobilizing public opinion. This indicates that there are diverse routes to reflect domestic interests on international trade policy.

41077

Confidence is a Plant of Slow Growth: The Relationship of Power Distance Orientation, Team Trust, Self-Esteem and Voice Behavior

Wen Ying Chang, Ming Chuan University, Taiwan

Chin Tien Hsu, Ming Chuan University, Taiwan

Pei Yun You, Ming Chuan University, Taiwan

This study explores how voice behavior in the nursing workplace relate to changes in team based self-esteem and trust. According to the social identity theory and Chinese cultural influences, power distance orientation may play an important role in this relationship. The examined model investigated the mediating role of team based self-esteem relations between voice behavior on team trust. Power distance level in this process were also examined to test moderated mediation in these linkages. The final participants were 247 registered nurses with simple random sampling from a medical center in Northern Taiwan. SEM analysis indicated all model fit were acceptable ($\chi^2(147) = 326.64$ ($p < .01$), $\chi^2/df = 2.22$, CFI = .94, TLI = .93, RMSEA = .07, SRMR = .07, GFI = .90, AGFI = .86, NFI = .90), suggesting that team based self-esteem has partial mediation between team trust and voice behavior ($\beta = .17$, $p < .01$). Power distance orientation moderate the indirect effect of team trust to self-esteem ($\beta = .33$, $p = .04$), such that the relationship will be stronger among those who is perceived high power distance. One of possible reasons is that, based on the concept of psychological contract, nurses' self-esteem are depending on one's identification from organization or profession. That is, to improve self-esteem, more less the organizational identification is makes the professional identification more strong.

41389

Usability Problems and Design Solutions of Lego Duplo, Including Bricks and Instructions

Chun-Juei Chou, National Cheng Kung University, Taiwan

Wei-Chun Huang, National Cheng Kung University, Taiwan

LEGO Duplo is an excellent educational product especially for children between 1.5 and 5 years old. However, there are several usability problems which occur when a child is playing with it. Therefore, this study applies graphic design and augmented reality (AR) to solve these problems. Research Process is composed of five steps: 1. Analyzing LEGO Duplo and its instructions 2. Observing how a child is playing with LEGO Duplo and discovering usability problem 3. Developing prototypes for a better design 4. Analyzing and improving the prototype 5. Verification of the research results. Usability problems discovered include blind angles, confused information, wrong direction, incomplete instructions, vague outline, uneven height, loose assembly, and measuring length. Then, design solutions are prototyped as bricks, instructions, and AR animations. Graphic pattern on bricks includes "arrow, alignment, and minimum height markers". They deal with problems including wrong direction, uneven height, and loose assembly. In addition to ordinary instructions, more instruction cards are prototyped. They show completely assembled bricks which is difficult to complete for the child. Each card also works as an AR marker that activates an animation. Each animation with 360 degrees of view helps the child to solve the rest of problems as well as to accomplish brick assembly According to test results, the authors conclude that AR absolutely can solve or reduce most of Duplo's usability problems. However, no acceptable solution to the "loose assembly" problem is found and, unexpectedly, the markers on bricks has limited effectiveness.

41549

A Novel Indirect Cost Compensation Model to Keep Sustainable Development of Research Universities and Institutions

Aruhan, Chinese Academy of Sciences, China

Reasonable compensation of indirect cost(IDC) plays an important role in sustainable development of research universities and institutions. Nowadays, block grant and competitive project funding are two main funding sources of research universities and institutions. IDC is the compensation for public service expenditure from institution to projects. Under-compensation results in project funding crowding out block grant funding, which affect the sustainable development of research universities and intuitions. Over-compensation reduces the efficiency of project funding. In the long term will influence the sustainable development of competitive project funding mode. In practice Completely Differentiated Compensation Model (CDCM) and Non-Differentiated Compensation Model(NDCM) are two typical IDC compensation model. However, both of these models have their own weaknesses. CDCM has the problems of high management expenditure and low system efficiency. NDCM cannot effectively exerts compensation and incentive role due to under-compensation or over-compensation. This study aims to propose a novel IDC compensation model to solve the above problems. Firstly, based on the case study and principal agent analysis of government scientific research funding system, an optimized IDC compensation path is proposed. Secondly, based on the review of the concept and the compensation process of IDC, 9 potential institutional characteristics affecting the level of IDC are proposed. Following that, Through the empirical analysis of 91 universities in the United States, 5 significant institutional characteristics are verified. Finally, A novel IDC compensation model with classification through institutional characteristics as core to keep institutional sustainability is proposed.

40787

Decision Making on Institutionalization Based on Resources, Cultural Differences and Personal Preferences

Amberlyce Ang, Singapore University of Social Sciences, Singapore

This discussion is based on literature review of studies pertaining to successful ageing, home care support and institutionalization in Singapore. The Singapore government adopts the "Many helping hands" approach, in which the government advocates three tiers of assistance (self, community, state), and heavily rely on the Asian concept of filial piety for support to the seniors. Unique to Singapore, is 1)the different forms of support rendered by the chinese, malays and indians, and 2)the employment of Foreign Domestic Helpers (FDH) to look after seniors and allow them to age at home. Even though home care services is available, employment of FDH is a cheaper option. In the past, large multi-generation families look after their elders. However, the increasing population of singles, divorcees, childless married couples and small nuclear families in Singapore, meant that greater support services is needed in place of the absence or lack of "children". Against this backdrop, we argue that the decision for institutionalization cannot be easily made by rational reasons, but are constrained by unique cultural factors. The decision on institutionalization can also be based on individual preferences, and articulated through Advance Care Planning. We also argue that institutionalization by rational deliberation may not always be the preference of the individual. Possible permutations and models based on common profiles of seniors are then proposed as a recommendation for decision making on institutionalization. These permutations will factor in individual preferences, availability of family support and support services for example.

40848**Exploring Components of Wisdom for Japanese Older Adults**

Ayaka Kasuga, Osaka University, Japan

Shinichi Sato, Osaka University, Japan

Masami Takahashi, Northeastern Illinois University, USA

Wisdom is understood as an ability that emerges relatively late in life, and its definition varies depending on the context. This study explored how Japanese older adults conceptualized wisdom. Face-to-face interviews were conducted with 15 Japanese older adults. The results of qualitative analysis revealed five components: (1) problem solving ability (factual knowledge, procedural knowledge, planning skills, creativity, leadership, appropriate behavior, ability to accomplish a goal, interpersonal skills), (2) ability to set up a plan for problem solving (discretion, larger perspectives, intuition), (3) psychological flexibility (rich life experience, intellectual curiosity, reflectivity, capacity to change the mindset), (4) harmony with others (normative attitude, thoughtful consideration for others, a sense of gratitude, altruism, humility), and (5) having a principle (effort based on strong will, having a belief about direction in life). “Normative attitude” and “a sense of gratitude” included in the category of (4) “harmony with others” are worthy of special mention. These components are likely to be based on the “non-split” characteristic of Eastern culture that the self must be understood in relation to the society (Takahashi, 2000). In other words, for the Japanese older adults, wisdom appears to be recognized as not only problem-solving ability, but also an ability to not create interpersonal problems in the first place. These findings are consistent with the idea that wisdom’s definition reflects cultural context, and thus the field must be flexible and inclusive in defining the concept.

40905**4-Week Community Based Knee Exercise Programme is Effective in Improving the Mobility of Elderly with Knee Discomfort**

Wollo Wai Sang Wu, Hong Kong Institute of Vocational Education (Kwai Chung), Hong Kong

Introduction: Aging population is a hot topic in the world and this phenomenon will continue to deteriorate in the future. According to the projection from World Health Organization (WHO), elders aged 60 aged years or above would contribute 22% of the total global population in 2050. Meanwhile, most elders often complain knee discomfort that limits their mobility and quality of life. Thus, an appropriate measure should be taken to promote the mobility of the elders suffering from knee discomfort. The objective of this study is to evaluate the effectiveness of a 4-week community based knee exercise on the mobility of the elders experienced knee discomfort. Methods: 18 elders with knee discomfort (females: 18; mean age: 69.3 years old) were referred by the elder social centre to join the exercise programme. Their mobility and lower limbs function were being assessed before and after the exercise programme by the TUG and LEFS. Pre and Post test comparison was then followed to assess the effectiveness of the exercise programme. Result: There was statistical significant improvement ($p=0.03$; $p<0.05$) in the TUG of the elders after the exercise programme. Discussion: Aging population poses many challenges to the society. Appropriate measures should be implemented in the community to relieve the stress induced. From this study, a 4-week community based knee exercise programme seems effective in promoting the mobility of the elders even they got some somatic complaint over their knee. Hence, elders are encouraged to practice that exercise regularly and then minimize the negative consequence.

41254**The Changing Dynamics of Family Care-Giving for India's Urban Aged Population**

Jayanthi Sethuraman, The Practice, India

Kalyani Subbiah, Curtin University, Australia

A rapidly aging population brings with it the prevalence of chronic and lifestyle diseases in urban India. Studies suggest that a) the elderly population in India is rising (Bhan et al. 2017) & (Lee et al. 2017) and b) the risk of morbidity is proportionately increasing (Bhan et.al, 2017). Despite changes in the social fabric of urban India, family values and affinities make immediate family the first port-of-call for long-term care provision. Changing socio-economic factors in urban India have significantly diminished the occurrence and efficacy of joint families, creating a disproportionate burden of care-giving on nuclear families. The well-meaning inadequacy of family care-givers in nuclear families could lead to inconsistent quality in the delivery of care by them (Kalavar & Jamuna, 2011). In India, the socio-economic context combined with the inadequacy of long term care options compels older parents to depend on their children for care (Kadoya & Khan, 2017). The burdens on family care-givers are fraught with challenges posed by social norms (Ugargol & Bailey, 2018). In contexts where family plays a pivotal role, family care-givers can facilitate the well-being of the elderly (Singh, 2012). Our pilot study aims to understand some of the gaps that exist in care-giving by conducting interviews with a sample cohort of family care-givers in nuclear family settings who have provided care to seniors. This study, could potentially present qualitative trends regarding the cultural contexts of family care-giving in urban India, gaps therein and how this could be better supported by community initiatives.

41619**Using Decision Tree to Analyze the Needs for Active Aging Courses Among the Staff in an Age-Friendly Hospital in Taiwan**

Ya-Wen Chen, National Chung Cheng University, Taiwan

Malcolm Koo, Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Taiwan

Active aging is defined by the World Health Organization as “the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age.” A key to encourage the elderly to be active and participate in the society is through continuing education. However, little is known regarding the characteristics of individuals who have a need for active aging courses. Therefore, the aim of this study was to explore the characteristics of medical and administrative staff in an age-friendly hospital for their needs of active aging courses, using decision tree analysis. A total of 867 respondents completed a questionnaire on the needs for five topics of active aging courses. Decision tree data mining was used to classify the respondents based on their background characteristics. Results showed that the topics with the greatest need was “health maintenance”, followed by “spiritual growth”, “personal safety”, “social life”, and “voluntary services”. Decision tree analysis showed that sex was the most important classifying variable. Job type and participation in previous active aging courses were the two next most important classifying variables. Furthermore, age, expected time of retirement, and perceived health status were also important classifying variables. In conclusion, using decision tree methodology, the staff in an age-friendly hospital was classified into distinct groups. Our findings suggested that a one-size-fits-all approach to active aging courses might not be the best strategy, and different curriculum, matching to the characteristics of the participants, should be considered when developing these courses.

41665**6-Week Chair-Based Dance Program is Effective in Improving Balance and Quality of Life Among Elders**

Florence P.S. Mok, Hong Kong Institute of Vocational Education (Chai Wan), Hong Kong

Introduction: Different forms of fall prevention exercises (e.g. Tai Chi) have been advocated, however, these exercises often involve complex movements and require close supervision that might limit the chance for independent practice by elders. This study aims to evaluate the effectiveness of a chair-based dance (CBD) program to improve balance and quality of life among elders. Methodology: 8 females (mean age = 71.8 ± 5.87) were voluntarily recruited from the community elderly social centre to participate in a 60-minute dance session once per week for 6 weeks. The choreography of the CBD allowed elders to practice the dance movements safely with the support of the chair in both sitting and standing positions. Subjects could practice the dance independently assisted by video. Pre and post-comparisons were used to assess the change in subjects' balance ability by (1) Single Leg Stand Test (SLST), 2) Functional Reach Test), lower limb function by 3) Lower Extremity Functional Scale, and quality of life by 4) SF-12 questionnaire. Results: Subjects' balance and quality of life significantly improved after the participation of CBD. SLST with non-dominant leg (mean change = $13.81 \text{ second} \pm 5.47$; $p = 0.008$) and Physical Component Scale of SF-12 (mean change = 13.69 ± 2.84 ; $p=0.008$) showed the most prominent improvements. Conclusion: 6-week CBD program can improve balance ability and quality of life among older adults. This study shed lights on future implementation of independent practice of fall prevention exercise in community settings in the long run.

41683**Investigation of Teaching Knowledge and Skills on Aging Among Elderly Education Teachers: Association Between Professional Training, Knowledge Cognition, and Needs**

Meng-Ching Hu, National Chung Cheng University, Taiwan

Chia-Ming Yen, National Chung Cheng University, Taiwan

Yi-Fen Wang, National Chung Cheng University, Taiwan

Ya-Wen Chen, National Chung Cheng University, Taiwan

Jui-Chi Liang, National Chung Cheng University, Taiwan

The aim of this study is to examine the teaching knowledge and skills on aging among teachers of elderly education. This study explored the association between professional training, knowledge cognition, and needs. A survey design with stratified random sampling was used to recruit elderly participants from 158 senior education centers and 114 active aging learning centers in Taiwan. A total of 1,632 questionnaires were distributed and 967 were returned, with a response rate of 59.3%. Results of this study included: (1) Female teachers with a university-level education were the majority in both senior education centers and active aging learning centers; (2) respondents who were old, with a higher educational level, and a longer work experience had better teaching knowledge and teaching skills; (3) participation of on-the-job training was associated with teaching performance, but the participation of overall on-the-job training needs to be enhanced; (4) the main sources of professional knowledge on elderly education were gained from workplace experience, and the participation of on-the-job training was associated with training opportunities provided by the government; (5) there was significant association between professional training, knowledge cognition, and needs in elderly education.

41694**Benefits of Functional Fitness Training Programs for Healthy Aging Among Middle-Aged and Older Adults From the Perspective of Active Aging**

Lee-Lan Cheng, National Chung Cheng University, Taiwan

Participation of functional fitness training programs could encourage middle-aged and older adults to learn about social involvement and interpersonal interactions. This could enhance their physiological well-being and happiness, and thereby achieving a sense of self-actualization through contributing to the society. The

aims of this study were to investigate the learning outcomes of middle-aged and older adults who participated in a functional fitness training program and to examine the benefits of this training program from the perspective of active aging. Semi-structured interviews were conducted with nine middle-aged and older adults. Results showed that the functional fitness training program markedly improved the self-management capability of the activities of daily living of the participants. The program also led to positive emotions, improved physical fitness, and mitigated the distress associated with their physical illnesses. In addition, the program helped the participants in developing a habit of exercising. During their aging process, they could maintain mental, physical, and spiritual well-being; stay healthy and safe; take care of themselves independently, and retain their self-esteem. Consequently, family burden and social medical costs can be reduced. In conclusion, care institutions are recommended to implement and promote functional fitness training programs for middle-aged and older adults. The government should emphasize the importance of functional fitness among middle-aged and older adults to ensure healthy aging, and thereby reducing medical expenditures. Future studies should apply the perspective of active aging to explore the benefits of a functional fitness training program for healthy aging among middle-aged and older adults.

41709

Visit-To-Visit Variation in Blood Pressure and Risk of Hip Fracture in Older Adults with Type 2 Diabetes: The Taiwan Diabetes

Tsai-Chung Li, China Medical University, Taiwan

Cheng-Chieh Lin, China Medical University, Taiwan

Chiu-Shong Liu, China Medical University Hospital, Taiwan

Chia-Ing Li, China Medical University Hospital, Taiwan

Introduction Prior studies have found that hypertension is a risk factor for hip fracture and osteoporosis. However, no studies have investigated whether blood pressure variability as measured by coefficient of variation (CV) of blood pressure can predict hip fracture in elderly diabetic patients. **Methods:** We conducted a retrospective cohort study on 21,160 type 2 diabetes elders aged ≥ 50 years who participated in National Diabetes Case Management Program in Taiwan. One-year variation in systolic blood pressure (SBP) and diastolic blood pressure (DBP) at baseline and subsequent hip fracture events over the 8.2 years were analyzed. **Results:** There were a total of 937 incident cases of hip fracture. Patients were grouped into tertiles of SBP-CV and DBP-CV. The incidence rates and 95% confidence interval (CI) for SBP-CV were 4.82 (95% CI: 4.25-5.39), 5.06 (4.47-5.64), and 6.37 (5.73-7.01) and for DBP-CV were 4.75 (4.19-5.31), 5.05 (4.46-5.63), and 6.49 (5.84-7.15) per 1000 person years in the groups of first, second, and third tertile, respectively. After multivariate adjustment, both SBP-CV and DBP-CV were found to be significant predictors of hip fracture, with corresponding hazard ratios of 1.18 (95%CI 1.00-1.39) and 1.18 (95% CI 1.00–1.40) for the third tertile of SBP-CV and DBP-CV, respectively. The joint effect of SBP-CV and DBP-CV produced greater magnitude in effect compared to main effect of SBP-CV and DBP-CV separately as a predictor of hip fracture. **Conclusions** Our study demonstrated the importance of BP stability for hip fracture prediction and prevention in older persons with type 2 diabetic patients.

41713

Attentional Focus and Gait Stability: Implication for Fall Rehabilitation

Thomson Wai-Lung Wong, The University of Hong Kong, Hong Kong

Toby Chi-To Mak, The University of Hong Kong, Hong Kong

Debbie Cheuk-Lam Chan, The University of Hong Kong, Hong Kong

The aim of present study is to investigate the potential effect of different attentional focus instructions on gait stability during level-ground walking in elderly fallers. Forty community-dwelling elderly fallers (mean age=70.6 years, SD=4.9 years) were recruited randomly from different elderly community centres in Hong Kong. The entire experiment included baseline assessments and walking trials. The baseline assessments included Berg Balance Scale, Time Up & Go Test, Fall Efficacy Scale and Mini-Mental State Examination. During the walking trials, each participant was invited to walk at natural pace along a 6-metre walkway for a

total of 9 trials. Either internal focus instructions, external focus instructions or no instruction (control condition) were given in 3 of the 9 walking trials in randomized order. Spatial and temporal gait parameters were measured by Qualisys 3-D motion-capture system. Results suggested significantly higher swing time variability under internal focus condition relative to external and control condition, which suggested that internal focus instructions can deteriorate gait stability in elderly fallers. In addition, slower speed and shorter steps were observed under internal condition when compared to external and control condition. Logical explanation could be related to postural adjustment mechanisms in which fallers tended to adopt a more conservative gait pattern in an attempt to increase gait stability but failed as illustrated in our present findings. Results implicate that instructions that related to own body movements (e.g., internal focus instructions) may not be suitable to be implemented in clinical settings during gait rehabilitation for elderly fallers.

41751

A Study of Creative Reading Program for the Elder Learners: Creative Drama with Picture Books

Yao Tiao Cheng, National Chung Cheng University, Taiwan

The aim of this study was to explore the design and implementation of teaching scheme for the "Study of Creative Reading Program for the Elder Learners". This study used a semi-structured interview method of qualitative research, starting with literature discussion, program project design and implementation, preparation of the interview outline, and followed by re-sampling six respondents for in-depth interviews. Results of this study included: (1) The motivation of participation was mainly out of personal interest and contribution service intention; (2) The creative reading program could be used in the elder teaching, which could produce concrete results with remarkable implementation effect; (3) The reasons for the elder learners to participate in creative reading programs included to fulfill their needs of learning, to enhance creativity, to promote social participation, and to effectively contribute to service. The final recommendations developed from this study included: (1) More diverse design for the "Study of Creative Reading Program for the Elder Learners" should be used. The program could be more deeply integrated into the rich life experience of the elders, the production of creative drama, psychological drama, and other models; (2) For future research, the field of study and object should be enlarged, and research strategy using quality parallelism should be implemented for future planning and promotion of the elder education.

41770

Association of Lower Extremity Amputation and Visit-To-Visit Variations in Fasting Plasma Glucose and HbA1c Among Older Adults with T2DM

Chia-Ing Li, China Medical University Hospital, Taiwan

Cheng-Chieh Lin, China Medical University Hospital, Taiwan

Tsai-Chung Li, China Medical University, Taiwan

Chiu-Shong Liu, China Medical University Hospital, Taiwan

Introduction Elevated glucose level was identified as one of lower extremity amputation (LEA) risk factors, but limited data is available about whether glycemic variability confers independent risk of LEA. The purpose of the study is to explore the association between glycemic variability and the risk of LEA during 8 years of follow-up in type 2 diabetes patients aged 50 years and over. Methods This retrospective cohort study was conducted in 28,127 ethnic Chinese type 2 diabetes older persons aged ≥ 50 years from National Diabetes Care Management program in Taiwan. Glycemic variability measures were presented as coefficient of variation of fasting plasma glucose (FPG-CV) and of hemoglobin (A1C-CV). The effect of glycemic variability on the incident of LEA event was analyzed in Cox proportional hazards model. Results During a median follow-up of 8.9 years, there were 553 incident cases of LEA with a crude incidence rate of 2.4/1,000 person-years. After multivariate adjustment, both FPG-CV and HbA1c-CV were found to be significant predictors of LEA, with corresponding hazard ratios of 1.44 (95% confidence interval (CI): 1.14-1.80) and 1.26 (95% CI 1.01-1.57) for the third tertile of FPG-CV and HbA1c-CV, respectively. In addition, these associations were stronger among diabetic elders with longer diabetes duration (≥ 3 years) compared with

those with shorter duration (<3 years). Conclusions Our study suggests that variation in HbA1c and FPG are both important predictors of LEA among older adults with type 2 diabetes, particularly for those with more than 3 years of diabetes duration.

41911

Gender Differences in the Preparation for Active Aging Life: A Study of Elected Office Holders in Chiayi County, Taiwan

Hsiang-Tin Lin, Chiayi County Council, Taiwan

The aim of this qualitative study was to investigate future planning and planning actions among elected office holders in Chiayi County. Ten elected office holders in Chiayi County were interviewed using an active aging life form developed by Prof. Hui-Chuan Wei. Participants were asked to identify (1) five things that they wanted to do in life (would regret otherwise); (2) five things that they spent the most time on now; and (3) five things they seen as crisis in daily life. Results showed that (1) elected office holders aged under 40 years did not attach much importance to the aging crisis, but women worried that they could not get married; (2) All participants spent most of their time on electoral services and public events. Most of them wanted to spend more time with their families, but actually spent most time with voters; (3) Eight people realized that a gradual deterioration of their body was a crisis in their lives, but only three of them were willing to spend time on maintaining their health; (4) The retirement preparation for active aging in elected office holders was similar to those of the general public – neither early planning nor forward-looking adaptive measures were taken; and (5) While both male and female participants expressed regrets about not having spent enough time with their families, male participants appeared to enjoy spending time on socializing at public events. Only female participants were willing to try to spend more time with their families.

41925

Using Dominant Handgrip Strength as a Fast Screening Tool for Assessing Elderly Balance: A Pilot Study

Florence P.S. Mok, Hong Kong Institute of Vocational Education (Chai Wan), Hong Kong

Introduction: Berg Balance Scale (BBS) is a commonly used clinical assessment to assess elderly fall risk, but it is time-consuming and requires a trained assessor to conduct. Handgrip strength (HG) is a simple assessment to reflect one's overall muscle strength. This study aims to assess the association between dominant HG (DHG) and BBS to investigate the role of DHG to be used as a fast screening tool of elderly balance. Methods: 80 subjects (M=23; F=57; Mean age=78.0±7.7) were recruited from the elderly community centres from three different districts in Hong Kong. DHG was assessed by Jamar hydraulic hand dynamometer in standard sitting position. The elderly balance was assessed by BBS. Subject's demographic and exercise participation (EP) was collected by standardized questionnaire. The association between DHG and BBS was assessed by multivariable linear regression adjusted for age, Body Mass Index (BMI) and EP. Results: Overall, there was a significant association between BBS and DHG (Adjusted R square (AR2)=0.34, p<0.001). BBS was negatively associated with age (B=-0.26, p<0.001) but positively associated with DHG (B=0.24, p<0.001). Interesting gender differences were noted in the association for DHG in predicting BBS was stronger among males (AR2=0.60, p<0.001; B=0.29, p<0.004) than females (AR2=0.25, p=0.001; B=0.21, p<0.039). BMI was negatively associated with BBS in females (B=-0.36, p<0.008) but not in males. EP was positively associated with BBS in males (B=0.63, p<0.042) but not in females. Conclusion: Results of this study showed DHG was positively associated with BBS. DHG could be adopted as a fast screening tool to predict elderly balance, particularly among males.

41952**Structural Board Game Programme is Effective in Improving the Burden of the Caregivers for the Elderly with Mild Cognitive Impairment**

Wollo Wai Sang Wu, Hong Kong Institute of Vocational Education (Kwai Chung), Vocational Training Council, Hong Kong, Hong Kong

Florence Pik Sze Mok, Hong Kong Institute of Vocational Education (Kwai Chung), Vocational Training Council, Hong Kong, Hong Kong

Introduction: Elders with MCI (eMCI), in addition to their suffering from memory impairment, often experience other mood disorders e.g. irritability and depression. Symptoms of eMCI would induce burden on their caregivers, and affect the relationship closeness between the eMCI and their caregivers. However, limited studies are available to address the treatment regime in relieving the caregiver's burden. This pilot study aims to investigate the effectiveness of a structural board games programme (SBGP) to relief the burden of the caregivers of eMCI (CeMCI). Methods: Nine pairs of eMCI and CeMCI (18 participants; males = 7; females = 11) were recruited from a local district elderly community centre to join a 4-week SBGP (60-minute x 2 sessions per week). Cognitive function and caregiving burden were assessed by Montreal Cognitive Assessment (MoCA) and Zarit Burden Interview (ZBI) before and after they join the SBGP. Pre and post within-subject comparison was adopted to assess the effectiveness of the programme. Results: Statistically significant improvement were found in the cognitive function of the eMCI (mean Pre-MoCA = 20.1, mean Post-MoCA = 23.5; p-value<0.001). CeMCI also noted significant decrease in their caring burden after joining the SBGP (mean pre-ZBI = 25, mean post-ZBI = 18; p-value = 0.01). Conclusion This study indicated that a 4-week SBGP was effective in improving the cognitive function of eMCI and reducing the burden of CeMCI by enhancing the relationship closeness between elders with MCI and their caregivers.

Saturday Session I: 09:00-11:00

Room: *To be Announced in Final Schedule*

Stream: Aging and Gerontology

Session Chair: *To be Announced in Final Schedule*

41644

Mortality of the Thai Elderly: Preliminary Findings From Hart Panel Survey

Dararatt Anantanasuwong, National Institute of Development Administration, Thailand

The paper review the mortality situation of the Thai elderly using the panel data from the second wave of Health, Aging, and Retirement in Thailand (HART) Project. The preliminary results of the mortality situations by variations in demographic characteristics, work status, causes of death, and inheritance, debts, and insurance are explored. To reduce mortality or induce life security and healthy life expectancy, the results suggest the policy focuses on improving the socioeconomic equality in regional or urban-rural development, conducting preventive health care, promoting elderly employment, strengthening family institution, and improving financial literacy of Thai people at all age groups.

39491

Evaluating Three Models of Compensating Family Caregivers to Older Adults

Richard L. Kaplan, University of Illinois College of Law, USA

Most long-term care to older adults is provided informally by members of such person's extended family, usually for no monetary compensation. But as traditional notions of inter-generational co-residency and filial responsibility in Asia break down and Western cultural values become more widely adopted, how can family provisions of in-home care be reincentived? Using the United States as an example, this paper employs legal and economic analysis of three mechanisms to compensate family caregivers to assist the aged in remaining in their own home as long as possible. These mechanisms are: (1) publicly funded social insurance to pay informal caregivers, including family members, such as the pertinent provisions of the 2010 U.S. health reform legislation known as the Affordable Care Act; (2) tax incentives to encourage families to pay informal caregivers and thereby leverage private resources with public funds in the form of foregone tax revenue; and (3) legal contracts to pay informal caregivers for the services they provide as employees of the care receiver through "family caregiver agreements." Finding that the long-term care program enacted in 2010 had serious design flaws that exacerbated the economic problem of "adverse selection" and that incentives in the current U.S. tax law impose successive statutory hurdles that limit their effectiveness, this paper concludes that families who want to address the problem of uncompensated caregivers for older relatives should consider caregiver agreements to achieve "second best" results.

40892

East Meets West: Asian Elders' Experiences of Aging-In-Place in a Western Country

Elsie Ho, University of Auckland, New Zealand

Vivian Cheung, University of Auckland, New Zealand

Ell Lee, University of Auckland, New Zealand

Suhina Kaur, University of Auckland, New Zealand

"Aging in place" is a fundamental principle in current ageing policy. With the growing phenomenon of transnational families, increasing numbers of older people from Asia have migrated in late-life to join their adult children living in Western countries; however their experience of aging in a new environment is under-explored. Drawing on in-depth interviews with 40 Chinese, Indian and Korean elders aged 60 to 90

years who have migrated to New Zealand in later lives, this paper investigates the elders' aging experience, in particular what is needed to enable positive aging-in-place for this population. Contrary to traditional filial practices of inter-generational co-residency, some elders in this study are living in close proximity to their children but in separate households. Inter-generational conflict is not the only reason for the elders' pursuit of independent living. Rather, it is also a reflection of the elders' shifting expectation of filial responsibility from their children as they navigate between Eastern and Western cultures. The study suggests that Asian elders' ability to age-in-place is affected by the elders' interactions with multiple environments including housing, family, community and government resources. The majority of participants stress the importance of maintaining core Eastern values of inter-generational inter-dependency, while they also adopt Western ideologies of autonomy and self-reliance, and use of state welfare assistance and community resources. However, barriers to service utilization and community participation impair elders' ability to positively age in place. Findings highlight the need to ensure that ethnic elders' needs are met in policy and service design.

41215

Elder Abuse and Neglect in Indian Society

Richa Kundu, University of Oxford, UK

Elder abuse is one of the most under-researched domain in Indian gerontology. And this research study analyses the extent and prevalence of most common forms of abuse and its impacts. BKPAI datasets have been used to examine the extent and the state-wide variation of different forms of abuse in selected states of India. Which highlighted Maharashtra having the highest number of elder-abuse cases, followed by Punjab, Himachal Pradesh, West Bengal, Orissa. Whereas Kerala and Tamil Nadu had lowest number of cases, revealing region-wise based variation. Then, physical abuse, economic abuse, and neglect were the most common forms of abuse prevalent. Based on bivariate and multivariate analysis, research findings underlined that factors like gender differences, marital status, living standards, place of residence, religion and region have significantly higher odds in terms of experiencing abuse. Thereby, revealing older women who are widowed, divorced and separated; belonging to a particular caste or tribe or to a particular faith; living in rural areas, were subjected to abuse. But with increasing level of educational qualification the odds of experiencing abuse decreased. Therefore, highlighting the need for education and spreading awareness among older people about their rights. Even though Indian government has passed some stringent policies that dealt with curbing elder abuse but the loopholes in existing laws made it difficult for its large-scale implementation. Hence, there is an urgent need to develop and implement effective strategies so as to eradicate such crimes against elder and reduce their plight suffered in silence.

Saturday Session I: 09:00-11:00

Room: *To be Announced in Final Schedule*

Stream: Economics and Management

Session Chair: *To be Announced in Final Schedule*

40913

Addressing Recruiting Challenges: The Case of a Food Manufacturing Company in Taiwan

I-Chieh Hsu, National Changhua University of Education, Taiwan

Jia-Ru Wu, National Changhua University of Education, Taiwan

For nearly a decade with the increasing seriousness of the brain drain and the large influx of foreign workers into Taiwan, enterprises in Taiwan have faced manpower shortage. Therefore, how to attract talents in the talent war has become a challenge for incumbent enterprises. Even more so will be the traditional industries where in the past recruiting new hires is difficult due to the relative wage level, and the opportunities for talent growth. The case company is a food manufacturing company within the traditional industries. During her summer internship, the second author developed a thorough understanding of the sources and methods of the recruitment of the case company and found two pertinent problems. The first concerns the lack of diversity in the channels of recruitment. However, job banks account for up to 90% of new hires. Second, the recruitment process lacks attractiveness, from the perspective of job seekers. With jobs banks as the main channel of recruitment, information on the case company is not fully disclosed and disseminated. As a result, job seekers' interest in the focal company is not aroused, and the focal company cannot attract sufficient numbers of new applicants. Concrete and practical recommendations are provided to address the two challenges. 1. Increase the diversity of recruitment channels, expand talent sources, and properly manage human resource databases; 2. Manage employee turnover and rehire ex-serving employees; 3. Improve attractiveness to job seekers; 4. Conduct employer branding to reap the benefit of word-of-mouth effect; 5. Establish employee sharing platforms to exchange information.

40780

Talent Management Improvement Program: A Case Study

Hui Ting Hung, Graduate Institute of Human Resource Management, National Changhua University of Education, Taiwan

Chi Tai Shen, Graduate Institute of Human Resource Management, National Changhua University of Education, Taiwan

According to field observation and interview methods, we found that the case company has not planned talent management system, only through recruitment and training programs to select and develop talent. Therefore, we tried to compare the various abilities of employees in 2016 and their personality to identify the competencies that each type of employee needed. Use the above analysis and through the observation and interview supervisors to determine potential talent. Finally, according to employees' competencies plan career development and retention plans. We summarize the talent management process as follows: (1) talent inventory, (2) talent classification, and (3) planning career development and talent retention plans by category. We also recommend the case company should adopt the following strategies to plan talent management: (1) motivation and employee development, (2) links and inspiration of employee, (3) attraction and retention, and (4) transformation and sustainable development. In summary, these solutions and strategies may help case company identify potential talent and plan their career development and retention plans. Expecting the suggestions can help more companies to effectively establish talent management systems and strategies.

40829**In Addition to Employee Satisfaction, Which Aspects to Reduce the Turnover Rate: Take Company U As an Example**

Fu-Sen Zhan, Graduate Institute of Human Resource Management, National Changhua University of Education, Taiwan

Chi-Tung Tsai, Graduate Institute of Human Resource Management, National Changhua University of Education, Taiwan

Human resource workers act as a bridge between enterprises and employees. From recruiting to resignation procedure, we need communication, discussion, and negotiation to get a win-win situation, and the major thing that a human resource worker can do is to fill the gap, creating different ways for enterprises and employees to communicate. And, to be precise, from the perspective of human resource, "employee relation" actually means the relation between enterprises and employees, including labor unrest, labor and management relations, reward and punishment system, staff recognition, resignation application and so on. Thus, through exploring variables, we know more about turnover intention, commitment to the organization, and organizational identity of employees. In this independent study, we focus on the satisfaction of employees, trying to analyze their turnover intention, and by doing so, we can realize the practical operation, and provide recommendations for the future.

40884**Health, Wellness and Human Productivity--Unlocking the Power of Design for People**

James Brew, NIKKEN Sekkei, Japan

Around the world, health care and life expectancy have improved radically in the 20th century. However, there is evidence of increased cancer rates and climate change related illnesses and death. Poor work environments and work cultures have also led to disengaged and dissatisfied workers. Can building design really affect human performance? How does an improved office or work environment impact worker engagement and satisfaction? What is the connection between building materials, environment and human health? This paper and session will seek to answer these questions and more. Global green building rating systems are increasingly including new requirements connected to occupant health, wellness and productivity. In order to meet these green building standards, we need to better understand the evidence-based health and wellness interventions that can directly impact worker productivity and well-being. The results of recent research that explores this connection between buildings and the health and wellness of its occupants will support the "business case" for healthier green designs, beyond energy savings alone. Several studies documenting human productivity gains and improved cognitive function will be referenced as evidence to support this topic. Following the presentation, the audience will be invited to participate by sharing their own experience or research related to human health, wellness and productivity.

Saturday Session I: 09:00-11:00

Room: *To be Announced in Final Schedule*

Stream: Sociology

Session Chair: *To be Announced in Final Schedule*

40824

Competing Revolutionaries: Legitimacy and Leadership in Revolutionary Situations

Huseyin Rasit, Yale University, USA

When the Syrian Regime was forced to move their forces from Kurdish regions to other areas ravaged by civil war in 2012, the Kurds found a great opportunity to assert self-rule after decades of oppression. The ensuing power struggle between Kurdish organizations was predictable, yet the outcome was baffling: Whereas many long-existing organizations quickly lost ground, a relatively new and unheard one managed to dominate the rest. The Democratic Union Party (PYD), an organization which had been founded just 8 years ago, grew so surprisingly powerful that its dominance in the region became almost absolute. How did the PYD become the dominant organization against much older competitors in Syrian Kurdistan even though it had rarely drawn attention before the civil war? This paper looks at the question of why and how an organization becomes the dominant actor in revolutionary situations. I argue that an adequate answer cannot solely be about controlling material resources but should instead take legitimacy into account. Drawing upon Max Weber's and David Beetham's theories of legitimacy, I identify three mechanisms of legitimization in revolutionary situations: ideological affinity between an organization and masses; organizational capacity as perceived by masses in terms of meeting the challenges of revolution, and accumulation of symbolic capital. To develop these mechanisms, I use the ongoing Kurdish Revolution in Syria with data coming from interviews with Syrian Kurdish civilians and political figures. The case of the Russian Revolution is also used to test whether these mechanisms can help us explain other situations.

40571

Bangkok Street Food Variety and Its Relationship in Spatial Aspect

Montouch Maglumtong, Navamindradhiraj University, Thailand

In Bangkok, the capital and the largest city of Thailand, street food business provides local with cheap and convenient access to a variety of foods and a means of making a living. Even though, Thai foods are prepared daily in the most of every Thai households, yet, trading food has been a common economic activity since the old days. The development of street food became more functioning and part of daily consumption way of urban living, especially in the city where people spend most of the time outside their houses. Its contributions to urban life go beyond their own informal employment, as it generates demand and supply for a wide range of services provided by other informal and formal workers. This article purposes to examine the relationship between urban dining culture and food varieties in spatial planning aspect with Bangkok as an area of study. Street food business in fifty districts was investigated and analyzed into two parts: food variety and contribution in each land-use type. The initial result shows that urban dining culture relates to street food contribution, but contrasts with the government policy, which concentrates on abolition. This will lead into policy suggestion for the importance of street food in the city.

40862**Taste for Sushi, Culinary Capital, and Cultural Goodwill: A Study in Finland**

Taru Lindblom, University of Tampere, Finland

Pekka Mustonen, City of Helsinki, Finland

Food taste is a fruitful topic for culturally oriented empirical sociology. Using an approach inspired by Bourdieu's study on distinction, this paper examines a particular food preference by looking at taste for sushi. By using logistic regression modeling on a sample from Finland, we find that sushi represents a cultural product that echoes cultural and culinary capital. Those with higher education and income, as well as members of the creative class, like sushi more than others. However, the findings suggest that interaction effect of high income and female gender may lead to what we interpret as "cultural goodwill". This comes forth in the actual consumption patterns that are contrary to the preference patterns: some respondents report not liking sushi yet they eat at sushi restaurants. Thus, sushi can be considered a fitting test laboratory of taste. As a relatively new cultural product it has gained a huge success and has proven to be an arena of social status battle in which the structures of Finnish society are reflected in a very special way.

41968**Exploring the Cultural Diplomacy Initiative Between Cultural Capitals Cities in Europe and Asia: Opportunities and Challenges**

Maxime Jaffré, CNRS - Centre Norbert Elias, France

Elena Raevskikh, CNRS - Centre Norbert Elias, France

Since the 2008 financial crisis, the shaken industrial economy – especially in the West – has not been able to fully recover its initial financial health. As a result, political leaders have started to take a more critical view toward globalization and market driven policies. Many countries have started to look at alternatives to globalization by revaluing and reconsidering the impact of the arts and culture on the cities' economy. Many cities in the world are now attempting to implement these new policies to enhance urban regeneration through culture. Asia did not stay apart from these transformations. Since 2014, the Culture Cities of East Asia (CCEA) program has been launched in several cities of Asia. As the European Capitals of Culture (ECoC) program, the aim of the CCEA is to generate urban and economic renewal through culture. By taking advantage of their distinguishing urban cultural heritage and characteristics, the mayors of cities designated as CCEA seek to promote tourism through culture in neighborhoods that remained poorly integrated in the city's economy. This paper will analyze the effects of urban regeneration in cities designated CCEA. For this, we will explore the following issues: (1) Are the arts and cultural activities useful in revitalizing the economy? (2) How are housing forms related to cultural urban amenities and facilities in the city? Can we find correlations between architecture, the built environment and cultural amenities? (3) What kind of housing environment favors or disfavors the development of urban amenities?

Saturday Session I: 09:00-10:30Room: *To be Announced in Final Schedule*

Stream: Environmental Sustainability & Environmental Management: Freshwater, Oceans and Seas

Session Chair: *To be Announced in Final Schedule***41859****Investigation on Irrigation Water Production by Freeze Desalination Using a Self-Nucleation Crystallizer**

Am Jang, Sungkyunkwan University, South Korea

Hyein Shin, Sungkyunkwan University, South Korea

Brenda Kalista, Sungkyunkwan University, South Korea

Freeze desalination (FD) has the potential to overcome the limitation of other conventional desalination methods. Since latent heat of freezing is 1/7 times less than latent heat of evaporating water, FD consumes less energy than thermal desalination methods. Moreover, the increase in demand for liquefied natural gas (LNG) generates cold waste energy during conversion of LNG to natural gas, which is possible to utilize in FD process. Recently, indirect FD process gained attention because of better stability than direct FD process. Two types of indirect FD process used for fundamental FD research are layer crystallization (LC) and suspension freeze crystallization (SFC). However, Both processes gain low productivity about 30 % which makes FD process is uncompetitive to other desalination methods. Thus, there is a need to develop simplified, time efficient and highly productive FD process. For that reason, we evaluated a new type of simplified and time efficient FD process emitting seeding by applying surface scrapped agitator to bring self-nucleation in one crystallizer unit and enhancing productivity by cyclization for producing irrigation water. We found optimized operational conditions and the optimized washing water rate and applied the conditions to next cycles which treats mixture of washing water waste and brine from the first cycle. Evaluation on total water production rate and average salinity for the ice products enabled to design efficient cyclic FD process to produce desalinated water in the level of irrigation water.

40655**Impact of Roads and Traffic on Water Quality in Atlanta Metropolitan Area, USA**

Jun Tu, Kennesaw State University, USA

Emily Aust, Kennesaw State University, USA

Non-point urban runoff is the major cause of stream impairment in the Atlanta Metropolitan Area, USA. As a major part of the cause, the contribution from anthropogenic activities associated with roads and traffic to water pollution is expected to increase due to the rapid population growth and urban sprawl. However, their impact on water quality has not received much attention from the state and local watershed management plans, and not been studied well elsewhere either. This project studies the impact of roads and traffic on water quality in the watersheds of the study area using GIS (Geographic Information System) and statistical analyses. GIS analyses are used to delineate watersheds using Digital Elevation Models for water quality sampling sites and to derive road and traffic indicators such as Road Density and Vehicle Miles Traveled (VMT), and other factors for each watershed. Statistical analyses are used to examine, quantify, and compare the relationships between water quality parameters (e.g. Specific Conductance) at sampling sites and the road/traffic indicators of the watersheds. The results show that roads and traffic have significant positive relationships with the concentrations of water pollutants. In other words, a high density of roads and traffic in watersheds is associated with a high concentration of water pollutants. This study will contribute to

a better understanding of the impact of roads and traffic on water quality, and provide useful information for watershed management, transportation planning, and land use planning.

40763**Fluorescence Spectroscopy and Parafac Modeling for Assessing the Reduction of THM and Halogenated Volatiles Precursors by Miex Resin**

Panitan Jutaporn, Research Center for Environmental and Hazardous Substance Management, Khon Kaen University, Thailand

Orlando Coronell, Gillings School of Global Public Health, The University of North Carolina at Chapel Hill, USA

This study investigated the applicability of fluorescence excitation–emission matrices and parallel factor analysis (EEM–PARAFAC) for assessing DBPs formation potentials (DBPFP) and their reduction by MIEX resin. Two source waters of different nature -a surface water and a secondary treated wastewater effluent- were studied. 78 EEM samples were generated from the raw source waters and their treatment with MIEX resin at 500-5000 bed volume. The DBPFPs, and their reduction after MIEX treatment, of Trihalomethanes (THM), dichloroacetonitrile (DCAN), trichloroacetonitrile (TCAN), bromochloroacetonitrile (BCAN), dibromoacetonitrile (DBAN), chloropicrin, 1,1-Dichloro-2-propanone, and 1,1,1-trichloro-2-propanone were studied. The results showed that the fluorescence character of the two water sources was represented well by four components. Components C1, C2, and C4 corresponded to humic- and fulvic-like DOM while C3 was previously identified to correspond to protein-like fluorophores. MIEX preferentially removed components C1, C2, and C4 over C3. MIEX was more effective at reducing the formation potentials of THMs (THMFP), haloacetonitrile (HANFP), and halogenated propanone (HPNFP) in surface water than in secondary effluent. Increasing the extent of MIEX treatment (i.e., bed volume of resin) had a smaller impact on components removal and FP reductions in surface water. THMFP and HANFP correlated strongly with fluorescence index (FI), components C2, C3, and C4 ($r^2 > 0.9$ and $p < 0.001$). Two regression models were then developed to relate the fluorescence character of the water sample to its THMFP and HANFP. Our results indicate that EEM–PARAFAC was valuable for assessing DBPFP in surface water and secondary effluent and their treatability by MIEX resin.

Saturday Session II: 11:15-12:45

Room: *To be Announced in Final Schedule*

Stream: Aging and Gerontology

Session Chair: *To be Announced in Final Schedule*

41814

The Transformation of Older People's Images in Comedy Films: Examining a Series of Stephen Chow's Movies From 1990 To 2016

Yen-Chieh Lo, Chinese Culture University, Taiwan

Comedy films, as man-made artifacts, usually use irony, humor or both to attract audience and make them laugh. Russian acting master Constantin Stanislavski noted old men and women in comedy were one of the classical role types. According to the existing literature about ageism, commercial motion pictures and comedic TV programs represented a variety of negative stereotypes against the elderly, which often came selectively from all kind of social interaction in real world. These stereotypes shape our expectations of older people and our own later life in reverse, further distorting our social action. My question is that if the comedic texts of mass media starred, and were directed/written by, the same person in different life stages, would the images of older people in these texts change as time goes by? This study takes a series of Stephen Chow's comedy films since 1990 for example. As a popular comedian in Hong Kong, Taiwan, Mainland China, and even in many parts of Asia, he had starred in many best-selling films targeted at young people and students, and these films have been discussed highly on the internet up until now. I conclude that despite the ridiculous nature of comedy films and the fact that older people often were supporting or marginalized roles, a series of blockbusters in which Stephen Chow played or directed for more than two decades have transformed these stereotypes against the elderly. The more recent these films, the more positive and even more subversive the image of older people.

41816

Why Do They Enhance Lifelong Learning? Sociological Investigation on the Elders' Learning Actions and Processes

Shu Min Chen, Tatung University, Taiwan

Gerontology is a field of science that seeks to understand the process of aging and the challenges encountered as seniors grow older. Gerontologists investigate age, aging, and the aged. Regarding to this stereotypes and the promotion of lifelong learning, it strongly acknowledges that the learning action will empower the elders' successful and active aging in the later life-span. This study explores the elders' learning experience by referring to the 'structuration' theory which proposed and discoursed by the sociologist Anthony Giddens. Alongside practical and discursive consciousness, Giddens recognizes actors as having reflexive, contextual knowledge, and that habitual, widespread use of knowledge ability makes structures become institutionalized. The research approach is qualitative and adopts multiple research methods to attain the solid evidence-based frameworks, expositions and interpretations of the emerging crucial conception of action and structure of lifelong learning for the elders' learning resources, environments and opportunities. The samples for in-depth interview of elders who are older than 65 years old and have engaged in learning and taking courses in the Taiwan's community college more than 5 years. This study leads to abundant discourses and reflections related to the issues of elder learning actions and limitations and the empirical interviews and analysis contribute to a clear and definite direction of future policy making toward a progressive and improvement learning systems for elder learners. With these researching outcomes, we can suggest a sound perspective and policy for ageing society.

41706**Later Life Learning in Singapore**

Kheng Min Ma, Singapore Management University, Singapore

This study provides new evidence that later life learning of Singaporean Chinese in their Third Age is driven by social motives, rather than cognitive interests. The subject was approached from a life course perspective, focusing on the lived experiences of Singaporean Chinese in their Third Age. The ground theory approach was applied to data collected from in-depth interviews. The theoretical sample comprised 21 Singaporean Chinese third agers, ranging from 55 – 65 years old. Data revealed that the Third Age is a period of transition, characterised by changes to perception of time, their role and status in the family and the community, their social relationships, as well as their physical and mental wellbeing. These changes stimulated a heightened awareness of the need to maximise time; to be relevant to others; to age with dignity; to cement existing social relationships and establish new social connections; and to delay the decline in physical and mental capacity. The extent to which these realisations motivated the participants to consider later life learning as a plausible response was moderated by the person's pre-retirement life experience of school, family and career, and individual characteristics such as personality and learning values. The four themes related to social motives include enhancement of sense of wellbeing, being respected and recognised by others; the desire to stay connected to the family and community; a heightened sense of independence; and an affirmation of cultural values of ageing and lifelong learning.

Saturday Session II: 11:15-12:45

Room: *To be Announced in Final Schedule*

Stream: Social Sustainability & Social Justice

Session Chair: *To be Announced in Final Schedule*

41240

Municipal Governance and Politics in Disaster Situations in the Philippines: The Typhoon Haiyan Experience

Jan Robert Go, University of the Philippines, The Philippines

The paper looks at the role of local political leadership in disaster management during the preparation, response, and rehabilitation efforts after the devastation brought by typhoon Haiyan (Yolanda). The focus of this paper is on the leadership, and effectively on accountability, of local officials in their response in the wake of the natural calamity. Two cases are studied: the municipalities of Tanauan and Palo, both are in the province of Leyte. These cases provide two different characterisations of local chief executives and their involvement in disaster risk reduction and management. Also, taken into consideration are the national-local relations and the politics in between. The paper intends to draw lessons from the Philippines experience, which can serve as a guide for other similarly situated countries.

41808

The Policy Implication of the Evolution of Government-Environmental NGO Relations in China Since the 1990s

Jing Xu, University of Delaware, USA

In recent years, government-NGO relations in China have evolved to building collaborative relations with environmental NGOs (ENGOS). For example, the government is now purchasing a variety of service from ENGOS, such as pollution monitoring, and empowering ENGOS to file environmental public interest litigation. This research raises two questions regarding this trend: Why have government-ENGO relations, characterized by strong government control which persisted for more than 20 years, undergone substantial changes? Can a model of this evolution explain the shift from authoritarian to collaborative relationships and enable researchers to evaluate the implication for policy? To answer these questions, this study develops a conceptual framework by relying on insight from historical institutionalism. A model of evolution in Chinese government-ENGO relations will be explored that proposes three closely interrelated stages of development over the past three decades: Environmental Authoritarianism(1990s), Consultative Authoritarianism (2000s and early 2010s), and Collaborative Regulation(Recently). This research attempts to illuminate, test and apply the three-stage conceptual framework by using water pollution control as a case study, seeking to explore the implication for policy development while government-ENGO relations evolve. The case study will support the value and validity of the framework and provide insight into modifying and refining understanding on environmental policy. The research tries to fill a gap by providing a new approach to study the evolution of relations between government and ENGO. It may challenge the current views of government-NGO relations in China, shedding new light on the nature, complexity and the implications of the relations.

40897**A Bumpy Road to Energy Democracy: Citizen Participation and Debate Over Nuclear Power in Korea**

Yousun Chung, Hankuk University of Foreign Studies, South Korea

The Fukushima disaster in 2011 has renewed global attention about the potential danger and risk of nuclear power. However, few Asian countries have opted for nuclear power phase-out thereafter, given the merits and sunk cost of nuclear power industry. This situation prompts some controversial questions: To what extent should a country rely on nuclear power? In what ways can citizens participate in the relevant decision-making process? How can public acceptability of nuclear power be strengthened? Public deliberation is regarded as a device that can be utilized to solve divisive social issues, including the controversy over continued use of nuclear power. In 2017, Korea has adopted public deliberation to decide the fate of nuclear power reactors in Shin-Kori area. As an unprecedented political experiment in the country, the process and result of public deliberation has been met with both of praise and criticism. Based on the analysis of the Korean case of public deliberation in 2017, this paper critically discusses the relationship between deliberative democracy and environmental justice: What are the achievements and limits of public deliberation? How can the balance between political equality and environmental justice be found? What specific efforts are needed to realize “Energy Democracy”?

Saturday Session II: 11:15-12:45

Room: *To be Announced in Final Schedule*

Stream: Economics and Management

Session Chair: *To be Announced in Final Schedule*

40831

The Improvement of Workflow Management and Job Handover Process: Take Company A as an Example

Ting-Hsuan Chou, National Changhua University of Education, Taiwan

The well developed technology of today, not only can office productivity be accelerated, but also management and knowledge base creation and accumulation have been facilitated through an electronic workflow system . Company A reduced the time spent on document delivery by using the electronic workflow system for staff absences and online approval. However, cross-regional business cooperation still relied on telephone communication and e-mail to shared documents by file delivering, if company A could expand the use of electronic workflow system, it will be more convenient for all the staff. And due to the recruit business impacted by Company A's lack of job handover, the researcher found that Company A's job description is complete and therefore the matters to be performed by the department staff are quite clear. There is no major gap in the way of progress management. However, it is still not clear from the problems arising from the transfer method and procedure that there is still some improvement in the workflow system . Therefore, the researcher wants to discuss the reasons behind and put forward specific suggestions.

40828

Motivation and Barriers to Employee Participation in Off-Job-Training - Take Hotel S for Example

Fang-Yu Lin, Graduate Institute of Human Resource Management, National Changhua University of Education, Taiwan

Chi-Tai Shen, Graduate Institute of Human Resource Management, National Changhua University of Education, Taiwan

As the time change and internationalization, tourism industry has developed rapidly. The demand for hotel industry personnel increased. There is a higher standard of language skill, professional competence, and quality of service for employees. Due to the irregular working hours and intensive work schedules, it is a difficult task to promote non-immediate work-related training programs to employees. The researcher got into the hotel industry (Hotel S) to understand why employees have lower learning motivation. According to field observation and interview methods, we found that Hotel S is people-oriented, and its policy links employee welfare with training. Employees can learn language, safety and security, food safety, and other professional skills in company training programs. However, it also let to the conflict between training and welfare. There are several major issues in internal off-job-training: (1) courses offered are not systematic, (2) participants in the course gradually lost, (3) course development will be out of focus, (4) the gap in participants increases the difficulty of arranging course content, and (5) lack of course feedback and evaluation mechanism. Based on the above problems, we proposed some solutions and management approaches: (1) establish an evaluation mechanism and connect it with performance and promotion opportunities, (2) establish online learning and promotion system, (3) select the appropriate regular materials for the course, and (4) establish a feedback mechanism. In summary, these solutions may help Hotel S improve employees learning motivation, participate in training courses, and enhance the skill to meet the needs of work.

40140

Improvement of the Long-Term Evaluation of the Effectiveness of Employees' Training: A Case Study of the H Company

Hsiu-An Hsu, National Changhua University of Education, Taiwan

I-Chieh Hsu, National Changhua University of Education, Taiwan

In the past, Employees training were neglected by enterprises. In recent years, the issue of human resource management has gradually been paid attention by enterprises, so more and more enterprises regards the result of training as one of the key factors to sustainability of company. In this study, the main purpose is to discuss the H company's the way of employees' training implementation and training evaluation model. H company used the learning evaluation model proposed by Donald Kirkpatrick to evaluate the training effectiveness. They can implement in the first and second level, but they can not effectively implement in the third and fourth level. However, the most important of training is the evaluation of training effectiveness. If the case company would like to know the impact of employees' training, it must improve the evaluation method. Therefore, this study integrated the most commonly used evaluation models of enterprises and analyzed the most suitable evaluation model for case company. Finally, proposing suggestions for improving the current situation of case company and the conclusions.

Saturday Session II: 11:15-12:45

Room: *To be Announced in Final Schedule*

Stream: Interdisciplinary Perspectives on Gender

Session Chair: *To be Announced in Final Schedule*

39552

Body Image, Sport Involvement and Physical Activity: An Examination of Gender Differences

Ho Keat Leng, Nanyang Technological University, Singapore

Philip Phua, Nanyang Technological University, Singapore

The literature on satisfaction with body image have suggested that there are differences between genders and that there is a relationship between satisfaction with body image and the motivation to participate in physical activity. The aim of this study is to examine whether sport involvement i.e. identification with the domain of sports affect satisfaction with body image. 140 respondents from a tertiary educational institution were recruited for this study. Respondents completed a survey instrument which captured data on their satisfaction with their body image using Stunkard's body image scale, level of sport involvement, and level of physical activity measured by the International Physical Activity Questionnaire (IPAQ). The difference between the perception of present body image and ideal body image was used as the dependent variable for this study. Removing respondents with incomplete responses resulted in 97 (69%) usable responses. Independent t-tests were conducted to compare differences across genders. Female respondents (n=27) who were high in sport involvement reported a significantly lower level of dissatisfaction with their body image (M=-.67, SD=.48) when compared to female respondents (n=25) who were low in sport involvement (M=-.96, SD=.68; $t=-1.79$, $p=.04$). There was no significant difference amongst male respondents. Further analysis showed that there was no significant difference in satisfaction with body image across groups with varying levels of physical activity. This suggests that being involved in sport can affect satisfaction with body image among females.

41921

The Verbal Sexual Violence and Nationalism: A Case Study in Sunflower Movement

Yin Ru Chen, Washington State University, USA

In 2014, students launched Sunflower Movement to protest against the illegal hearing process of Cross-Strait Service Agreement on Trade in Service (CSSATS). Media opposed to the Movement generally criticized the Movement based on morality, legitimacy, and economic aspects. But only one TV company chose to degrade the Movement by accusing the protesters of joining the Movement for sex: the TV company claimed that the female protesters were "too sexy" and male protesters joined the Movement to have sex with them. The sexual insult against those female protesters was illegal and immoral. Why did the TV company choose to sexually insult the female protesters regardless of the social and legal cost? This research serves to figure out the cause of the sexual insult against the Sunflower Movement through feminist approach. Feminist theories argue that the way that nationalism defines women makes attacking women's sex become an effective strategy to defeat and humiliate opposite communities. Based on this argument, the clash between the TV company's pro-Beijing political preference and the Taiwanese-nationalism nature of the Sunflower Movement led to the sexual insult because the TV company considered the Sunflower Movement as a provocation to Beijing government and Chinese nationalism. The finding indicates that the more the political preference of mass media relates to nationalism, the higher possibility they resort to verbal sexual violence to attack the objects from opposite communities.

39334**Sustaining Interconnectivity: Applications of Care Theory and New Materialism in Ecofeminist Fiction**

Karen Ya-Chu Yang, Tamkang University, Taiwan

New materialism and care theory are two developing trends in ecofeminist studies. The call for a materialist turn in feminist studies argues for the reconceptualization of nature, human, and non-human relationships by interactively balancing material elements with social constructions. Emphasis on the physical, emotional, and material connectivity between humans, nonhumans, and nature is another vital emphasis of feminist approaches to science. For instance, Lori Gruen's "entangled empathy," Deane Curtin's conceptualization of compassion, and Martha C. Nussbaum's discussion on compassion and judgment all similarly argue for the need to cultivate blended moderations between emotion and reason, affect and cognition. Empathy towards nonhuman others induces humans to care to learn about and learn from other participants of our world to responsibly strive towards a more sustainable future. Addressing these developments, this paper observes the challenging role of female conservationists and organic farmers and their pursuit of empathetic and transcorporeal interconnectivity between bodily natures as depicted in Barbara Kingsolver's novel *Prodigal Summer* (2000). The three storylines in the novel start with the battle of conflicts and end with compromises achieved through reciprocal communications between humans and nonhumans, forest and field, as well as women and men. The female protagonists' practice of science undermine hierarchical dichotomies and boundaries in favor of intersectionality and multiplicity by taking into account the material, ethical, and emotional interconnectivity and interdependency in humans' understanding of and engagement with the natural world and its various inhabitants.

Saturday Session III: 13:45-15:45Room: *To be Announced in Final Schedule*

Stream: Aging and Gerontology

Session Chair: *To be Announced in Final Schedule***41024****Ageing in a Different Place: Negotiating Neighbourhood Change in Later Life**

Aaron Wyllie, Monash University, Australia

Bernadette Saunders, Monash University, Australia

Place attachment, and the memories, relationships, and connections it embodies, is known to contribute to wellbeing in later life. Much existing research has focused on identifying aspects of the neighbourhood environment which promote place attachment in later life, yet little attention has been given to the role that neighbourhood change processes, such as gentrification and demographic transformation, have in shaping this relationship. Understanding responses to neighbourhood change is vital for achieving the vision of an age friendly world in which older citizens remain engaged, visible and valued members of our communities. This presentation will provide some preliminary insights on this topic, drawing on findings from a study involving multiple in-depth interviews with eleven older adults living in a single municipality of inner-Melbourne, Australia. With an average length of residence of nineteen years, participants had lived through a period of rapid gentrification and sociodemographic transformation. For many participants, these neighbourhood change processes disrupted established routines, social networks, and activities, contributing to a sense of disconnection and withdrawal from the community they once knew. A second subset of participants noted similar neighbourhood changes but were able to adapt through forming new social networks and cultivating different spaces of belonging. Several individual and structural factors were found to influence older adults' responses to neighbourhood change, powerfully shaping their later life experiences. Practice and policy recommendations emerging from this study will be presented, each focused on supporting older adults to negotiate neighbourhood change and promoting communities which are inclusive of older citizens.

41960**Exploring the Efficacy of Independence Index for Healthy Aging for the Services of Elders**

Ying-Ying Chen, National United University, Taiwan

This study explores the risk and reinforcement factors of successful healthy aging by interviewing managers of elderly colleges and day care institutions for the disabled elderly. With a purpose to build an index of independence for the elderly, this study tries to help them to achieve the goal of taking care by themselves when facing different stages of aging process. The three elements of successful aging, lower risks of diseases and disability, high physical and mental function, and engagement with life, are applied to define the index of independence which is measured by asking 16 questions for the elderly by four dimensions: physical condition, psychological condition, self-learning condition, and social engagement condition. In-depth interviews are conducted for 16 managers of elder colleges and daycare institutions for disabled elders in this quantitative study to improve this independence index. Through these interviews, the efficacy of the independence index is defined by how this index can help these managers to explain how their participants can fit their programs or change to other programs for the purpose of switching institutions for a successful integrated care system of the elders.

39600**Physical Fitness of Older People in European and Asian Culture: Differences Between Germany and Vietnam**

Volker Cihlar, Federal Institute for Population Research, Germany
 Hung Manh Nguyen, Vinh University, Vietnam

The increase in life expectancy is a global phenomenon, which is not uniform in all countries. Life expectancy at birth (e_0) in Germany is around 5 years, but later life expectancy at the age of 60 (e_{60}) is only 1 year higher than in Vietnam. This presentation deals with the question of whether older people in Germany and Vietnam differ in their physical fitness and how this reflects the reduction in the difference in life expectancy from e_0 to e_{60} . Physical Fitness was examined with the Senior Fitness Test on a German ($n = 159$, age = 72.2 years) and on a Vietnamese ($n = 96$, age = 69.0 years) sample. Linear stepwise regression analyses and ANOVA inner subject effects show differences in fitness levels under control of socio-demographic predictors. The Vietnamese sample showed significantly higher levels in leg strength, endurance and upper limb mobility even after age control. Moreover, while the fitness level of the German sample decreased with age, the physical fitness of the Vietnamese sample remained comparably stable over age groups. The superior motor performance of Vietnamese seniors could provide an indication of increased daily physical activity in Vietnam and reflect the convergence of life expectancy from e_0 to e_{60} through a more active lifestyle in comparison to Germany. This presentation discusses the influence of cultural differences in the area of bridge employment and lifestyle on fitness. The Asian lifestyle could be superior to the European in terms of health and motor ability in old age.

41930**Current Support and Anticipating Future Needs of Ageing Caregivers and Their Ageing Adult Children with Intellectual Disability**

Lisa P.L. Low, Caritas Institute of Higher Education, Hong Kong
 Kayla K.Y. Wong, Caritas Institute of Higher Education, Hong Kong
 Lai-wah Lam, Chinese University of Hong Kong, Hong Kong
 Wai-tong Chien, Hong Kong Polytechnic University, Hong Kong

Aim: To describe current support received and anticipated future needs of ageing caregivers of ageing adult children with intellectual disability (ID) in order to help inform the development of appropriate services and interventions to enable them to continue to live comfortably. **Methods:** A qualitative interview study was conducted on 60 ageing family caregivers of their adult children with mild or moderate ID who were using sheltered workshops in Hong Kong. Audio-taped interviews lasting for 45-90 minutes were content-analyzed. **Results:** Sheltered workshop was the major source of service and relief for the caregivers and their adult children with ID. While many caregivers described the reliance on the family and social support to release caring stress and emotions, some of them faced the difficulties and hardships alone owing to the loss of spouses or poor family relationships. It was the sheer personal strengths and positive coping strategies that moved them on and delayed contemplating long-term care. To embrace the situation of 'double ageing' in the near future, hopes for supportive services in the medical, financial and accommodation aspects shall be discussed. **Conclusion:** Findings can provide understanding of current support and future needs of ageing caregivers and their offsprings with ID. Listening to the caregivers can gain insights into the authentic daily life issues, and identify timely and appropriate services to target at their actual needs in the long-term care journey, especially to be better prepared for the 'double ageing phenomenon' that involve both parties.

Saturday Session III: 13:45-15:45Room: *To be Announced in Final Schedule*

Stream: Education and Social Welfare

Session Chair: *To be Announced in Final Schedule***41499****Enriching the Voice of Non-Musical Students (Diploma in Theatre) Through the Use of the Suzuki Method**

Junita Batubara, Universitas HKBP Nommensen, Indonesia

Sumathi Maniam, Universiti Pendidikan Sultan Idris, Malaysia

An educator is responsible in transmitting knowledge, technology and values to the community through the process of teaching and learning. Credit hours are accumulated based on the current curriculum while transformation take place during lectures. Teknik Nyanyian or rather Singing technique is one of the minor course available to the diplomas of the theatre course in UPSI. This course is vital in shaping the talent, mindset and the disposition of the students. Singing technique is a minor subject that is offered to the undergraduates of diploma in theatre in line with the education curriculum in UPSI. In order to produce accurate singing techniques, a singer needs to focus on breathing techniques, notation/melody, tempo, rhythm and articulation. Based on the data collected, the students have never been exposed to music notation and introduction to formation of sound / frasering. 35 students were selected from the theatre department for the purpose of this study. Qualitative and quantitative methods were used to collect data in which the Suzuki method was used to teach singing technique. The findings of the study show that the Suzuki method was instrumental in teaching singing technique.

41949**Vision Planning and Autonomous Learning for Innovative Education Challenges of the CCI in the Digital Age**

Ying-Ying Chen, National United University, Taiwan

From the viewpoint of education, colleges of Humanities have been facing the challenges about how to connect job market with their curriculums. This study designs an innovative teaching approach by focusing on vision planning and autonomous learning for the production of media content from perspectives of CCI (Cultural Creative Industry). After the application of this teaching innovation, the study finds that motivation and relevant experience of students are two main factors to predict the success of this innovative teaching. This study suggests that learning motivation enhancement is encouraged to help students to learn autonomously with an emphasis on vision planning.

40987**Mutual Help or Social Responsibility of Higher Education?: A CJCU Experience**

Chaohsing Huang, Chang Jung Christian University, Taiwan

Chialin Tu, Chang Jung University, Taiwan

Jing-Li Hong, Chang Jung University, Taiwan

In 2009, Typhoon Morakot caused severe damage to the mountains in Kaohsiung, Taiwan. Laulong was one of the villages affected by the typhoon. While all the communities have made all the efforts to restore their infrastructure and livelihood, Laulong village has its unique mission, to restore the history and culture of their own. The residents there identify themselves as "Tavorang Tribe" whose ancestors were from other areas. After emerging with other people, they are gradually losing their tribal language. They have come to realize

that their traditional rituals and tribal history are at risk of extinction; thus, they have endeavored to conserve and reconstruct their heritage. Chang Jung Christian University (CJCU) has involved in reviving these areas after Morakot. The department of applied philosophy targets at this community as the educational field to practice social responsibility and participation. We think that the way to flip educational field requires taking students into the society. The purpose of this paper is to share the teaching experience of the past and students' learning outcomes. This paper will give introduction to how a university try to utilize resource from the government to work with a community, while claiming to fulfill social responsibility, were actually received mutual benefits.

41942

Addressing Social Needs Through Remote Based Design Thinking

Hoe Chin Goi, Nagoya University of Commerce and Business, Japan

Yuki Hara, Keio University, Japan

Wee Liang Tan, Singapore Management University, Singapore

Shuichi takano, Tokyo Land Corporation, Japan

With ageing as the coming and increasing phenomenon in Japan, there is a need for innovative solutions for seniors to lead active lives in their residing communities. Little research has been conducted on the use of design thinking as a means to develop social innovations, especially with the designers not being present on-site from a distance. This paper reports the study on the effectiveness of employing a remote based design thinking in a university course with the goal for participants to develop social innovations that elderly, as stakeholders, would be engage to adopt and implement. The study involved two cohorts of participants in a design thinking course at the Nagoya University of Commerce and Business, where the participants were asked to employ design thinking to develop social innovations for two regional communities in Japan without them visiting. Findings from the comparison of the two cohorts show that higher social innovation occurs if the participants have clearly identified target users and addressed the needs of seniors. Future research is needed to better understand how cultural differences enhance or hindered the design process especially as the users come from a Japanese culture while most of the designers are international.

Saturday Session III: 13:45-15:45

Room: *To be Announced in Final Schedule*

Stream: Teaching and Learning

Session Chair: *To be Announced in Final Schedule*

40491

Multicultural Learning in Maritime Higher Education: The Case of World Maritime University

Anne Pazaver, World Maritime University, Sweden

Momoko Kitada, World Maritime University, Sweden

This paper explores how multicultural learning environment can affect the experiences of international students and help them to equip intercultural communication skills. The World Maritime University (WMU) is a postgraduate United Nations' (UN) specialised university in Malmö, Sweden. Its main programme is a 14-month MSc in maritime affairs in which approximately 130 international mature students from over 45 different countries enroll every year. While sharing the common professional backgrounds within the maritime industry, students find this multicultural learning environment challenging yet interesting. To understand the multicultural learning impact on the students, the study was conducted by two qualitative methods: a focus group and observations. The participants emphasised the importance of shared spaces, such as a kitchen, in terms of deepening the mutual understanding. Inspirations from different cultures brought some students positive experiences in intercultural communication and eventually build a sense of "family" among them. Such bonded relationships seem to be helpful to overcome various obstacles throughout the 14 months of their study. The paper concludes that the first couple of months are extremely important for international students to establish the foundation of their study. Positive experiences in intercultural communication tend to influence the proficiency of English as a common language as well as the levels of satisfaction and success in their academic lives. It appears that multicultural learning experience offered by WMU will help future maritime leaders to cultivate intercultural communication skills which can strengthen their confidence in advanced maritime technical knowledge and skills gained in the formal education.

40623

Moving Beyond the Mill: Application of Eclectic Approach to Improve Teaching English as a Second Language to Tertiary Level Learners

Disna Darshani Nanayakkara Nanayakkara Badungodage, University of Sri Jayewardenepura, Sri Lanka

Teaching English as a second language has been among the few persistent failures in the Sri Lankan education system nearly for six decades. The dogmatic devotion to limited approaches, inadequacy at theoretical, creative practical expertise of teachers and learner isolation have been negatively affected the scenario, where tertiary level learners are at a dire stake, against the exceptionally competitive employment market. Hence, need of a complementary holistic approach is a demand of the time, to compensate the gap and to empower the intellectual youth of the island. Thus this study endeavoured to investigate the effect of the application of principled eclectic approach as a teaching pedagogy on the performance of the tertiary level learners following English as a second language in Sri Lanka. Experimental research design was utilized having based on the theoretical principles of Kumaravadivelu's Micro Strategic Framework of Post Method Pedagogy, Input Hypothesis and Affective Filter Hypothesis of Krashan's Theory of Second Language Acquisition. The simple random sampling method was used to select 100 first year students from the University of Sri Jayewardenepura Sri Lanka, and divided into control and experimental groups having 50 in each. The study was conducted for 15 weeks and Pretest Posttest Equivalent Group Design was used to collected data. Both descriptive statistical tools, i.e., mean, standard deviation, inferential statistics, i.e., t

test were used to analyze the collected data. The results of the study indicated that principled eclectic approach has a significant effect on the learner performance against traditional method of teaching.

41884

Comparison Analysis Between EBMgt and EDMed Teaching: A Perspective From Evidence-Oriented Assisting Resources

Wen-Hsiung Wu, Kaohsiung Medical University, Taiwan

The movement of evidence-based management (EBMgt) is progressing for resolving the research-practice gap. Due to its importance and potential impacts on future business education, while EBMgt is still at its infancy, more efforts should be made to take lessons from other well-developed fields such as evidence-based medicine (EDMed). This study first presents a comparison analysis between EBMgt and EBMed on the perspective of evidence-based assisting resources. These resources include textbook, EBM center, database, journal, assisting toolbox and tools, association/society/network, working group/task force, and e-learning platform. Then, we provide some insightful findings and recommendations as a guideline to enhance further EBMgt teaching.

39621

Sustainable Education: Harnessing Technology for Equitable Access

Yvonne Masters, University of New England, Australia

In a world plagued by schism - economic, cultural, environmental, etc. - education for sustainability has gained global traction as one way to combat this. However, while education for sustainability seeks to engage learners with envisioning a future where the needs of all are met and where all can thrive, there is still an issue to be addressed. In order to have education for sustainability there must be sustainable education. It is well documented that students who live in rural and remote areas have less access to resources and frequently schools in these areas have difficulty in attracting teachers in some subject areas. Technology is helping to bridge the gap and make education in these areas more sustainable. This presentation looks at two research projects undertaken in Australia which have the capacity to provide more sustainable education not only for rural students but also for those isolated in other ways such as illness, incarceration or special needs. The first project was conducted in a virtual world to demonstrate a sense of community online through the use of avatars. The second project was designed to provide preservice teachers with the skills necessary to teach solely online into virtual schools. Both projects harnessed the affordances of technology to provide more equitable, and therefore sustainable, education access for students who might otherwise have been disadvantaged assisting these students to thrive in a currently inequitable world.

Saturday Session III: 13:45-15:45Room: *To be Announced in Final Schedule*

Stream: Economic Sustainability: Sustainable Businesses and CSR

Session Chair: *To be Announced in Final Schedule***40917****Commercial Repair as an Approach to Sustainable Business**

Tung Dao, Nottingham Trent University, UK

Tim Cooper, Nottingham Trent University, UK

Christine Cole, Nottingham Trent University, UK

A large number of consumer goods are disposed to landfill or left unused because of decreased performance or breakage. However, many such barriers to repair come from the business perspective such as unwillingness to provide repair services, inconvenience to repair, lack of access to spare parts and of appropriate information on how to carry out repairs. Businesses generally promote technological improvements and fashion changes through built-in obsolescence designs and persuasive marketing campaigns to drive their profits from sales. Business model innovation is an important lever for creating responsible markets with sustainable production and consumption behaviour. Therefore, promoting repair as part of business could, in theory, generate profit, in addition to greater customer loyalty. This study aims to identify and map constraints and opportunities for improving the availability and accessibility of repair services. The research will explore the consumer and business repair decisions throughout the repair journey. This journey depicts both visual and physical activities of different actors engaging in repair services including repair and customer services, suppliers, producers and consumers. Semi-structured interviews will be conducted with independent repairers, retail repair services and consumers. These interviews will help investigating how businesses develop commercial repairs sufficiently to facilitate repair choices over replacement. Systematic factors such as strategic collaborations and communication development that could create a relevant business capacity and a pro-repair environment in the economy may also be identified at the national and global level. This research will provide evidence for future research, policy makers and businesses interested in commercial repair.

40684**Sustainable Finance in the Philippines: An Exploratory Study**

Felipe Calderon, Asian Institute of Management, The Philippines

Wilfred S. Manuela Jr., Asian Institute of Management, The Philippines

This study investigates the low adoption of sustainable finance in the Philippines. While financial intermediaries in Europe and North America have been financing sustainable projects, the United Nations Environment Programme Finance Initiative (UNEP FI) reports that there is a low uptake by financial intermediaries in Southeast Asia, in general, and in the Philippines, in particular. The UNEP-FI's concern demonstrates the critical role of financing to achieve the agenda and goals of sustainable development. There is, therefore, a need to develop a strategy to encourage financial intermediaries in Southeast Asia to join the sustainable finance initiative. The data set consists of 36 commercial banks in the Philippines. We use the phenomenological approach to explore bankers' understanding of sustainable finance, which provides unique insights into the perceptions and experiences of bankers in their daily professional lives. Based on our findings and analysis, we suggest some recommendations in the formulation of a sustainable finance strategy in the Philippines. The paper contributes towards the development of a theory of sustainable finance grounded from a Philippine and Asian perspective, which may facilitate related studies in Southeast Asia.

41924**Outcomes and Key Factors of Success of Implementing ISO 14001 Environmental Management Systems in UAE Public and Private Organizations**

Sandra Knuteson, American University of Sharjah, UAE

Marie Waxin, American University of Sharjah, UAE

Aaron Bartholomew, American University of Sharjah, UAE

Worldwide, ISO 14001 certification for organizations has become the norm, while the Arab world accounts for an insignificant portion of those certified. A dearth of research exists on Environmental Management Systems in Arab and emerging countries or in public organizations. Key factors of successful adoption are rarely addressed thoroughly in the literature. To date, no studies, to our knowledge, have examined the outcomes and key factors of success (KFS) of ISO 14001 implementation in an Arab country. The objectives of this research are to examine the major outcomes and KFS related to implementation of ISO 14001 certification in the United Arab Emirates, an emerging Arab country and compare/contrast these between UAE private (PRI) and public organizations (PUB). We adopted an explorative, qualitative methodology, using semi-structured interviews with environmental managers in 14 organizations (7 private, 7 public) from different industrial sectors. Our findings show that the major, shared outcomes of ISO 14001 adoption are improved 1) image, 2) cost-efficiency, 3) relationships with regulators, 4) profitability, 5) employees commitment, and 6) stakeholder relationships. All these outcomes were even more frequently cited by public organizations. The major KFS are 1) managers' support, 2) employees competence and involvement, 3) government incentives and regulations, 4) budget, 5) continuous improvement, and 6) consultants. These KFS were shared among private and public organizations, but the third was more important for PUB, and the sixth was more important for PRI. Implications for managers, academics, consultants and policy makers in the UAE and other emerging markets are discussed.

41660**Strategies for Corporate Renewable Energy Procurement**

Jerry I-H Hsiao, University of Macau, Macao

I-Chun Hsiao, Independent Scholar, Japan

The market for renewable energy among corporations has been driven by corporate social responsibility (CSR) objectives, continued cost reductions in renewable technologies, and more flexible regulation. As such, corporations have signed agreements to purchase 5.4GW of clean energy globally in 2017, up from 4.3GW in 2016. To date, 127 companies have committed to the RE100 initiative, where signatories commit to power 100% of their electricity demand from renewable energy. The Americas is dominant region for activity due to liberalized power markets, which has lead companies headquartered in the U.S. (e.g. Facebook, Google, and Apple) to become the world's leading players in renewable power procurement. Nevertheless, these activities are also having an impact in Asia. For example, Apple has pledged to decarbonize not only 100% of its own power demand, but to also move 100% of its supply chain (most of which resides in Asia) to renewable energy. Physical/virtual power purchase agreements (PPAs) are now the favored tool for bringing new renewable energy onto the grid but other mechanisms such as green tariffs, renewable energy credits (RECs), and direct investments also play a role. In this article we look at the mechanisms RE100 companies have applied to reach their current renewables progress, analyze the strategies these corporations can use to meet their targets, estimate how much clean additional clean energy will need to be procured, and the level of investment required by 2030 for the renewable energy target to be met.

Saturday Session IV: 16:00-18:00Room: *To be Announced in Final Schedule*

Stream: Aging and Gerontology

Session Chair: *To be Announced in Final Schedule***40849****Facilitating Meaningful Activities and Relationships: Designing Dwellings and Communities That Improve the Quality of Life of the High-Needs Elderly**

Yukiko Kuboshima, Victoria University of Wellington, New Zealand

Jacqueline McIntosh, Victoria University of Wellington, New Zealand

Geoff Thomas, Victoria University of Wellington, New Zealand

As the population ages, there are greater demands for housing and communities that support independent living for the high-needs elderly. This research qualitatively examines the meaningful activities and relationships of 30 residents requiring assistance in senior housing complexes in New Zealand. Using semi-structured interviews and direct observation, data was gathered on both the perceptions and spatial use of those activities which are significant contributors to Quality of Life (QoL) and are also greatly influenced by the design of living environments. Emergent themes for meaningful activities and relationships included a desire for: a variety of activities motivated by familiarity; keeping active/able; privacy; maintaining relationships with family friends, other residents and staff; and a connection with, and contribution to, the wider community and nature. Factors such as safety, support availability, connection and privacy, as well as the influence of impairments and personal preferences have relevance for design. The research finds that the design of personal dwellings has a significant impact on the ability of the high needs elderly to maintain their QoL. In the design of individual dwellings, spatial solutions are required to provide greater control for personal activities as well as increased flexibility for social activities within limited interior spaces. As a decline in mobility is commonplace for those with high needs, greater attention is needed to resident walkability. Improvements in QoL can be achieved both through a reorganisation of the home and through bridging the home with the wider community and in doing so, facilitating meaningful activities and relationships.

40388**Successful Aging for Labor Migrants: Truths and Consequences**

Michelle Ong, University of the Philippines, The Philippines

Gender, age, and migrant status intersect in important ways in migrant women's lives, shaping their options, decisions and, ultimately, their changing bodies. Their health status, economic status, family relations, etc. together determine the material and discursive resources available to them. This presentation is based on a larger project on the embodiment of aging of Filipino women who were former labor migrants. Older Filipina migrants who have returned to the Philippines permanently are different from elderly non-migrants and elderly migrants typically described in the literature, and have their own unique set of opportunities and challenges as shaped by their particular social location. Using thematic analysis with attention to discourse on data from semi-structured interviews, I look at how "successful" aging is defined and embodied, and focus on the tension between discourses of individual responsibility and chance/luck that the participants drew on to make sense of their experiences of growing old in their home country as former Bagong Bayani (---literally, "modern-day heroes", a term widely used in the Philippines to refer to overseas Filipino workers). I will argue that while the discourse of individual responsibility is powerful and can be seen to be empowering, the reality of precarity in these former labor migrants' lives and the difficulties of achieving successful aging make the discourse of chance highly salient. This discourse of chance allows women to

negate constructions of migrants as wholly responsible for their successes and failures, and claim a positive subjectivity despite being unable to achieve successful aging.

41929

How Do Senior Staff Shape Management Styles in Residential Care Homes for Older People?

Lisa P.L. Low, Caritas Institute of Higher Education, Hong Kong

Kayla K.Y. Wong, Caritas Institute of Higher Education, Hong Kong

Margaret M.L. Pau, Caritas Institute of Higher Education, Hong Kong

Eric S.L. Chan, Caritas Institute of Higher Education, Hong Kong

Aim: To examine the respective roles and responsibilities of senior staff to understand the part they play in directing and influencing the management styles they adopt to handle different situations in residential care homes for older people. **Methods:** As part of a larger qualitative study on leadership and management in residential care homes, this presentation shares the preliminary data of nine senior management staff members (superintendents, assistant superintendents, social workers and registered nurses) from two conveniently-selected residential care homes for the elderly in Hong Kong. Audio-taped interviews lasted 45-60 minutes and non-structured participant observations were content-analyzed. **Results:** A preliminary framework is depicted of the various roles, duties and responsibilities adopted by senior management staff when they perform their work in the homes. A number of management styles adopted by the senior management staff can be delineated to understand the style that was practiced to manage different situations that concerned the care providers, family members, residents and other people engaged in resident care. **Conclusion:** Findings can shed light on how the operationalization of these management styles to different practice situations may influence the work of senior management staff as well as front-line care providers who need to deliver the direct resident care. The extent to which these styles can influence team spirits, attitudes, behaviours, relationships and performance of care providers when caring for older residents with different care needs will be discussed.

41079

Aging in the World: Aging Demographic Datasheet 2018

Sergei Scherbov, International Institute for Applied Systems Analysis, Austria

Warren Sanderson, The State University of New York at Stony Brook, USA

Stefanie Andruhovitz, International Institute for Applied Systems Analysis, Austria

The first Aging Demographic Datasheet 2018 will be presented at the conference. It shows population aging trends and projections until 2050 with a focus on traditional and alternative indicators of population aging for the current and future population changes across the world. The new measures recognize that groups of people in different countries and in different years may have aged at different rates. They do this by taking differences in remaining life expectancy and other changing characteristics of people into account. Conventional measures of population aging provide a biased picture of the extent of population aging in the future because they ignore those important differences. The Aging Datasheet 2018 shows the magnitude of that bias by comparing estimates and forecasts of population aging which adjust for differences in relevant characteristics of people with analogous measures that do not. The datasheet presents adjusted and unadjusted data for all countries of the world and all continents. It features ranking and graphs, and contains a detailed glossary. All calculations in this Data Sheet are based on the United Nations. World Population Prospects: The 2017 Revision The data sheet was developed in the framework of and presents the results of the European Research Council funded Reassessing Ageing from a Population Perspective (Re-Ageing) project at IIASA that, among other things, ascertains the extent to which advanced societies are actually aging in multiple dimensions, including health, cognitive abilities, and longevity.

Saturday Session IV: 16:00-18:00Room: *To be Announced in Final Schedule*

Stream: Economics and Management

Session Chair: *To be Announced in Final Schedule***41758****Monetary Policy and Economic Growth: A Comparative Analysis of Theoretical Approaches and Practical Implementation**

Inessa Luksha, Belgorod State National Research University, Russia

Ruslan Luksha, MPI Soft, Russia

Over the past 10 years, after the global financial and economic upheavals of 2007-2008, the problem of economic growth and stimulation of economic activity is in the center of attention of both economic science and national governments. The subject of our study is the monetary policy carried out by national financial regulators, and its impact on the sustainable development of national economies. The activity of central banks is an absolute factor of influence on macroeconomic conditions. However, the traditional set of monetary instruments, even taking into account their modern modifications, is not a guarantee of growth in economic activity. Analyzing the policy of the Central Bank of Russia (1999 - 2016), we came to the conclusion that holding a tight monetary policy in conditions of negative external shocks, while contributed to the achievement of inflation targets and other external manifestations of macroeconomic stability, actually had a negative impact on the economic activity and acted as a powerful factor restraining economic growth in the country. Our study also concluded that adherence to the inflation targeting mechanism in an economy exposed to external shocks had a significant impact on increasing disparities between the real and financial sectors of the economy, including income distribution and poverty. Our analysis has made it possible to make a comparative quantitative formalization of the results of actual monetary instruments and the conditions for their practical application and theoretical ground.

41935**Arab Food Security and Agricultural Development Policies the Experience of Algeria, Iraq**

Nawfal K Ali Shahwan, University of Mosul, Iraq

The study aims to identify the key elements of the Arab food security gap, and analyses the indicators of treatment, which repeatedly re-focus on agricultural development and related policies. The current focus in the development of Arab agricultural capacity is on experience of Iraq and Algeria being resource-rich economies and poor in food production. The Arab region is suffering decades of serious food dependency and rely on a deepening imports despite the abundance of material, financial and water resources, required to catch self-sufficiency. It assumes that the problem is institutional one rather than real development. It suggests scurrying to address the root of the problem on the relationships that can be estimated from a mathematical model for investment in technical sectors for quench, irrigation, and mass production agricultural lands.

39186**Determining Philippines' Financial Inclusion Initiatives in the Life Insurance Industry: Pursuit of Financial Sector Development and Creation of Shared Value**

Ma. Josephine Therese Emily Teves, Kyoto University, Japan

Philippines has low levels of life insurance penetration. According to EU- ASEAN Business Council meeting 2016 report, over the last five years, the ratio of insurance premium to GDP reached to 1.8. However, access remains insufficient, with only 30 percent of Filipinos having access to insurance services and insurance penetration is below the average in ASEAN in 3.3% in 2014, 2.7% in emerging markets and 6.2% in the world. The geographical, human, institutional, and infrastructure-related barriers continue to persist on disrupting the access to insurance services. The main objective of the paper is to determine the Philippines' financial sector development in the life insurance industry, depict the current landscape of life insurance industry in the Philippine setting, create empirical modeling of patterns and relationships, help shed some light on the issues, provide suggestion on the responses related to life insurance in national strategy for financial inclusion baseline survey and deliver a set of solution towards perceived barriers. The author will scrutinize the results of the National Baseline Survey for Financial Inclusion related to the life insurance industry. She will also present a concise review of financial inclusion initiatives in the life- insurance industry in the Philippines, provide solutions and suggestions for each issue and challenges perceived in the survey.

40455**Efficiency of Microfinance Institutions (MFIs) In the Philippines**

Yung-Jae Lee, Saint Mary's College of California, USA

Xiaotian Zhang, Saint Mary's College of California, USA

In this paper, we aim to answer what factors help MFIs to be efficient in carrying out their missions to serve the needs, access to financial services and entrepreneurial opportunities, of the millions of people at the Base of Economic Pyramid (BoP) in the Philippines. To measure the efficiency of MFIs in relation to financial and social outputs, we used data envelopment analysis (DEA), a linear optimization tool. For the analysis of financial efficiency, we rely on existing literature for traditional financial institutions. We also added two indicators of social performance: impact on women and poverty reach index. We plan to study the relationship between social and financial efficiency, and the relationship between efficiency and other indicators, such as profitability. We also study the relationship between social efficiency and type of institution—Non-Governmental Organization (NGO), non-NGO— and operational characteristics of studied MFIs. Our results show that in general financial efficiency and social efficiency is not necessarily a trade-off. We also provide characteristics of efficient MFIs in terms of type and operating focus.

Saturday Session IV: 16:00-18:00Room: *To be Announced in Final Schedule*

Stream: Energy: Energy Economics and Ecological Economics

Session Chair: *To be Announced in Final Schedule***41959****Applying Logistic Regression Analysis to Determine the Service Quality Factors Affecting on Consumer Satisfaction Toward Low Cost Airlines in Thailand**

Rangsan Nochai, King Mongkut's Institute of Technology Ladkrabang, Thailand

Titida Nochai, Assumption University, Thailand

In recent years, Thai low cost airline market has been significantly growing. Because of the rebound of Thai economy and economic policy of government to stimulate people consumption and tourism increasing more holidays, the amount of sales in Thai low cost airlines were increased dramatically. Thailand has 3 major low cost airline providers, namely Thai Air Asia, Nok Air and Thai Lion Air. Each airline has been trying to be lower the costs and good service in order to meet consumer's need. This research studies about the service quality factors affecting on consumer satisfaction toward domestic low cost airlines in Thailand. A sample survey is conducted during December 2016 to January 2017 at DonMueang International Airport. Convenience sampling with questionnaires are used to collect data from 450 Thai passengers who ever used those low cost airlines for domestic flight to travel within 6 months ago. Data was analyzed by using multinomial logistic regression analysis at 0.10 level of significance, and the results of the study shown that four of five dimensions of service quality as assurance (safety flight), responsiveness (speed in managing the ticket, convenience in reserving the seats, carefulness in transmitting the luggage), empathy (crews are always willing to serve customers), and reliability (crews completely communicate all information to customers) were the important factors that have the impact on customer satisfaction.

40867**Efficiency Analysis for Oil and Gas Companies in the United States by Data Envelopment Analysis**

Amani Mohammed Atris, Tokyo Institute of Technology, Japan

Mika Goto, Tokyo Institute of Technology, Japan

Energy conservation and environmental protection are critical issues for sustainable development and growth over the world. Under the increasing momentum toward efficient use of energy and environment protection, corporate leaders face high pressure to implement necessary measures for sustainability enhancement of corporations while making efforts to yield a sufficient return for shareholders. Therefore, corporate management needs to balance between economic success and environment protection, otherwise they will lose their reputation and fail to survive in competition in a global market. This study applies data envelopment analysis (DEA) for operational and environmental assessment for U.S. oil and gas companies, using a data set comprising 34 oil and gas companies over the period 2011-2015. The sample of companies consists of seven major petroleum companies as integrated firms and the others are independent companies operating in the US. The integrated companies operate entire supply chain from upstream exploration to downstream retailing. On the other hand, the independent ones only engage in upstream activities, for example, exploration and development. Further, this study applies Kruskal-Wallis rank sum test to examine null hypotheses on whether there are no differences in efficiency between two groups of companies and among periods. The results indicated that integrated companies outperform independent companies with respect to the environmental efficiency, while independent companies outperform integrated companies for operational efficiency. From results of the efficiency assessment, this study discusses policy implications for supply chain management and carbon footprints of the oil and gas companies.

41242**Influence of Intake Air Temperature on Performance of Small Gasoline Engine**

Tawarat Treeamnuk, Suranaree University of Technology, Thailand

Krawee Treeamnuk, Suranaree University of Technology, Thailand

Sakkarin Papakae, Suranaree University of Technology, Thailand

This research study was to investigate the influence of intake air temperature on the performance of a multi-propose small gasoline engine. The single-cylinder 208 cm³ four-strokes gasoline engine was tested at speed 1,500-4,000 RPM. The engine intake air conditions were prepared in case of 1) warm air that was like the air around the engine at 50-55°C and room humidity 2) low temperature using evaporative cooling pad system (ECP) with the room temperature water and 3) very low temperature by using the ECP system with cool water at 0.5°C. The engine performance was tested on the water break dynamometer to determine torque, speed, fuel consumption and air induction rate. The result shown that reducing air temperature before taking into the engine by ECP system influences on the increasing of density, relative humidity and pressure of the intake air. The lower temperature of intake air provides an engine torque increasing of 3.21% at 2,000 RPM (use room temperature water) and 7.76% at 3,500 RPM (use cool water) and the specific fuel consumption reduces 7.04% at 3,500 RPM. The exhaust temperature and HC-emissions are decreased when compare to the warm air intake to the engine test.

39821**Reducing Energy Loss of University Buildings by Energy-Conscious Timetable Design**

Paul White, Fukuoka University, Japan

Vasily Moshnyaga, Fukuoka University, Japan

Energy consumption is one of the major expenditures in universities. To reduce energy costs, university impose regulations on HVAC setup, lighting usage, air-conditioners, elevator use in winter and summer times. Although these regulations have some beneficial effect on cost reduction they do not cut energy losses significantly. The university buildings still consume by 3 to 4 times more energy than other offices on a square meter basis. We found that energy-ignorance in class timetable design is one of the main sources energy losses caused by redundant heating/cooling and lighting of classrooms as well as unnecessary use elevators for transporting students between the classes. In this paper we describe a novel approach to reducing energy losses of university buildings and present results of its experimental evaluation. The key idea of is to incorporate energy reduction objectives into the class timetable design. Unlike existing practice, we formulate the class scheduling and room assignment as a hybrid integer linear programming problem with objective of minimizing the total energy cost while allocating all requests without conflicts, and solve the problem by the branch-and bound technique. Simulations on timetable design for the faculty of Engineering, Fukuoka University show that such the proposed approach can reduce the energy costs by 27% without any additional investment in HVAC management tools or special hardware. Moreover, if we assume large classrooms or conference halls can be partitioning by sliding curtains with and the partitions have separate HVAC control, the total energy saving can be as much as 55%.

Saturday Session IV: 16:00-18:00Room: *To be Announced in Final Schedule*

Stream: Politics, Public Policy, Law & Criminology

Session Chair: *To be Announced in Final Schedule***40906****Computer Assisted Approaches to Critical Analyses of Curricula: A Case Study of Human Rights Learning in Japan's Social Studies Curriculum**

Thomas Meyer, University of Oxford, UK

As curricula are considered a major regulator of learner experiences, the sociology of the curriculum historically has been concerned with knowledge as a form of discipline or domination utilised to sustain established power structures and the role of knowledge in reproducing social inequality. Much research focuses on curricula as text, sampling policy documents, official guidance for instructors, and textbooks. With data as text, there are considerable advantages to the use of computer-assisted text analysis, including increased analytical depth, transparency and reproducibility. However, computer-assisted text analysis remains a rarity within broad-scale critical research designs due to ideological resistance and perhaps lack of familiarity. This paper thus will discuss the effective integration and limitations of computer-text analysis for critical research designs, both as a quantitative analytical measure and as an analytical measure integrated within traditional qualitative analyses. This will be accomplished through a partial review of a critical empirical study looking at the portrayal of human rights within Japan's official curriculum, represented by thirteen upper-secondary social studies textbooks digitised to form a non-curated corpus of 760, 000 words. Computer-text analysis was instrumental in demonstrating that notwithstanding intentions to inculcate new individual and communal identities through human rights concepts, the portrayal of human rights within the Japan's curriculum limits this transformative potential and is a fundamental component in the regulation of active citizenship.

40815**A Study on Stalemate of "State-Visions" In the Palestinian-Israeli Conflict Through the Perspective of Palestinian Intellectuals**

Hani Hadi, Keio University, Japan

In peace talks on the Palestinian-Israeli conflict, the Two-state solution has been assumed as a premise. However, due to the fact that the Oslo process failed in reality, peace talks have not progressed since the 2000s, therefore some academics are pointing the impossibility of the Two-state solution. Meanwhile, the One-state solution has attracted attention, mainly from intellectuals in Europe and the United States, and discussions are actively taking place. However, there is no growing tendency for support for the One-state solution in the concerned or the sub-concerned regions, namely Occupied Palestinian Territories, Jordan and Lebanon. And still the Two-state solution is continuing to be a premise. Many previous studies on the "State-visions" (i.e. Two-state or One-state solution) are based on a historical perspective. These are mainly focusing on its theoretical aspect, but on the other hand we have not dealt with the social aspect; how the Palestinian society considers about it. Therefore, this research mainly adopts a sociological approach. Particularly, I would like to pay attention to the consciousness that the Palestinians hold about the State-visions. For this, I conducted a qualitative interview on several Palestinian intellectuals, who are main actors of making of the State-visions. Consequently this study revealed why the Two-state solution is continuing to be a premise for peace talks, and what are the defects of each visions. In addition, I suggested that it is necessary to rebuild a new governance vision in the future by reconsidering the premised values such as "sovereign states" and "national self-determination".

40771

Mission Impossible: Why Japanese Opposition Parties are so Fragmented?

Chi Ming Victor Chan, Hang Seng Management College, Hong Kong

The landslide victory of Liberal Democratic Party (LDP) in the general election 2017 not only makes Abe Shinzo as the third longest serving Prime Minister of Japan but also pushes forward the controversial agenda of constitutional revision. But, why Japanese political opposition parties like Kibō no Tō led by Koike Yuriko were not successful to challenge the rule of the LDP even when Abe had faced a number of political and economic scandals? Apart from the positive impact of Abe's policy agendas particularly Abenomics, the paper attempts to look into the problematic Japanese political opposition parties in three dimensions – (1) the spectrum (or nature) of opposition parties, (2) the ability of providing alternative political platforms/agenda, and (3) the unity of opposition parties. The paper concludes that Japanese opposition parties need to rebuild their political labels which provide a real alternative to LDP for the voters.

38029

The Weaponisation of Information in the Cyber Warfare Security Dilemma: The Russian Hacking of the 2016 US Presidential Elections

Er-Win Tan, Keimyung Adams College in Daegu, South Korea

Whilst much has been written about the use of internet-based viruses and hacking to inflict damage on the infrastructure of other countries, one area that has not been examined to this date concerns the manipulation of information to ferment disunity in other countries. US dominance of the post-Cold War order and the Obama Administration's sanctions on Russia have contributed to a security dilemma between the US and Russia. The Russian Government's use of its intelligence apparatus to hack the Hillary Clinton's 2016 Democratic National Campaign reflected the weaponisation of information itself. By leaking information that leading Democrats had sabotaged Clinton's rival, Bernie Sanders, during the Democratic primaries, Russian meddling in the US elections disrupted the unity of the Democratic Party whilst causing numerous disillusioned Democratic voters to defect and vote for Donald Trump as a sign of protest against the Democratic Party's perceived corruption. Set against such a scenario, this paper will conclude by examining how might democratic countries strengthen their political institutions against foreign meddling. In this regard, the US Constitution's system of 'Checks and Balances', by serving as a watchdog against White House abuses of power, ensures that political executives are held accountable to their electorates. Furthermore, the rejection of far right populist politicians by Dutch and French voters in 2017 demonstrates the importance of educated, analytically critical electorates willing to call out populist politicians' use of demagoguery, as well as the importance of centrist media in presenting accurate coverage of key issues that matter to the electorate.

Sunday Session I: 09:15-10:45Room: *To be Announced in Final Schedule*

Stream: Aging and Gerontology

Session Chair: *To be Announced in Final Schedule***41085****Life-Threatening Experiences and Quality of Life in Chinese Older Women**

Sik Yee Leung, Caritas Institute of Higher Education, Hong Kong

Chi Pun Liu, University of Hertfordshire, UK

This longitudinal study explored the implications of traditional Chinese culture on Chinese older women's coping and quality of life over time. 531 women were interviewed in 2008 and 226 of them were re-interviewed a year later. Measurements included Quality of Life Ladder (QoL), General Self-Efficacy Scale (GSS), List of Threatening Experiences (LTE), Somatic Complaint Scale, and Self-rated Health. Respondents' mean age at baseline was 55.7 (SD=4.7, range: 50-78). Over a year's time, respondents had a poorer perceived quality of life ($p<.001$) and self-rated health ($p<.001$), experiencing more life-threatening events ($p<.05$) and somatic complaints. Structural equation model suggested that life threatening experience at baseline, self-efficacy at follow-up, and quality of life at baseline contributed significantly to the quality of life at follow-up (Chi-square (df=3)=1.669, $p=.644$; CFI=1.000, RMSEA=.000), indicating that respondents' self-efficacy at follow-up mediated the effect of self-efficacy at baseline to quality of life at follow-up. The self-efficacy at follow-up also has partial mediation effect on life threatening events to quality of life at follow-up. Findings show that our respondents successfully transformed adverse life experiences into positive psychological growth and resilience for stress management, which may be related to the Yin Yang model of threatening experience— a balanced approach for self-transience in challenging environments.

41997**Active Ageing and Quality of Life of Rural Elderly Women**

Hannah Evangeline Sangeetha Theophilus, Loyola College, India

Raja Samuel Samuel, Madras School of Social Work, India

Ageing is an inevitable change in the lifespan of an individual. India's old age population has increased from 19 million in 1947 to 100 million in the 21st century. According to the United Nations World Population ageing reports that the grey population has immensely increased from 9.2% in 1990 to 11.7 % in 2013, and it's expected to triple by the year 2050 growing from 737 million to over 2 billion persons 60 years of age and older. Ageing is a period of physical, mental and social decline which brings a host of challenges to the individual and the family. Hence it requires special attention at all levels, the micro, mezzo and the macro levels of the society. The concept of healthy aging, Positive ageing and successful aging are used to help people to change their negative attitude towards aging. These new terminologies are significant in making people realize and bring about a change in the minds of senior citizens as well as the society. This study aimed to understand the level of active ageing among the rural elderly women and its impact on the quality of life. 330 elderly women from 12 villages of Sriperumbudur associated with the Mobile medical care of Help age India were interviewed using census method. The study was conducted only with the young old between 60- 75 years. 73.6 percent were between 60 and 70 years and 26.4 percent of the respondents were between 70 and 75 years. All the three major religious groups were represented, 85.5percent were Hindus. Majority of the respondents 73.3percent had no education. It was interesting to know that majority of the respondents were self-reliant (83.94 percent) and 82.73 percent of them took care of them by themselves without any support from their families. 76.9 percent of the senior women worked based on their competencies, 75.5 percent of them were involved in plenty of activities everyday including their occupation

and household chores, which enabled them to be physically active. The chi square values that there is a significant association between the overall active ageing score, religion & number of members in the family. The other demographic variables like age, occupation, income marital status, age at marriage, number of children in the family and Socio –Economic Status were not significantly associated with the overall active ageing score. The study surprisingly shows that most women enjoyed freedom and Independence in their family which is a positive indicator of active ageing.

41696

High-Density Ageing-Friendly Neighbourhoods: Multi-Sensorial Perspective

Zdravko Trivic, National University of Singapore, Singapore

Darko Radovic, Keio University, Japan

Raymond Lucas, University of Manchester, UK

Kelvin E. Y. Low, National University of Singapore, Singapore

Multi-sensorial, emotional and symbolic interactions with space are critical to our experience, use and appreciation of built environments and profoundly shape our overall sense of well-being. However, our contemporary cities are often either sensory overwhelming or sensory deprived, while design practices keep embracing values of ocularcentrism and pragmatism. In result, cities keep generating stressful conditions and inequality, instead of becoming healing, empathetic, sensitive and inclusive environments for all. The aim of this paper is to discuss the role of sensory experience in planning and designing healthier neighbourhoods in high-density contexts for all ages. Creating health-supportive and ageing-friendly environments goes beyond passive and non-integrated provision of healthcare and eldercare facilities, universal design, hygiene and safety. Instead, subjective multi-sensorial experience, overall ambience and culture-specific clues (among others) become the agenda for age-sensitive neighbourhood design. Housing neighbourhoods are seen as supportive “devices” with capacities to build up residents’ physical and mental ability levels, independence and social support, sense of dignity and self-esteem, at different stages of ageing, especially due to associated declines in sensory, motor and cognitive functions with ageing. This paper outlines the research framework that proposes multi-sensory approach to evaluating and designing ageing-friendly neighbourhoods. It summaries methods and preliminary findings of the pilot study conducted in two Singaporean high-density neighbourhoods that employed ethnographic explorations, fieldwork experiments and sensory mapping, while proposing further research directions to capture and analyse both quantitative and qualitative, objective and subjective, sensory data and daily rhythms of housing environments from the perspective of elderly users.

Sunday Session I: 09:15-10:45Room: *To be Announced in Final Schedule*

Stream: Politics, Public Policy, Law & Criminology

Session Chair: *To be Announced in Final Schedule***40902****Strategy for Increasing the Placement of Indonesia Migrant Workers (TKI) In the Formal Sector**

Yuniarti Tri Suwadji, Research and Development Center of the Ministry of Manpower, Indonesia

Yeni Nuraeni, Research and Development Center of the Ministry of Manpower, Indonesia

The Government of Indonesia keeps trying to improve the protection of Indonesia Migrant Workers (TKI). One of the efforts undertaken is to reduce sending of migrant workers in the informal sector, whom more vulnerable and minimal protection and to increase the placement of migrant workers in the formal sector, whom more fully protection. The method in this research is to take some areas of Indonesian migrant workers to be used as research samples. In each sample area, in-depth interviews of government and non-governmental agencies are directly related to policy making and shipping operations for migrant workers to find out the problems and explore strategies that can be applied to improve the placement of TKI in the formal sector. From this the research can be concluded to increase the placement of TKI in sector formal, Indonesian government must make several efforts improvements about the system and mechanism of placement of TKI in the sector formal and the education and skills of prospective migrant workers in order to they can compete in the global job market.

40065**The Impact of Legislation Related to the Biodiversity of Mangroves Located in Thailand**

Phasai Samart, Rajamangala University of Technology Rattanakosin, Thailand

Pimuk Suseensamphan, Rajamangala University of Technology Rattanakosin, Thailand

Natthakaran Thammaratsunthon, Rajamangala University of Technology Rattanakosin, Thailand

The objectives of this research are to: 1) study the effects of existing laws on mangrove biodiversity in Thailand and 2) prepare suggestions on improving the relevant laws for relevant government agencies. The researcher used the qualitative research method and collected data by studying legislations regarding mangrove forests from different types of references including documents, textbooks, judgements and academic articles as well as interviews with local people. Research findings were that there is no law directly stipulating the protection of mangrove forest use. However, relevant laws that could probably be enforced were the National Reserved Forest Act B.E. 2507 (1964) which defines invasion as occupying, possessing, utilizing or residing in any area without permission from officials and any person in violation shall be subject to imprisonment and fine; and the Promotion of Marine and Coastal Resources Management Act B.E. 2558 (2015) in which Section 18 and Section 19 stipulate protection measures for mangrove forest areas. However, after hearing the opinions of local people, most of them thought that the problem wasn't caused by an existing or non-existing law, but caused by law enforcement. They thought that the discretion to allow occupancy of reserved mangrove forests was improper and did not take into consideration the community's interest. They also thought that directly responsible agencies did not seriously play their roles and local administrative organizations were the only organizations that took care of local people.

41801**Parallel Importation and Intellectual Property Law in Thailand**

Noppanun Supasiripongchai, University of Phayao, Thailand

Parallel importation normally occurs when the goods produced under the protection of intellectual property (IP) laws are placed in one country, and then imported into another country without authorization of the local IP owners. The unclear laws and the lack of harmonization on laws related to parallel importation in ASEAN countries make it possible for right holders to rely on their IP rights to prohibit parallel importation of IP products. This can be an obstacle in achieving the objective of the ASEAN Economic Community (AEC) which is to create ASEAN single market with the core elements of promoting free movement of goods. The Thai Trademark law does not solve such problem since it does not contain the exhaustion provision and does not mention about the parallel importation. Also, although the Thai Patent law and the Thai Copyright law contain exhaustion provisions which can apply to the parallel importation, such provisions are unclear as to whether they should be applied as national exhaustion or international exhaustion. Hence, this article proposed that the reform of these laws should be carried out in order to make them clear and certain. The harmonization of laws relating to parallel importation among ASEAN countries is unavoidable in order to promote free movement of goods within the Southeast Asia region. This article contends that the EU regional exhaustion approach should be the appropriate approach for Thailand and ASEAN, while the application of such exhaustion regime in all areas of IP laws should be consistent with each other.

Sunday Session I: 09:15-10:45Room: *To be Announced in Final Schedule*

Stream: Environmental Sustainability & Environmental Management: Land Use & Misuse

Session Chair: *To be Announced in Final Schedule***41691****Relationship of Land Uses Change on Water Quality in Upper Nan River Basin, Nan, Thailand**

Chanin Kaewmanee, Chiang Mai University, Thailand

Land use change is a very important issue considering global dynamics and their response to hydrologic characteristics of soil and water management in a catchment. Studies on the relationship of land uses change on water quality in upper Nan river basin were conducted in 2017. The objective is to assess amount of runoff and water quality in the basin under the change of land use scenarios, the reduction of the forest area to agricultural area. In this study, Geographic Information System (GIS) and statistical analysis were used to determine the relationship between land use types and water quality during the dry and rainy seasons. The data is included soil type, weather data and satellite images were applied to analyze land use map. The classification of land use in Nan province is shown as follows; residential areas (1.82%), agricultural areas (35.1%), watershed areas (103%) natural forest conservation areas (62.05%). The result of land use change had a beneficial impact on watershed response due to the transition from grass and shrub land to agricultural land increased annual and seasonal stream flow and sediment yield in volumes. On the other hand, agricultural activities increases amount of pesticides and herbicides and some of those enters into river basin. This research provided useful outcomes for the planning and management of water resource and flood in Nan province.

41932**Study of Impact of Agriculture on Steep Slopes in Mountainous Areas for Landslide-Disaster Prevention Planning**

Santi Thaiyuenwong, Rajamangala University of Technology Rattanakosin, Thailand

The objective of this research is to study the impact of agriculture on steep slopes in mountainous areas on landslide disaster as well as to prepare the landslide-disaster prevention planning in the target area. The research was conducted in conjunction with the local villagers by performing interviews and discussion as well as collecting information in the community about landslides from the relevant sectors and folk wisdom. According to the research, it was found that land utilization for agricultural purpose on steep slopes in mountainous areas with a slope of 15-35°, the addition of abnormally high rain volume and geological features are the main factors that cause landslides or increase the risk. From this research, the researchers found that landslide-disaster prevention planning is an important matter that needs to be further developed for landslide-disaster risk management.

40990**Study on the Establishment and Application of the Valuation Model for Attributes of Environment Resources of Small Islands**

Han-Shen Chen, Chung Shan Medical University, Taiwan

With increasing demand for tourism and recreational resources, a change in tourism pattern, and increasing awareness of ecological conservation, the rapid development of island tourism in recent years has caused international experts and researchers, who are concerned with the development of islands, to carry out related studies. Green Island, the area selected in this study, is located off southeast Taiwan Island. Our

motivation for this study stemmed from important environmental protection subjects such as biodiversity and climate change. The conservation efficiency of Green Island's eco-environmental resources can only be valued by using non-market goods valuation methods. this study intends to assess the ecosystem service valuation pattern for Green Island. First, the background is analyzed to prompt the motivation for the study, and the study objective is proposed. Second, according to indicators of the ecosystem services of ecosystem units of Green Island, important ecosystem attributes and levels are identified through interviews with relevant experts and researchers, and the attributes and levels of ecological security designed in the implementation result of the ecological security model are incorporated. choice experiment method (CEM) is used to construct an ecosystem service assessment utility model. Tourists and residents are categorized into different groups for the questionnaire and analysis to explore differences between their willingness to pay (WTP) for various attributes. Finally, according to the study results, countermeasures and suggestions are proposed for sustainable development of the environment of Green Island, providing references for the government and related authorities to make policies.

Sunday Session I: 09:15-10:45Room: *To be Announced in Final Schedule*

Stream: Energy: Energy Economics and Ecological Economics

Session Chair: *To be Announced in Final Schedule***40266****Analysis on Patent Intelligence of Solar Energy Technology in China in the Aspect of Global Competition**

Yang Li, National Science Library, Chinese Academy of Sciences, China

Faced with the increasingly fierce international competition, climate change and other global challenges, it is more important for Chinese government to take the analysis on patent intelligence of solar energy technology one step further. Based on Innography patent information retrieval platform, this paper analyzed the development trend of global solar energy patent and hot and core technology layout from the aspect of patent country, application country, IPC distribution, patent rights and patent strength. The further analysis focused on the core patent concentration of countries and institutions in the world using patent data mining technology. A comparative study was conducted on the technology layout in Chinese market between local technology developers and global technology developers. It is of great interest to discover the advantages and disadvantages of China's solar energy technology in global competition, on which this paper evaluated from the competitive environment, competitors, competitive technology and international strategy. In addition, this paper highlighted some implications especially for speed up technological innovation and industrial upgrading in order to enhance the international competitiveness of China's solar energy industry.

41733**Revisiting the Short-Run Price Elasticity of Gasoline Demand in Taiwan**

Jin-Long Liu, National Central University, Taiwan

Guanting Chen, National Central University, Taiwan

Estimating the price elasticity of gasoline demand has played many important roles for policymakers to design the optimal taxation and to evaluate the related proposals associated with the climate change. Empirical estimates of gasoline demand have shown many different estimation strategies. The estimates obtained by the time horizons as well as the geographic areas may have significant differences that policymakers should be acknowledged (Levin et al. 2016). This study uses the monthly and seasonally data as well as city-based and region-based data to estimate the short-run price elasticity of gasoline demand in Taiwan. Our estimation considers two particular periods, 2009-2013 and 2014-2016, those periods were reflected with the international oil prices on increasing and decreasing period gradually. The empirical results indicate that the estimates obtained by the two periods have the symmetric effects while using the monthly data but the seasonally data. Our results also show that the estimates obtained by the monthly data are larger than those obtained by the seasonally data. However, the estimates obtained by the city-based data do not show the difference compared with those obtained by the region-based data. It shows that aggregation issue should be addressed on the time horizons but the geographic areas.

41003**Recent Developments in Russia-Japan Energy Relations**

Svetlana Vassiliouk, Meiji University, Japan

The Russian government has recently elevated the “Asia dimension” in its national energy strategy, viewing the Asia-Pacific as the most attractive market due to the fastest-growing energy demand, stable energy prices, and various business opportunities for Russian energy suppliers. Furthermore, Russia’s authorities realize the critical importance of attracting international financial and technological assistance for the development of the rich energy base and infrastructure in the remote areas of Eastern Siberia and the Far East. To achieve these goals, boosting energy cooperation with its partners in the Asia-Pacific, particularly Japan (the region’s second largest economy and one of the world’s top energy consumers) is crucial. This paper will focus on the major developments and joint projects in Russia-Japan energy relations, focusing on the two countries’ cooperation in Eastern Siberia and the Far East. Given the geographical proximity, complementary economic needs, and desire to diversify their respective energy policies, Japan and Russia should naturally seek to expand their energy relations with each other. As Japan and Russia’s national energy strategies also stress similar goals, such as the improvement of energy efficiency, promotion of renewable energy resources, conservation of energy resources, and advancement of clean technologies, it is important that they seek to expand their cooperation in these areas, in addition to the traditional trade in crude oil and natural gas. Finally, the paper will also provide a comprehensive assessment of the future prospects of the bilateral energy cooperation in the context of the two countries’ relations as a whole.

Sunday Session II: 11:00-12:30Room: *To be Announced in Final Schedule*

Stream: Aging and Gerontology

Session Chair: *To be Announced in Final Schedule***41874****Balance, Gait Speed and Physiologic Profile of Community-Dwelling Older Adults with and Without Mild Cognitive Impairment: A Cross-Sectional Study**

Donald Lipardo, The Hong Kong Polytechnic University, Hong Kong

Catherine Joy Escuadra, University of Santo Tomas, The Philippines

Patrick Ansel Leung, University of Santo Tomas, The Philippines

Anne Marie Aseron, University of Santo Tomas, The Philippines

William Tsang, The Hong Kong Polytechnic University, Hong Kong

Cherry May Gabuyo, University of Santo Tomas, The Philippines

Kathlene Anne Hernandez, University of Santo Tomas, The Philippines

Joselito Diaz, University of Santo Tomas, The Philippines

Background: Mild cognitive impairment (MCI) is a predictor and also a risk factor for falls among community-dwelling older adults. However, a more comprehensive understanding of fall-related functional and physiologic risk factors in older adults with and without MCI is lacking. Objective: The aim of this study was to compare functional and physiologic risks of falling in older persons with and without mild cognitive impairment living in the community. Design: Cross-sectional study. Subjects: 230 community-dwelling older persons (76.5% women) with mean age of 69.77 ± 6.8 years (range: 60-95). Methods: Participants were interviewed regarding their medical and fall history, and underwent a battery of tests: 1) to assess functional fall risk using Timed-Up and Go Test (TUGT) for balance and 10-Meter Walk Test (10MWT) for gait speed, and 2) to examine physiologic fall risk using the Physiologic Profile Assessment (PPA). Results: Those with MCI had significantly higher composite PPA score ($p < .001$) and higher TUGT scores ($p = .04$) compared to those without MCI. Greater scores in PPA and TUGT means higher risk for falling. No significant difference in gait speed was observed in 10MWT both in the preferred speed ($p = .19$) and fastest speed ($p = .93$). Conclusion: Older adults with MCI have higher risk of falling. Community-based programme including screening and falls prevention is recommended. Further research is needed to establish the effectiveness of interventions addressing both the physical and cognitive risks for falls in older adults with MCI.

40694**Validation of the Visual Based Cognitive Assessment Tool (VCAT) For the Diagnosis of MCI and Dementia in Malaysia**

Sarah Iyang Kung, University Malaya, Malaysia

Nor Izzati Saedon, University Malaya, Malaysia

Hui Min Khor, University Malaya, Malaysia

Shahrul Bahyah Kamaruzzaman, University Malaya, Malaysia

Maw Pin Tan, University Malaya, Malaysia

Background: Mild cognitive impairment (MCI) can be regarded as a risk factor for dementia. Early diagnosis of MCI enables timely intervention to reduce progression to dementia. This is essential as the prevalence of dementia is increasing worldwide. Objective: The Visual Cognitive Assessment Tool (VCAT) may be comparable to Montreal Cognitive Assessment (MoCA) and Mini-mental State Examination (MMSE) detecting MCI, without the need for translation into other languages or adaptations. Method: The VCAT, MoCA and MMSE were administered to individuals aged 65 year and over attending the University Malaya

Medical Centre. The presence of MCI and dementia diagnosed using the NINDS-NIA criteria. Results: 96 participants were evaluated (50 non-MCI, 46 MCI). The sensitivity and specificity of VCAT in diagnosing cognitive impairment were 80% and 82% respectively. VCAT had better sensitivity than MMSE, and better specificity than MoCA. Post-hoc analysis showed that VCAT offers better differentiation for normal controls versus MCI in comparison to MoCA and MMSE. Time to completion of VCAT was 13.0 ± 5.7 min. Conclusion: The VCAT had good sensitivity and specificity for diagnosing MCI and appears to better differentiate non-MCI from MCI compared to MoCA and MMSE. It is advantaged of non-language dependent, thus avoiding the need for adaptations or translations into other languages.

40915

The Impact of Residential Environment on Perceived Anxiety and Depression in Older Adults in the UK

Ben Chi-pun Liu, University of Hertfordshire, UK

Dion Sik-yee Leung, Caritas Institute of Higher Education, Hong Kong

The study was based on a UK national survey on 28,955 aged 65+ adult social care service users conducted in 2016. The theoretical framework of this study was modified from the Theory of Social Production Function, exploring how the residential environment predicted respondents' perceived anxiety/depression after adjusting their health conditions and utilisation of care. Results: 90.4% of respondents were White, 67.6% of them were female, and 52.7% of them reported anxiety / depression. There were more Black, Asian, and minority ethnic (BAME) elders (BAME: 59.7% v White: 51.9%, Chi-square: 56.488***, df=1) and female (Female:53.6% v Male:50.8%, Chi-square test: 19.336***, df=1) perceived anxious/depressed compared to their counterparts. Hierarchical logistic regression results show that residential environment including unsatisfied home design (OR=1.593***, 95%CI=1.443-1.759), unable to access to information (OR=1.498***, 95%CI=1.326-1.692) and local areas (OR=1.359***, 95%CI=1.196-1.544) significantly contributed to respondents' perceived anxiety/ depression. The adjusted factors included, for example, poor self-rated health (OR=2.687***, 95%CI=2.402-3.005), perceived pain (OR=1.920***, 95%CI=1.697-2.173), and formal care did not help in controlling over daily life (OR=1.404***, 95%CI=1.206-1.634) (**p<.001). Our findings lend support to the idea of "ageing in place", helping older people remain independence and autonomy in their homes and communities with well-designed space management, building services, supporting internal and external facilitates, and easy access to information and local areas. Older people highly emphasize the value of information for making informed decisions. Their easy and regular access to leisure and sports facilities may encourage them to engage in more physical activities, resulting in improving their health and wellbeing.

Sunday Session II: 11:00-12:00Room: *To be Announced in Final Schedule*

Stream: Natural, Environmental and Health Sciences

Session Chair: *To be Announced in Final Schedule***41941****Environmental Risk Assessment of 4,4'-Dichlorobenzophenone in the Mouth of the Pearl River Delta**

Lucia Ivorra Gonzalez, Institute of Science and Environment, University of Saint Joseph, Macao

Karen Tagulao, Institute of Science and Environment, University of Saint Joseph, Macao

Shek Kiu Chan, Institute of Science and Environment, University of Saint Joseph, Macao

Patricia Gonçalves Marques Cardoso Teixeira, Interdisciplinary Centre for Marine and Environmental Research, Portugal

Catarina Cruzeiro, Centre for Functional Ecology, Portugal

The Pearl River Delta (PRD) is one of the most industrialized regions in the world and has been identified as one of the areas in China that has high environmental concentration of pesticides, such as organochlorine pesticides (OCPs). One of the most commonly used OCPs was dichlorodiphenyltrichlorethane (DDT), also listed as one of the main persistent organic pollutants by the United Nations Environment Program. Although the application of technical DDTs in agriculture has presumably been banned since 1980s, no apparent decline in DDTs concentration has been detected, indicating new inputs of DDTs. This new source could be attributed to the production of dicofol, a pesticide synthesized from technical DDT, and used as an acaricide in agriculture and antifouling agent in paints for ships in southern and eastern China. Because degradation of dicofol is very fast in alkaline conditions and UV light, the present work aimed to evaluate the environmental implications and toxicity of 4,4'-Dichlorobenzophenone (4,4'-DCBP) (its active and main metabolite) in the aquatic ecosystem of the PRD mouth. For this purpose and considering that no toxicological data was available for this metabolite, two well-known animal models were studied. *Artemia salina* and *Daphnia magna* were exposed to a range of 4,4'-DCBP concentrations; mortality rate, speed (cm/s) and total displacement (cm) were analysed in order to assess the lethal concentration required to kill 50% of the population (LC50s). With these LC50s, theoretical risk assessments will be performed, considering the 4,4'-DCBP levels quantified in Hong Kong and Macao in a previous study.

41926**The Study on Water Quality in Saen Saeb Canal: A Case Study on the Project of SWU Jointly Conservation Saen**

Sanong Thongpan, Srinakharinwirot University, Thailand

This study consists of four purposes: 1) to evaluate the water quality in Sean Saeb canal according to the five parameters (i.e. Biochemical Oxygen Demand (BOD), Dissolved Oxygen (DO), Positive Potential of the Hydrogen Ions (pH), Suspended Solids (SS) ; and Phosphate(PO₄³⁻), 2) to compare such water quality parameters with the water quality standards in surface water types.3 announced by the National Environment Board No. 8 (1994), and 3) to compare such water quality parameters with the water quality last year in the same period,4) to investigate the attitude of residents living along the canal toward Saen Saeb canal conservation. The results were as follows:1) the results of this study indicated that the quality of water from Saen Saeb canal attended its mean in reconcile with the corresponding parameters: BOD, DO, pH, SS and PO₄³⁻ as 10.50 mg/l, 2.25 mg/l, 6.25, 25.40 mg/l, and 0.48 mg/l. 2) the figures followed the standard values, excepting those of BOD, DO which were lower than the standards.3) comparison of water quality in the same period last year showed that the average BOD tended to decrease and the average DO increase for SS and PO₄³⁻ Average of not exceeding the standard.4) The attitude of conservation Saen

Saeb canal of residents living along the Saen Saeb canal were designated as at a “good level”.

Sunday Session II: 11:00-12:30

Room: *To be Announced in Final Schedule*

Stream: Economic Sustainability: Environmental Challenges and Economic Growth

Session Chair: *To be Announced in Final Schedule*

40200

Can Interregional Secondary Industrial Transfer Reduce Carbon Intensity? An Empirical Analysis Based on Chinese Data

Meng Tian, China University of Geosciences, China

Interregional secondary industrial transfer (ISIT) has been an important means for China to promote balanced development between regions. However, it is not clear whether ISIT is favorable for lowering carbon intensity (CI). This paper employs the panel clustering analysis method to research the characteristics of ISIT in China and implements the PARDL model to analyze the influence of ISIT on CI correspondingly. The results show that Chinese territorial space can be divided into the transfer-in region, the transfer-out region and the non-transfer region. This is inconsistent with the traditional geographical division pattern of China. Over the study period, there is a long-run equilibrium relationships between CI, industrial structure, urbanization level and environmental regulation level in the three regions. ISIT is capable of constantly optimizing the industrial structural and lowering carbon intensity in the transfer-out region. However, it is only benefit to reduce CI in partial provinces of the transfer-in region in the short-run and cause environmental risks in the long-run. We also find that urbanization level and environmental regulation exert different impacts on the carbon intensity. Based on these empirical findings, we can conclude that it is necessary to take countermeasures and precautions when promoting ISIT in China.

40205

Non-Linear Influence of Economic Growth on Carbon Productivity: A Research Based on Hubei Province in China

Yiwei Wang, China University of Geosciences, China

Grasping the relationship between economic growth and carbon productivity is the key to develop low-carbon economy. This paper analyzes the non-linear dynamic influence of economic growth on carbon productivity by using the smooth transition regression (STR) model and Markov switching regression (MSR) model based on the time series data from 1985 to 2015 of Hubei province in China. The results show that the economic growth of Hubei province has a positive effect on carbon productivity, show a obviously transformation characteristics between high-region and low-region. The average time limit in the high-region is 20 years. The average time limit in the low-region is 5 years. The conversion probability from the low-region to the high-region is 0.1991. And the conversion probability from the high-region to the low-region is 0.0477. So the steadiness of the high-region is stronger than the low-region. Besides that, the conversion speed is fast between the two regions.

41993

Analysis of Industrial Essential Productive Factors Structure - Based on Resource-Exhausted Cities

Xiao Dai, University of Geosciences, China

At the present important historical stage of the transformation of China's economic growth mode and upgrading of its industrial structure, it's a matter of concern of how to scientifically and effectively organize and coordinate the allocation of essential production factors for the development of different Industries. Clarify the role of different industries in the regional economic system, and the similarities and differences

between the factors of production and their configuration are the basic research ideas of this article. Based on it, by screening out the case of the representative upgrading of industrial structure, building the industry's Pierce coefficient and the transfer entropy level map of production factors, we empirically examine the similarities and differences in the structure of factors of production as well as their roles. The study found that in the industrial restructuring and upgrading process the production elements of the structure in resource-based industries is less similar to other industries which shows a similar configuration but also with the characteristics of differentiation. The results of the research on transfer entropy reveal that the reasons for these differences are mainly on the R & D expenses, investment in fixed assets and the impact of raw coal consumption.

Sunday Session II: 11:00-12:30

Room: *To be Announced in Final Schedule*

Stream: Demography, Human Geography & Population Studies

Session Chair: *To be Announced in Final Schedule*

39852

Documented Migration From Mexico to the U.S.: Visa Programs and its New Challenges

Martha Irene Andrade Parra, Doshisha University, Japan

This presentation discusses the ubiquitous participation of Mexicans in “legal” channels of migration to the U.S. Although in recent years most of the academic attention has been put on the phenomenon of irregular migration, which politicization and numerical magnitude have been overwhelming, little research has noted the presence of Mexicans who cross the border by “legal” means. This presentation addresses contemporary regular Mexico-U.S. migration in the following manner: first, the participation of Mexicans in four visa types under which labor migration to the U.S. is permitted is presented based on data from the Office of Foreign Labor Certification (OFLC). Second, the operationalization of the visa programs in Mexico and the working conditions in the U.S. are discussed by taking into account the author’s ethnographic research on visa workers (H-2A and H-2B) from a community in Veracruz, Mexico. The aim is to illustrate the limitations and challenges that U.S. visa programs represent for Mexican migrants, as well as the American industries that depend on them.

40756

Measuring the Level of Environmentally Friendly Behaviour (EFB): A Case Study of South Sumatra Province, Indonesia

Marpaleni Marpaleni, Flinders University, Australia

Gour Dasvarma, Flinders University, Australia

Udoy Saikia, Flinders University, Australia

Indonesia is the fourth populous country on earth. Based on the 2015 Intercensal Population Census (SUPAS), this population lived in 67 million households spread across the country (BPS, 2017). This large number of households contribute to the depletion of natural resources and the creation of pollutants to the land, water and air. It is evident that to some extent, the choice of fuel used for cooking meals, of modes of traveling, or of the way some Indonesian households dispose of their garbage, make considerable impact on the creation of pollutants to the environment. These facts confirm that Indonesian households need to rethink about their lifestyle to help conserve the environment. In other words, they need to engage in an Environmentally Friendly Behavior (EFB). However, more information is needed to identify more precisely what support specific groups of people require to strengthen their EFB. This research aims to introduce an indicator, called the Environmentally Friendly Behavior Index (or EFBI), to measure how friendly the households in behaving towards the environment, in an Indonesian context. The aim of the research is going to be accomplished by conducting a study in South Sumatra Province as a case study. By collecting primary data from a sample of 490 respondents during August – October 2016, from a sub-sample of the Indonesian Annual Socio-economic Survey (SUSENAS), preliminary results of this study has revealed that the level of EFBI among the respondents is still low.

41609**Levels, Patterns, and Determinants of Hysterectomy in India**

Balram Paswan Paswan, International Institute for Population Sciences, India

Evidence of hysterectomy in India is limited partly due to unavailability of data in large-scale representative surveys. For the first time in the NFHS series, NFHS-4 collected direct information on hysterectomy from women age 15-49 years. Hence, we use NFHS-4 data collected from 29 states and 6 UTs of India in 2015-16 to examine the patterns and determinants of hysterectomy in India in women age 30-49 years. We use binary logistic regression models to understand the determinants of hysterectomy in India and its states. Results indicate that 6% of women age 30-49 years have undergone hysterectomy in India. Percentage of women who have undergone hysterectomy varies considerably across the states and UTs of India. The main reasons of the hysterectomy is being reported by respondent are excessive menstrual bleeding/pain (45%) followed by fibroids/cysts (14%). Years of schooling, caste, religion, geographic region of residence, wealth quintiles, age, age at first birth, and pregnancy complications were statistically associated with hysterectomy in India. Indeed, majority of hysterectomies were performed in the private sector.

Sunday Session III: 13:30-15:00Room: *To be Announced in Final Schedule*

Stream: Sociology

Session Chair: *To be Announced in Final Schedule***40774****Sexual Communication Satisfaction and Relationship Satisfaction: A Cross-Cultural Analysis**

HeeSoon Lee, Bowling Green State University, USA

Kerri Lynn Knippen, Bowling Green State University, USA

Although older adults are the fastest growing segment of the population in the United States, little is known about sexuality in later life. The purpose of the study is to understand how sexual communication satisfaction affect relationship satisfaction among middle-aged and older adults. The objective of the study is to examine age, gender, and ethnic differences in sexual communication satisfaction and relationship satisfaction, and the association between the two among participants. Participants included middle aged and older 164 (or 46.6%) Caucasian Americans, 76 (or 21.6%) African Americans, and 112 (or 31.8%) Korean Americans residing in Northwest Ohio in the United States. The study participants were divided into three age groups-the young (aged 40 to 49), the intermediate (aged 50 to 59) and the aged (60 and over). Results identified statistically significant differences in sexual communication satisfaction and relationship satisfaction based on age, gender, and ethnicity. Caucasian Americans and African Americans had significantly higher scores than Korean Americans in sexual communication satisfaction and/or relationship satisfaction. The results suggest that practitioners should develop age, gender, and ethnic specific programs to help middle-aged and older adults improve their quality of life through sexual communication.

40939**Life Satisfaction and Ethical Beliefs During the Economic Crisis: A Cross-Sectional Study of Finnish Consumers**

Arto Lindblom, Aalto University School of Business, Finland

Taru Lindblom, University of Tampere, Finland

In this study we analyze how the life satisfaction (as a cognitive component of subjective well-being) and ethical beliefs vary among demographic groups as the wider economic environment crumbles and the prospects for the future are bleak. Our study also addresses the theoretical question of how the life satisfaction is related to consumers' ethical beliefs in an insecure economic environment. Life satisfaction is measured by utilizing Satisfaction with Life Scale (SWLS) and ethical beliefs are measured by using the Consumer Ethics Scale. The empirical data is based on the cross-sectional study that was conducted in Finland in October 2015. In the fall 2015, the fear of economic meltdown in the country was real. Based on our analyses and a sample of 976 Finns, we argue that during an escalating economic crisis, life satisfaction is greatest among women, people who live with partners (with or without children), people having more than basic education, entrepreneurs and the higher income groups. In addition, we show that during the economic crisis Finns with the highest ethical standards tend to be older individuals and to have less education and less income. We also demonstrate that life satisfaction is strongly associated with ethical beliefs in a way that decrease in the level of life satisfaction increases the level of unethical behavior. These results contribute to current theories of consumer ethics and consumer psychology.

41050**Depression in Malaysia: Cultural Change, Control and Stress**

Gregory Bonn, King Fahd University of Petroleum and Minerals, Saudi Arabia

Cai Lian Tam, Monash University, Malaysia

Si Han Yeoh, Monash University, Malaysia

According to government estimates rates of depression, anxiety, and other forms of mental distress in Malaysia have increased nearly 3-fold over the last 20 years. This study examines this trend by first assessing the levels of depressive symptoms among a cross-section of Malaysians from 3 different regions and then looking at various potential predictors. A total of 728 adults from three Malaysian states (Selangor, Penang, Terengganu) completed Beck's depression inventory as well as measures of stress, locus of control, and health-related behaviors. Overall, 10% of respondents reported experiencing severe levels of depressive symptoms, with an additional 26% reporting moderate to mild depressive symptoms, numbers which roughly correspond to the Ministry of Health's estimate of 29% prevalence. When controlling for the influence of other variables, depressive symptoms were predictably related to higher levels of stress. Counterintuitively, however, lower levels of internal locus of control predicted lower levels of depression. Ethnic Chinese Malaysians, housewives and those engaged in professional-type occupations also reported fewer depressive symptoms. Future research is recommended to investigate how ethno-cultural differences within Malaysia influence risk profiles as well as how rapid social and economic changes may be differentially affecting the well-being of various socioeconomic groups.

Sunday Session III: 13:30-15:00

Room: *To be Announced in Final Schedule*

Stream: Cultural and Media Studies

Session Chair: *To be Announced in Final Schedule*

41953

Data Journalism in Malaysia: How Journalists Construct Stories Using Big Data?

Nik Norma Nik Hasan, Universiti Sains Malaysia, Malaysia

Research on data journalism in Malaysia is scarce. A few research that appeared sporadically in literature focuses on the importance of data as a journalistic resource. Little is known about how Malaysian journalists use data and dynamic visualization to report and publish news stories. Unlike other developed countries, the use of digital technologies for the collection and dissemination of data just become widespread in Malaysia about three years ago. Data journalism has become prevalent as a new and effective narrative type; and this situation has changed a way Malaysian journalists gather information, analyse and produce news. As there is no definitive definition for what constitutes data in journalism, it is very challenging to determine how journalists practice journalistic routines through numbers – gathering, filtering, visualizing and disseminating data. Most importantly how they deal with the issue of objectivity as one of the concerns of contemporary journalism. This paper, which is still in preliminary stage, intends to examine how Malaysian journalists incorporate data into journalistic practice for producing news. Online portal and mainstream journalists will be interviewed to explore their practice in constructing news using big data and their challenges to data journalism. Narrative analysis will be employed to understand the process of news construction and how they make sense of the stories gathered from big data for public consumption. This work also aims at examining how data journalism can be used to reach journalistic objectivity.

41693

Enhancing Media Literacy Through Content Analysis: A Comparison of Historic Speeches by Franklin D. Roosevelt and Implications for the Present

Nathaniel Edwards, Yamaguchi National University, Japan

In the contemporary global era of false or misleading news spread rapidly by online social media, the need for enhanced media literacy and advanced critical thinking skills has become increasingly urgent. Responsible and accountable political leadership based on reliable and consistent facts and reporting is essential for the development of national and international policies which promote and support a sustainable world. Content analysis can be employed as a useful tool to enhance media literacy by systematically analyzing, evaluating, and comparing media reports and speeches by public officials. Researchers can use a coding procedure to identify and group various units of text to detect key patterns and themes. Content analysis is an objective, systematic, and effective method to improve media literacy and critical thinking skills by combining quantitative and qualitative research approaches. Factors such as the frequency of various vocabulary items and the lexical density of a written text can be measured by content analysis (Creswell, 2005). This presentation demonstrates the practical use of content analysis by examining the first and third inaugural addresses of Franklin D. Roosevelt and uses both manifest and latent coding to detect stylistic and thematic similarities between the two different texts from the same source. Manifest coding involves the surface level features of a text that are clearly visible to the reader, while latent coding is used to detect deeper, underlying levels of meaning and major themes (Neuman, 2003). Implications for analyzing and understanding contemporary media reports and political discourse are also addressed.

41975**Emotional Resonance and Individual Bias in Advertisements: Depictions of Individuals are Perceived as More Emotional Than Depictions of Groups**

Matt Johnson, Hult International Business School, USA

Laura Detter, University College London, UK

Prince Ghuman, Hult International Business School, USA

Video advertisements can create strong emotional responses in viewers. While emotionality is common strategy, little work has systematically explored the factors which make advertisements emotional. We set out to explore this by examining how the number of people in the advertisement influence its emotional resonance. We hypothesized that, in line with previous observations from the moral judgement literature (e.g. Slovic 2007), depictions of a single individual would inspire more emotional connection than depictions of groups. To evaluate this, we created 10 original paragraph-long vignettes which promoted specific products. For example, one depicted a someone running through an airport and barely making their flight, as an advertisement for running shoes. In one condition, the vignettes depicted a group of people, while in the other, it featured only a single individual. The vignettes were identical in all other respects, instantiating 'group size' as the independent variable. After reading each vignette, participants judged how emotional these advertisements were (e.g. how much did the scenario change our emotional state?) and their attraction to the product (e.g. how likely would you be to purchase this product/service?). The results confirmed our hypothesis: individually-based vignettes were consistently reported as more emotional. Furthermore, individual-based vignettes were also associated with a higher demand for the featured product. Overall, these findings elucidate an important factor which make advertisements both more emotional, and more compelling. Ongoing work is exploring how this general effect interacts with other features, such as whether the product is want-based or need-based.

Sunday Session III: 13:30-15:00

Room: *To be Announced in Final Schedule*

Stream: Energy: Renewable Energy and Environmental Solutions

Session Chair: *To be Announced in Final Schedule*

40843

Investigating State of Sustainable Building Design Parameters

Reihaneh Aram, Eastern Mediterranean University, Cyprus

Halil Zafer Alibaba, Eastern Mediterranean University, Cyprus

Sustainability is understood to be the solution to environmental challenges. Sustainable architecture involves an environmentally friendly design, which has a minimum negative effect on the natural environment. Due to the basic environmental pollution caused by energy generation, improving the environmental performance must involve all sustainable building elements throughout design and energy efficiency. The aim of this study is to discuss sustainable building design in the context of green architecture principles, such as Eco-friendly and energy efficiency throughout the building performance. Furthermore, this paper deals with sustainable building performance, which depends on the sustainable design parameters implemented. This is a qualitative study whose methodology is based on descriptive and analytic methods. The discussion part includes comparison, analysis, and general discussion of the relevant information through the literature reviews and document information. This research depicts that building design parameters and building performance were faced with a conceptual revolution by the advent of sustainable buildings systems, even as the sustainability concept influences the occupants. Additionally the concept of the sustainable energy building ideals effect on the human thoughts and lifestyle, which it has contrast with last decades. For instance, in the hot climate, windows blind left open on the south facade of the building throughout summer can contribute to increasing heat gain, as the same time it's vital for having further mechanical cooling. However, if design operable windows in the left open overnights during winter, it would cause useless heating, overall the users have a major role in the whole building energy usage.

41162

Analysis, Distribution, and Visualization of Weather Data for Sustainability Applications

Jaimie Obatake, University of Hawaii at Manoa, USA

Kevin Cho, University of Hawaii at Manoa, USA

Anthony Kuh, University of Hawaii at Manoa, USA

Expansion of technology in the recent decade has driven dependency on electricity, as we rely on it to power our livelihoods (e.g. computers, entertainment, smart devices, electric cars). Fossil fuel shortages have raised electricity costs for states dependent on them, such as Hawai'i, to more than double the national average of 13 cents/KWh. To solve issues of growing electricity consumption and elevated costs, the State of Hawai'i has committed to one hundred percent renewable energy sources by 2045. Currently the intermittency of weather patterns and the inability to forecast power load and production has limited the use of renewable energy in the utility grid. Future integration of intermittent sources would require energy control systems to provide real-time response of users and control large variability of energy production due to seasonal, time of day, and weather changes. This work proposes a well-engineered approach to solving the current unreliability of microgrids. The design uses a three-stage system involving modular data collection, visualization, and prediction subsystems. Using a scalable software infrastructure and powerful data analysis tools, the integrated software system is able to display almost-real-time data collection and subsequent hourly forecast analysis. This approach can assist the State of Hawai'i in meeting its ambitious goal of 100% renewable energy generation.

40858**Energy and Development Discourse in Cambodia: Gaps Between Energy Infrastructure for Industrial Development and Energy Needs of People**

Maureen Boyle, Curtin University, Australia

As the Royal Government of Cambodia attempts to lead the country from 'least developed' to 'middle income' status as classified by the United Nations, fresh insights are required on the relationship between energy and development policies and energy provision in Cambodia. To this end, key energy and related development policy documents have been collected and subject to discourse analysis for this article along with the transcripts of interviews with participants from the solar energy industry, development NGOs and the United Nations in Cambodia. This mixed-method investigation has identified substantial gaps between a path towards centralized energy generation with large-scale hydroelectricity and a path to decentralized energy generation including off grid, household and utility scale solar PV and small hydro. With limited grid access in rural areas of Cambodia, the policy documents recognize the role of decentralized renewable energy, particularly solar PV and small scale hydro. They also place significant emphasis on the private sector providing energy services. However, this research has identified a lack of policy framework and incentives for providing energy for people in much of the country. It also identifies an opportunity to overcome the absence of energy network infrastructure through the adaption of supportive policy settings for transitioning Cambodia's energy sector to include a mix of decentralized renewable energy, largely comprising solar PV with grid integration where available. Additionally, more proactive energy projections and planning for energy services is required to meet the needs of industry and people and to avoid, where possible, unnecessary large hydroelectric projects.

Sunday Session III: 13:30-15:00

Room: *To be Announced in Final Schedule*

Stream: Cultural Sustainability: Protecting, Preserving and Conserving

Session Chair: *To be Announced in Final Schedule*

40290

Evaluation of Social Sustainability in Building Projects: Theoretical Framework and Impact Assessment Approach

Siyu Liu, Nanyang Technological University, Singapore

Shunzhi Qian, Nanyang Technological University, Singapore

In the last decades, various sustainability assessment tools have been developed to facilitate shift towards sustainability in building industry. However, existing tools mainly focus on environmental and economic issues while give limited consideration on social aspects. This study fills this gap through developing a methodological framework for social sustainability assessment of building projects. Social life cycle assessment method was adopted as the basis for framework development, which aims to assess the potential positive and negative social impact of products or systems throughout their life cycle. Firstly, four stakeholder categories including workers, occupants, local community and society were identified covering groups of people potentially affected by life-cycle activities, based on which social subcategories were selected under each stakeholder category to illustrate different social concerns. Weights among these impact categories were then obtained through AHP process. Secondly, building-specific indicators to assess these impacts and their performance reference values were proposed, including both quantitative and semi-quantitative ones. Values of quantitative indicators can be directly obtained from project records, whereas for semi-quantitative indicators, experts' verbal and qualitative assessments should be conducted and further converted to numbers based on fuzzy set theory method, which addresses the imprecision and uncertainty inherent to human judgments using linguistic terms and fuzzy numbers. Finally, data collection structure combining generic and site-specific information was proposed, and life-cycle social impact index can be calculated based on performance reference values and weights. The proposed social sustainability assessment method was illustrated using a case study of a modular building.

40442

Theoretical BIM Framework to sustain the 20th Century Educational Heritage in Bangkok: PNRU Buildings

Waranyoo Siriwan, Phranakorn Rajabhat University, Thailand

Kitikorn Makaluk, Phranakorn Rajabhat University, Thailand

Pornsiri Teerajak, Phranakorn Rajabhat University, Thailand

The implementation of BIM (Building Information Modelling) to conserve local educational heritages in Bangkok cannot be extensively reached to the dimension of facility management and the application for sustainable educational society. In particular, the scope of BIM management cannot integrates between the existing AEC (Architecture, Engineering and Construction) documentation and sociocultural analysis to be adaptive use as a sustainable. This paper focuses on theoretical BIM framework to sustain the educational heritages in Bangkok by expanding BIM scope to manage efficiently the historic building and sociocultural information in the institution. The research provides a literature review and a qualitative analysis in the BIM theory for heritage conservation, and the sociocultural information through the institute identity. This paper selects the building number 5 and the building number 6 of PNRU (Phranakorn Rajabhat University) constructed in the early 20th century which it is a pioneer period of modern-Thai architecture in Bangkok, as a paradigm to discuss. After investigating the BIM framework related to the information of the both heritage

buildings, it is found that BIM scope can be possibly applied for the historic education conservation project in the level of the management and the social enhancement. The research outcome offers comprehensively theoretical BIM framework being suitable for the educational heritage building for not only conservation but revitalization, correlated educational community context.

40934

Cultural Sustainability of India: A Survival Story

Rupa Singh, Anant National University, India

The paper explores the Cultural Sustainability of India by protecting, preserving and conserving the transparent, ethical and responsible model of ancient India with reference to Vedic literature, Upanishad and Kautilya's Arthashastra. Stories of sustainability and survival deal with land, justice, foreign policy, war and environment through ages. The Constitution of India upholds the cultural identity of India intact and is largely responsible for cultural and social sustainability of India at present. Besides, India must not in the rat race for surviving and thriving after the 'Brundtland Report' of 1987, forget the ancient knowledge of sustainability, values and principles, the middle path of Lord Buddha and treatise like Chanakya Neeti. Hinduism, a way of life also acts as the pillar for social, economic and environmental development. The paper emphasises on events, policies and pacts where it went wrong in history and the cultural sustainability of India that acted for its survival. The paper through different examples concludes that inclusive and tolerant culture of India revamp the sustainability in general and cultural sustainability in particular, helping India survive and thrive in the world carving a niche for her.

Sunday Session IV: 15:15-16:45Room: *To be Announced in Final Schedule*

Stream: Anthropology, Archaeology, Cultural Studies and Humanities

Session Chair: *To be Announced in Final Schedule***39685****Assessing Quality of Life and Menopausal Symptoms Among Lothas of Nagaland, India**

Peteneinuo Rùlu, University of Delhi, India

The study aims at assessing the quality of life and menopausal symptoms in rural population of Wozhuro range, Nagaland. In the studied population a sample size of 202 adult females were selected with age ranging from 35-60 years and were divided into two groups based on the menopausal status. An exclusion criterion was selected where those participants who were pregnant, undergone induced menopause and unmarried were excluded from the study. The quality of life was assessed using WHOQOL-BREF, Greene Climacteric Scale for menopausal symptoms and a structured proforma was formulated for collecting socio-demographic parameters. The mean and standard deviation in all domains of quality of life showed higher values among premenopausal as compared to postmenopausal females and the chi-square value was found to be significant for psychological, social and environmental domain. The multinomial regression suggested that those participants who had lower quality of life were at risk of developing anxiety, depression, somatic and vasomotor symptoms. Poor current health status also showed higher risk of depression whereas education did not show significant association with menopausal symptoms. Menopausal women were also found to be more at risk of developing anxiety and vasomotor symptoms. Rural females of Wozhuro range showed lower quality of life among postmenopausal females as compared with premenopausal females and poor quality of life was associated with the severity of menopausal symptoms. The study on related facts of menopausal women is important to help women undergo the distressing period of their life with ease.

40952**From Consumers, Spectators to Creators: The Aesthetic Empowerment in Contemporary Society**

Hiu Ting Christine Lee, London School of Economics and Political Science, Hong Kong

Cultural distinction is a field of power struggle in which alternative forms of power are generated. To elaborate, it is the philosophical debate on culture and the arts that allows the civil society to realize the fact that culture and the arts are beyond mere products for consumption but power-contesting mediums. Cultural distinctions, differentiations between high culture versus low culture, high art versus low art, or art versus non-art, shall not be seen as neutral categorizations. Rather, they belong to the discursive production of culture, which I would like to call, the phenomenon of aesthetic vocabularies as discursive power. The arts, culture and power have always been notions that reinforce each other. Hence, instead of taking analysis of cultural distinctions as what makes cultural theory into social theory of power, developments of culture and arts have always been echoing socio-political changes. This paper aims to elaborate on the social turn of art with reference to critical theory and the work of Bourdieu. While laying out a theoretical introduction on how cultural theories enable us to understand the sociology of art, this paper shall focus on how the duality of resistance and freedom in art gives rise to the aesthetic re-appropriation of discursive power. The way how agency, society and the radically changing roles of the viewers and the artists in contemporary art reinforce each other to demystify art will also be analysed.

41530

Venit Vanit: A Thai Translation of the Merchant of Venice as a Force for Sustainable Peace and Social Justice

Rachod Nusen, Chiang Mai Rajabhat University, Thailand

This paper is a study on Venit Vanit, a Thai translation of William Shakespeare's *The Merchant of Venice*. It attempts to deconstruct a tendency among Thai critics and theatre practitioners to regard Venit Vanit as a story about the "greedy" Jew and the "merciful" Christians. This paper argues that this reading is part of a political project to promote "Thainess" which is hostile to minority groups. By emphasizing and exaggerating the evil of Shylock and the virtues of Christian characters, the translated play is used to construct a misleading image of "the others" who are trouble makers and deserve to be discriminated and punished. In turn, this perception justifies discriminatory treatments and injustice that people from minority groups are facing in reality. The paper then demonstrates that it is possible to read Venit Vanit in another way and use the play to encourage sustainable peace and social justice for people from different backgrounds.

Sunday Session IV: 15:15-16:45Room: *To be Announced in Final Schedule*

Stream: Sustainability

Session Chair: *To be Announced in Final Schedule***40851****Sustainability of Agriculture as a Means of Livelihood among Marginal and Small Agricultural Households in India**

Raya Das, Jawaharlal Nehru University, India

This paper addresses two key goals of sustainable development of agriculture; one is economic profitability of farming and another is livelihood sustainability of the sector on the basis of latest large scale survey on marginal and small agricultural households in India. At the onset, the paper describes the distribution of marginal and small farmers and the pattern of their earning from farming along with their share of farm income to total income across states. Furthermore, this study analyses the structure of cost of cultivation across states considering per hectare input cost and share of individual cost item to the total cost of production. It focuses on the margin over cost (return from agriculture), followed by computation of the cost of production of per unit of output (expensiveness of farming) across farm size groups and regions. The results of double log regressions indicate that margin over cost is very low for the marginal farmers of Andhra Pradesh and West Bengal which is further related to the sustainability of this sector as a source of livelihood in this regions. Livelihood sustainability has been conceptualized as the potentiality of farm income to create subsistence level of income at the household. The analysis revealed that only 25 percent of marginal farmers are relied solely on agricultural income and 60 percent of them are unable to earn subsistence level of income which questions the ability of the farm sector as a sustainable source of livelihood for the marginal and small agricultural households in India.

40746**Connecting with and Converting Users Into Environmentalists: Examining the Role of Regulatory Fit, User Experience, and Engagement**

Chia-Lin Hsu, Chinese Culture University, Taiwan

With the increasing awareness of the need for environmental protection, there have been significant efforts to improve people's acceptance of green products and to encourage them to engage in effective recycling for sustainable development. However, almost no studies have examined how website types through the design of gamification mechanisms on recycling influences users' intention to use it, and in turn, affect the intention towards resource recycling. This study also investigates the mediating roles of user experience and engagement. This study uses partial least squares (PLS) to test the causal relationships among website types (hedonic versus utilitarian website), regulatory focus (promotion-focused versus prevention-focused), user experience, engagement, intention to use the website, and intention towards resources recycling; it will also use PLS to explore the mediating effects of user experience and engagement in the different website types. Furthermore, this study uses Recyclebank as the subject, and then conducts a web-based questionnaire to collect data. Finally, according to the empirical results, this study contributes to website managers' understanding of the impacts of users with different regulatory focus faced with different website types, i.e., the generation of regulatory fit (vs. regulatory non-fit) on behavioral intentions. Furthermore, this study helps website managers by identifying the impacts of users with different regulatory focus faced with different website types, to learn how they can improve the behavioral intention of users and understand how user experience and engagement are important factors. In summary, the findings of this study can help to connect with and convert users into environmentalists.

40423**Bridging the Global and Local Needs for Sustainable Maritime and Ocean Development Through Capacity Building Training**

Momoko Kitada, World Maritime University, Sweden

Johan Bolmsten, World Maritime University, Sweden

This paper discusses the application of innovation tools and techniques to a training course for maritime and ocean professionals who are expected to contribute to sustainable development of their countries. In 2015, the 17 sustainable development goals (SDGs) were adopted by the United Nations (UN) to facilitate collaborative partnerships in achieving the prioritised areas of worldwide development by 2030. As a specialized UN university, the mandate of World Maritime University (WMU) is capacity building through education and research. However, there was a gap between their gained knowledge and its application to practice when the graduates go back to their countries. To bridge this gap, a training course was developed to teach how to transform their knowledge to practice and focus on practical methods for capacity building in developing countries. The training was designed to localise the SDGs and practising innovative thinking. Innovation tools and techniques were used during the workshops and the grouped students demonstrated their abilities of developing a project concept and identifying necessary resources to achieve their specific objectives. Audio-visual data were collected during the workshops and two focus groups were conducted after the training course. The paper concludes that innovation workshops have benefited the majority of participants in terms of internalising the global agenda and externalising the concept in its local contexts. The process of transforming knowledge to practice by using innovation tools and techniques reflects the idea of knowledge management. The course has proven the element of innovation as an important component to design such training.

Sunday Session IV: 15:15-16:45Room: *To be Announced in Final Schedule*

Stream: Environmental Sustainability & Environmental Management

Session Chair: *To be Announced in Final Schedule***40908****Reduction of Toxic Gases From Hydrolysis Process of Secondary Aluminum Dross**

Satamongkon Trekitwattanukul, King Mongkut's University of Technology North Bangkok, Thailand

Lida Simasatitkul, King Mongkut's University of Technology North Bangkok, Thailand

Sukanya Thepwatee, King Mongkut's University of Technology North Bangkok, Thailand

Siriporn Pranee, Kasetsart University, Thailand

Samitthichai Seeyangnok, King Mongkut's University of Technology North Bangkok, Thailand

Nowadays, people use a lot of aluminium in many applications such as vehicle parts, building parts and packaging due to their properties; high strength, high scratch resistance and low weight. Aluminium waste can be recycled by melting at high temperature generating pure aluminium and aluminium dross; Aluminium dross is non-value product. Aluminium dross is a hazardous waste which contains various compounds such as aluminium nitrile, aluminium sulfide, aluminium phosphide and many kinds of salt. When aluminium dross contacts with water or moisture in the air it can produce odorous gases. These gases are affecting to human health and environment. This research proposes the way to accelerate hydrolysis process of aluminium dross and toxic gases trapping by acid or alkaline solution. The aluminium dross as received was characterized by X-ray diffraction technique. The results showed the kind of generated toxic gases from hydrolysis process and were confirmed by gas detector tube. Ammonium gas was generated by using alkaline solution. Moreover, hydrogen sulfide and phosphine gas were generated by acid solution. Toxic gases trapping were achieved by hydrochloric acid, potassium permanganate solution and ethylene glycol.

39285**Farmers' Experiences on Climate Change: Analysis of Smallholder Rice Farmers in the Upper East Region of Ghana**

Abdul-Razak Zakaria, University of Tsukuba, Japan

Kenichi Matsui, University of Tsukuba, Japan

This paper compared smallholder rice farmers' experiences and knowledge about climate change with the actual meteorological data in the Upper East Region of Ghana. Questionnaires were used to understand farmers' experiences on climate hazards and adaptation strategies. We correlated survey results with that of Mann-Kendall trend test and the coefficient of variation of mean values of actual rainfall and temperature in our study area. Results from field survey show that more than 60% of respondents experienced climate hazards in the form of increasing temperature, decreasing rainfall and changing planting dates. This result is consistent with results of the Mann-Kendall trend test that showed an increasing trend of maximum temperature and a decreasing trend of annual rainfall but inconsistent with no trend observed for minimum temperature. The change in planting dates is attributable to the increased coefficient of variation of annual rainfall from 16.5% to 28.1% as observed in the study. We argue that farmers' experiences are to a greater extent reliable particularly in detecting changes in rainfall patterns. Their experiences can also supplement missing or insufficient meteorological data to inform policy.

41972**Kala Cotton: A Sustainable Alternative**

Banhi Jha, National Institute of Fashion Technology, India

Further to the Brundtland Report, Our Common Future (1987) this paper extends the model of sustainable practices of 'interconnecting people, processes and environment' (Hethorn and Ulasewicz 2008) to cotton-growing farmer community and users of cotton among organizations Indian designers. Presently, 96% of India's cotton cultivation is under Bt (*Bacillus thuringiensis*) cotton crops, the first genetically modified crop to be approved for cultivation in India in 2002. While introduction of Bt cotton led to a dramatic increase in production across cotton producing states, there have also been controversies regarding allegations of spurring farmer suicides in the country, thereby pointing to unsustainability of these genetically modified seeds. The greatest sustainability challenges for cotton cultivation are to reduce pesticides, fertilizers and water use while promoting better working conditions and financial returns for farmers. Organic cotton cultivation is a system that does not use synthetic pesticides, fertilizers, growth regulators or defoliants. Kala cotton is an indigenous, organic, rain-fed crop growing in eastern Kutch, Gujarat. This species of cotton offers obvious benefits including healthier soil quality and place less demand on the scarce water resources. In order to explore the possibilities of Kala cotton, some non-governments organizations (NGOs) are engaging with farmers to research about the crop to facilitate collaborations with weavers. Some fashion designers, online crafts and even a large textile mill are using Kala cotton for fashion apparel. Through survey and interviews of a sustainable fashion designer and an NGO, this paper discusses the resurgence of Kala cotton.

Sunday Session IV: 15:15-16:45

Room: *To be Announced in Final Schedule*

Stream: Environmental Sustainability & Human Consumption

Session Chair: *To be Announced in Final Schedule*

41241

Desirable Specification of Vetiver Grass Roofing Making Machine

Kridsada Saisang, Suranaree University of Technology, Thailand

Krawee Treamnuk, Suranaree University of Technology, Thailand

Tawarat Treamnuk, Suranaree University of Technology, Thailand

This research objective was to utilize the grass waste by using it via the grass roofing material. The appropriate mechanism and powertrain of the machine for the reducing of handwork process and time in grass roofing material manufacture were studied. The SolidWorks 2016 Software was used to design and determine the limitation of mechanisms by use the Motion Studies function of the software. The analyzed data were calculated to determine the size of actuator and power required for driving the machine. The result found that the designed machine required a 6 bars of air supply pressure and could have 5 mainly components such as (1) Grass sheet folding mechanism driven by the 63 mm diameter of pneumatic cylinder with the 28.08 liters/min air supply. (2) Grass sheet pressing mechanism powered by a couple of 40 mm diameter of pneumatic cylinder with the air supply 15.06 liters/min. (3) The wood rod frame gripping mechanism driven by the 12 mm diameter of pneumatic cylinder with the air supply 0.66 liters/min. (4) The grass sheet feeding mechanism for the sewing process used the 50 Watts electric gear motor and (5) Electric sewing machine model GK26-1A to seam the grass sheet with the wood rod frame.

40579

Recycle of Semarang City Liquid Waste with "Reuse" Consortium of Mangrove Probiotic Bacteria Treatment

Delianis Pringgenies, University of Diponegoro, Indonesia

Rini Widiyadmi, Sma Islam Al Azhar 14 Semarang, Indonesia

Ragil Susilowati, Diponegoro University, Indonesia

Azahra Aliyyu Denaldo, Sma Islam Al Azhar 14 Semarang, Indonesia

Muhamad Afwan Shadri Viharyo, Diponegoro University, Indonesia

Statement of the Problem: Reuse bioactivator liquid composter had been produced for liquid waste treatment consist of four probiotic bacteria function as pathogenic antibacterial-agent. Whereas the use of four consortium probiotic bacteria will have a better pathogenic antibacterial activity than only one type. The purpose of the research is to process liquid waste and produce clean water by means of eliminating the number of pathogenic bacteria using a "Reuse" probiotic consortium. Further step is pathogenic bacteria count after treatment and phyto-chemical analysis of the "reuse" product. Methodology & Theoretical Orientation: Reused liquid is added to each waste water sample in 10 and 20 ppm concentration. Observation includes: resulting odor, microbial development, absorbance rate, identification of pathogenic bacteria by morphology, and phytochemical screening of the resulting compounds. The results show that sample with 20 ppm reused water is odorless, with lowered density of pathogenic bacteria population from 12×10^8 cell/mL to 3×10^8 cell/mL, and lowered absorbance rate from 0.625 nm to 0.225 nm. Staphylococcus Aureus is found to be the most prevalent pathogenic bacteria in the waste water. The microbial consortium is found to produce alkaloid, tannin, and steroid. The formation of inhibition zones is the result of microbial consortium activity against the pathogenic bacteria. Conclusion & Significance: Applied technology of "Reuse" mangrove probiotic bacteria consortium had significantly be able in recycling

Semarang city liquid waste to produce clean water.

39557

Improved Hybrid Biological Reactor Design Under Mixed-Growth Conditions

Mohd Elmuntasir Ahmed, Kuwait Institute for Scientific Research, Kuwait

Rashed Al-Yaseen, Kuwait Institute for Scientific Research, Kuwait

Wastewater treatment and disposal is a pillar for safeguarding public health and sustaining socioeconomic development. The cost and design efficiency of various wastewater treatment technologies are key factors in the economic value of treated wastewater. However, biological treatment processes are among the most valuable among a vast array of treatment technologies. Biological reactors conventional design procedures are normally sufficient to achieve desired treatment efficiencies while assuming suspended-growth only and attached growth only. The ASP and RBC are typical examples. This assumption of one dominant state of microorganisms has come under increased scrutiny in recent years due to advances in biological processes. For instance, in a fluidized bed biofilm reactor or an integrated film activated sludge reactor, high fluid shear can dislodge attached cells in high quantity and increases the amount of suspended cells. These biofilm reactor, intended by design, may actually be operating like a suspended growth reactor. As such, these reactors have become a bona fide "hybrid" biological reactors. In hybrid biofilm reactors neither suspended nor biofilm kinetics are dominant. Procedures incorporating both suspended and attached growth kinetics must be used. This paper addresses possible improvement in the design procedure for hybrid reactors using a mathematical model and preliminary results of experimental testing of a hybrid reactor using petrochemical wastewater. The model takes into consideration parameters which were not considered in conventional design procedures such as biofilm diffusional resistance, suspended versus attached microorganisms substrate utilization ratio (biomass ratio in conventional design procedures), hydraulic retention time, and shear loss.

Virtual Presentations

40853

Research on Photovoltaic Power Generations Installed in Veranda of Apartment Houses

Keiju Matsui, Minna-denryoku Inc., Japan

Eiji Oishi, Minna-denryoku Inc., Japan

Mikio Yasubayashi, Chubu University, Japan

Masayoshi Umeno, Chubu University, Japan

Masaru Hasegawa, Chubu University, Japan

Preserving the developments of economy, science and technology with conquering the problems against environmental conservation is an important assignment for humanity of the world. The usage of the renewable energies is expected to be able to mitigate such problem. The renewable energy including photovoltaic power generations have been accepted and spread widely. Various innovative power conditioning systems have been also studied. In domestic utilization, the actual application of such solar panels is almost installed on top of the roof of the detached house. However, some residents living in the apartment house are having a fairly strong desire to contribute for energy saving due to natural energy generation. The generating power in such case is fairly reduced, so the system construction should be balanced with the reduced power. Thus, it is necessary to improve the construction toward simple one. In this paper, in order to give a reply, simple and concise photovoltaic power generating systems are examined. Considering fairly reduced generation power and narrow space of installation in the apartment houses, the system constructions should be simple and concise. The system construction which gratified their wishes are presented and discussed. These solar panels can be easily connected like usual home appliances having attached plug for connection. For reversed power flows and increasing harmonics, their protecting circuits are installed in the input power line. Simple system circuit and construction will be presented and discussed.

41937

Surviving Change by Engaging Sustainable Development

Koushik Ghosh, Central Washington University, USA

Despite the alarming UNIPCC reports, the policy discourse on climate change has remained focused on changing incentives for businesses, using government mechanisms, such as subsidies for clean energy, carbon tax, and creating a market for carbon. While this discourse is valuable, since it tries to establish a price for carbon, to which businesses are expected to respond and change their business models, public policy focus remains consciously and deliberately unaware of the ethical aspects related to habitat and environment. The focus, remains on economic efficiency (resource allocation) and equity (distribution). Unfortunately, the radical uncertainty and change that climate change is expected to trigger, as we cross temperature thresholds established in the earlier reports, makes it imperative that all discussions of efficient solutions and equity debates be paired and linked with the ethical aspect of living and surviving in times of change. Fundamental changes, such as wars, and social upheaval-related events, which climate change is promising to be, requires us to move away from the relatively easier discourse about changing the 'business as usual' model by crafting new 'incentives.' The changes that all the species of this planet are facing, requires us to engage with the ethics of sustainable development, and not just its distributional equity and market efficiency. This paper attempts to introduce a very germane discussion of ethics into the equity-efficiency framework, which presently provides the scaffolding for the public policy discussion on climate change and sustainable development.