

BOOK OF CONFERENCE PROCEEDINGS

GIMAR

FEBRUARY 26-27, 2019

5TH INTERNATIONAL CONFERENCE ON
GLOBAL ISSUES IN
MULTIDISCIPLINARY RESEARCH & PRACTICE
(Tokyo, Japan)

Organized by:



GLOBAL
ILLUMINATORS

5th International Conference on “Global Issues in Multidisciplinary Academic Research”(GIMAR- February, 26-27, 2019)

GIMAR© 2019 Tokyo, Japan

Global Illuminators, Kuala Lumpur, Malaysia.



GIMAR 2019

Conference Proceeding

Book of Abstracts

**5th International Conference on
“Global Issues In Multidisciplinary Academic Research”
(GIMAR -2019)”**

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Japan**

Editor:

Dr. Ahmad Saddam Ph.D.

Country Director (Global Illuminators Iraq)

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Farooq Ahmed Jam (Ph.D.)

Executive Director (Global Illuminators)

Conference Co-Chair

Tariq Iqbal Khan (Ph.D.)

Assistant Professor

University Of Haripur, Pakistan

Conference Co-Chair

Muhammad Abbas (Ph.D.)

Director Policy & Research (Global Illuminators)

On Chee Hoong

Manager Operations (Global Illuminators)

Conference Chair Message

Farooq Ahmed Jam (Ph.D.)



5th International Conference on “Global Issues In Multidisciplinary Academic Research” (GIMAR - 2019) serves as a platform that aims to help the scholarly community across nations to explore the critical role of multidisciplinary innovations for sustainability and growth of human

societies. This conference provides an opportunity to the academicians, practitioners, scientists, and scholars from across various disciplines to discuss avenues for interdisciplinary innovations and identify effective ways to address the regional and global challenges faced by our societies. The research ideas and studies that we received for this conference are very promising, unique, and impactful. I believe, these studies have the potential to address key challenges in various sub-domains of social sciences and applied sciences. The scholars attending this conference will certainly find it helpful in refining their own research ideas, finding solutions to basic/applied problems they face, and interacting with other renowned scholars for possible future collaborations.

I am really thankful to our honorable scientific and review committee for spending much of their time in reviewing the papers for this event, selecting the best paper awards, and helping the participants in publishing their research in affiliated journals. Also, special thanks to all the session chairs from industry, academia, and policy-making institutions who volunteered their time and support to make this event a success.

A very special thanks to the great scholars for being here with us as keynote speakers. Their valuable thoughts will surely open the horizon of new research and practice for the conference participants coming from across the globe. I am also thankful to all the participants for being here with us to create an environment of knowledge sharing and learning. We, the scholars of this world, belong to the elite educated class of this society and we owe a lot to return to this society. Let's break all the discriminating barriers and get free from all minor affiliations. Let's contribute even a little or single step to the betterment of society and the welfare of humanity to bring prosperity, peace, and harmony in this world. Stay blessed.

Type of GIMAR Papers

For this year, GIMAR has two types of papers: *Empirical Studies* and *Insight*. Research papers meet the needs of researchers and are reviewed on the basis of highest academic standards. The objective of the academic paper is to contribute to the scientific body of knowledge. On the contrary, Insight papers meet the needs of policymakers and professionals and are reviewed on the basis of high practice standards. The objective of the Insight is to identify real-world problems and how they can be solved with the help of information systems.

Reviewing Criteria

In GIMAR, all papers are judged on the same criteria (relevance, significance, originality, validity, and clarity). However, some criteria differ between the Research papers and Insight papers.

Relevance: Relevance has a great impact on the theme of the conference. The material is relevant and according to the theme of the conference.

Significance: Knowledge of different researches in the conference is related to research papers and insight papers.

Originality: Ideas that are new for the researchers are used in the conference.

Validity: Research papers in the conference are based on theory while the insight papers in the research are based on experimental researches. References are according to content.

Clarity: Papers are according to the format, language is easy and understandable by the audience in the conference.

Acceptance Rates

Full Research Papers				
Submitted Papers	Accepted Papers	Withdrawn	Unqualified papers	Acceptance Rate
60	44	7	9	66%

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Acknowledgment

A huge number of people helped in conducting the conference. First of all, thanks to all the members of the Conference and Program Committee and representatives of the GIMAR board and their helpers. We also want to thank all the Track Chairs and reviewers, as well as all the members of the Scientific Committee, for their help in the review process and organizing the tracks and special sessions. We thank everyone for their hard work and dedication to this conference, and we look forward to the latest episode of the GIMAR tradition.

Farooq Ahmed Jam (Ph.D.), Tariq Iqbal Khan (Ph.D.)
and Muhammad Abbas (Ph.D.)

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INTERNATIONAL SCIENTIFIC REVIEW COMMITTEE GIMAR-2019

BUSINESS, MANAGEMENT, AND ECONOMIC STUDIES

Palti Marulitua Sitorus (Ph.D.)

Telkom University, Indonesia

Mej Mohd. Noor Azli bin Hj. Ali Khan (Ph.D.)

University Technology, Malaysia.

Prof. Ravindran Ramasamy (Ph.D.)

Graduate School of Business,

UniRazaK, Kuala Lumpur, Malaysia

Ludmila Mládková (Ph.D.)

Faculty of Business Administration, Department of Management

University of Economics, Prague

Mohd. Norfian Alifiah

Faculty of Management,

Department of Accounting and Finance,

Universiti Teknologi Malaysia, Malaysia

Ahmed Saddam (Ph.D.)

Country Director- Iraq

Global Illuminators

Mohammad Hamad Khalef AlKhresheh (Ph.D.)

Country Director-Jordan

Global Illuminators

Dr. Suresh B.Gholse (Ph.D.)

Vatar Meherbaba College,

Rtm Nagpur University, Nagpur, India

Ghulam Rasul Awan (Ph.D.)

UCP Business School, UCP Lahore, Pakistan

Lau Wee Yeap (Ph.D.)

Faculty of Economics & Administration,

The University of Malaya, Kuala Lumpur, Malaysia

Vignes Gopal

Faculty of Economics and Administration

University of Malaya, Malaysia

J. A. Arul Chellakumar (Ph.D.)

Head Department of Economics

Bharathidasan University

Tiruchirappalli, Tamilnadu, India

Girish Karunakaran Nair (Ph.D.)

Programme Leader

International Hospitality Management Faculty

Stenden University, Qatar

Galla Venkata Rama Krishna Acharyulu (Ph.D.)

School of Management Studies,

University of Hyderabad, India.

Amir Hossein Dastaviz (Ph.D.)

Institute of Graduate Studies,

The University of Malay, Kuala Lumpur, Malaysia

Syed Ahmed Salman

International Islamic University

Malaysia, Gombak, Selangor, Malaysia

Dr. Wurim Ben Pam (Ph.D.)

Federal University, Dutsin-ma,

Katsina State, Nigeria

Wang, Yu-Mei

Asia University, Taiwan

Aglis Andhita Hatmawan

STIE Dharma Iswara Madiun, Indonesia

Hasnun Anip Bin Bustaman

University Teknologi MARA, Malaysia

Bertin Chen

Vanung University, Taiwan

Susan Irawan Rifai

Centro Escolar University, Philippines

Jihoon Kim

Ehime University, Korea, South

Chien-Tu Jeff Lai

National Chengchi University, Taiwan

Haykel Hadjs Alem

LEM, University of Lille France, France

Prof. Dr. Tarek Taha Ahmed

Faculty of Business,

Pharos University in Alexandria, Egypt

Samar J. Al-Barghouthi

Royal University for Women, Bahrain

Deus Ngaruko

*Centre for Economics and Community Economic Development,
the Open University of Tanzania, Tanzania*

Mohammad Ehsani

Tarbiat Modares University,

Israel, Imam Khomeini International University, Iran

Ismail BİLGİÇLİ

Sakarya University Karasu MYO, Turkey

Tack Hyun Shin

*Seoul National University of Science and Technology, Korea,
South*

Sun-Young Nam

*Department of Pharmacology, College of Korean Medicine,
Kyung Hee University, Seoul, Republic of Korea*

Vicent Stanslaus

The Open University of Tanzania, Tanzania

Partha Ray

*Indian Institute of Management Calcutta, Institute of
Management Technology, Ghaziabad, India*

SOCIAL SCIENCES AND HUMANITIES

Charlyna S. Purba, S.H., M.H.

*Universitas Panca Bhakti
Kalimantan BARAt, Indonesia*

Hj. Yenny AS, S.H., M.H.

*Universitas Panca Bhakti
Kalimantan BARAt, Indonesia*

Sailesh Sharma (Ph.D.)

*Deputy Vice-Chancellor (Academic & International)
The University of Malaya, Kuala Lumpur, Malaysia*

Siamak Khodarahimi (Ph.D.)

*Islamic Azad University,
Fars Province, Iran*

Rex Balena (Ph.D.)

*Oceanographer and Education Specialist
University of the Philippines in the Visayas, Philippines*

Dr. A B Sharangi

*HOD, Research Scholar,
Agricultural University, India*

Jayson E. Lannu

Jose Rizal University, Philippines

Amandha Boy Timor Randita

*Faculty of Medicine,
Sebelas Maret University, Indonesia*

Gogoberidze George

Russian State Hydrometeorological University (RSHU), Russia

Krittawaya Thongkoo

Chiang Mai University, Thailand

Tzu-yi Lee

Chung Yuan Christian University, Taiwan

Renan Limjuco (Ph.D.)

*University of the Immaculate Conception
Davao City, Philippines*

Kankan Kasmana

*Departemen Visual Communication Design-Indonesia Computer
University, Indonesia*

Monique Musni- Tagaytay, M.A.Ed

*University of the Immaculate Conception Philippines,
Philippines*

Naidu Narainsamy

*Department of Psychology of Education, University of South Africa
(UNISA), College of Education, South Africa*

Sultanbayeva Gulmira

Al-Farabi Kazakh national University, Kazakhstan

Emilio A. Cruz

*Bulacan State University, Malolos City, Bulacan,
Philippines*

Si, Li

Wuhan University, China

Dr. Nessreen A. Elmelegy

Royal University for Women, Kingdom of Bahrain, Bahrain

Dr. Shusil Kumar Das

Daffodil International University, Dhaka, Bangladesh

Dr. Rovelina B. Jacolbia

Polytechnic University of the Philippines, Philippines

Sathiamoorthy Kannan

Institute of Educational Leadership, University of Malaysia

Dr. Isabella Musyoka-Kamere

Maasai Mara University, Kenyatta University, Kenya

Hadi Ebadi

*Universiti Teknologi Malaysia, Malaysia
Razi University, Iran*

Dr. Shusil Kumar Das

Daffodil International University, Dhaka, Bangladesh

Botabaeva Ademi Erkebaevna

*Eurasian National University named after L.N. Gumilyov,
Kazakhstan*

Girma Y. I. Menelik

*Penza State University Russia, K. Satbaev Kazakh National
Technical University, Kazakhstan*

I-Ju Chen

Ling Tung University, Taiwan

Wen, Yvonne, Ying-Ya

National Formosa University, Taiwan

PHYSICAL LIFE AND APPLIED SCIENCES

Prof. Dr. Ir. Rahmatullah Rizieq, M.Si.

Universitas Panca Bhakti

Kalimantan BARAt, Indonesia

Yan LI (Ph.D.)

Nanyang Technological University, Singapore

Md. Saleh Ahmed (Ph.D.)

Department of Mathematics & Statistics

Sultan Qaboos University, Muscat, Oman

Saon Banerjee (Ph.D.)

OIC, AICRP on Agrometeorology,

State Agricultural University, India

Mohd. Nizam Omar

Universiti Utara Malaysia, Malaysia

Amina Bakhrouf

*Laboratory of Analysis, Treatment, and Valorisation of
Environment Pollutants and Products, Monastir, Tunisia*

Shatrova, Olga

Russian State Hydrometeorological University (RSHU), Russia

ENGINEERING AND TECHNOLOGY STUDIES

Nurul Akmar Binti Emran (Ph.D.)

Faculty of Information Communication Technology

Universiti Teknikal Malaysia Melaka, Malaysia

Chee-Ming Chan (Ph.D.)

*Civil and Environmental Engineering
Universiti Tun Hussein Onn, Malaysia*

Zhaparov Meirambek Kazimovich (Ph.D.)

*Head of Microlearning Research Centre
Suleyman Demirel University, Kazakhstan*

Noor Zaman (Ph.D.)

*College of Computer Science and IT,
King Faisal University, Saudi Arabia*

Kelly Whealan George (Ph.D.)

Embry-Riddle Aeronautical University (ERAU), USA

Prof. Dr. Hj. Dwi Kartini, SE. Spec. Lic (Ph.D.)

*University of Computer Indonesia (UNIKOM)
Bandung, Indonesia*

Valeria Ersilia Oniga (Ph.D.)

*Department of Terrestrial Measurements and Cadastre
Technical University “Gh.Asachi” from Iasi
Romania*

Prof. Dr. Hj. Dwi Kartini, SE. Spec. Lic (Ph.D.)

*University of Computer Indonesia (UNIKOM)
Bandung, Indonesia*

Mira Rahayu

Telkom University Indonesia, Indonesia

Ony Widilestariningtyas

Universitas Komputer Indonesia, Indonesia

Yully Ambarsih Ekawardhani

UNIKOM, Institut Teknologi Bandung, Indonesia

Emel Zeray

Selcuk University Geomatics Department, Turkey

Nedjah

*Preparatory School of Sciences and Technology (EPST Annaba),
Algeria*

Tashenova

L. N. Gumilyov Eurasian National University, Kazakhstan

Farah Jemili

*Department of Computer Sciences, Higher Institute of Computer
and Communication Techniques, Sousse University, Tunisia*

Nahid Sanzida

*Bangladesh University of Engineering and Technology (BUET),
Bangladesh*

HEALTH AND MEDICINE STUDIES

Balachandar S. Sayapathi (Ph.D.)

Faculty of Medicine, University of Malaya, Malaysia

Ahmed Kaid Naji Allow (Ph.D.)

*Head of Dept. of Human Physiology
College of Medicine and Health Sciences
Sana'a University, R. Yemen*

Prof. Dr. drg. Andi Zulkifli, M. Kes

*Faculty of Public Health Hasanuddin University,
Makassar, Indonesia*

Fauzie Rahman

*Head of Health Policy Management Department at the School of
Public Health, Faculty of Medicine, Lambung Mangkurat
University, Indonesia*

Helia Rahbari

*Faculty of Paramedical Sciences at Shahid Beheshti University of
Medical Sciences, Iran*

Dr. Narjis Rizvi

Aga Khan University, stadium road, Karachi, Pakistan

Dr. Elvira Urgel (Ph.D.)

Centro Escolar University, China

Maria Bea Lao

Medical Technology/Medical Laboratory Science University of the Immaculate Conception Philippine, Philippines

Nima Kasraie

Children's Mercy Hospital United States, US

Haseen Fariha

Bangabandhu Sheikh Mujib Medical University, Bangladesh

Der-Hsiang Huang

Graduate Institute of Professional Development in Education, Da-Yeh University, Taiwan

Kazushi Okamoto

Aichi Prefectural University, Japan

Abolhassani Shahla

Shahrekord University of Medical Sciences, Shahrekord, Iran

Dr. Umme Kulsum Rima

*Hajee Mohammad Danesh Science & Technology University
Dinajpur, Bangladesh*

Mohammad A. H. Khan

*Faculty of Veterinary Science, Bangladesh Agricultural University,
Bangladesh*

Enayatollah Kalantar

*Department of Microbiology and Immunology, School of Medicine,
Alborz University of Medical Sciences, Karaj, Iran*

Cahit Canbay

Yeditepe University, Turkey

Rahbari, Helia

*Faculty of Paramedical Sciences at Shahid Beheshti University of
Medical Sciences, Tehran, Iran*

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Cheng-Chi Chang

*Graduated Institute of Oral Biology, National Taiwan University,
Taipei, Taiwan*

Bodin Oleg N

Ling Tung University, Taiwan

Zahra Godarzi

Tehran University of Medical Sciences, Iran

Zhou Rui-Hua

*School of Public Health, North China University Of Science And
Technology, China*

KEYNOTE SPEAKER

Professor Kimberly Gomez



Kimberley Gomez', Professor of Education and Information Studies, centers her work in examining teachers' and students' development and use of literate practices in formal and informal contexts. She employs the design and study of literate practices to enhance learning in mathematics, science, and technology use with the aim of informing theoretical and practical understandings. She views context as the primary lens in understanding the development of experiences and outcomes associated with learning. A corollary of this commitment is that she designs educational interventions and professional development opportunities in a collaborative and participatory manner working side-by-side with frontline practitioners across disciplinary and organizational contexts including teachers, health professionals, psychologists, computational designers, and engineers. Gomez received the Ph.D. from the University of Chicago in 1994. She served as a post-doctoral fellow and a research associate in the Center for Learning Technologies in Urban Schools (LeTUS) NSF-funded study at Northwestern, in Northwestern University's Learning Sciences program. Gomez is currently a tenured Professor of Education at the University of California, Los Angeles (UCLA). She is jointly appointed in the Information Studies department at UCLA. Since 2011, Gomez has been the lead language and literacy fellow at the Carnegie Foundation for the Advancement of Teaching.

In 2018, she received the Bobbie and Mark Greenfield Faculty Award for Applied Research in Learning and Achievement from the UCLA Graduate School of Education and Information Studies, and in 2017, she received the Distinguished Teaching Award from UCLA’s Graduate School of Education.

She is an Osher Fellowship recipient (awarded by the Exploratorium, San Francisco, CA). She is a Sudikoff Family Institute for Education & New Media fellow (2013-14) and received the Harold A. and Lois Haytin Faculty Award, from Graduate School of Education & Information Studies, UCLA for her collaborative work with teacher practitioners. She is the author of over 50 refereed journal articles, book chapters, and conference proceeding articles.

GIMAR 2019 Tracks’ Chairs

Business, Management, and Economics Studies

Hanadi Behairi & Youngmi Yoo

Social Sciences & Humanities

Kimberley Gomez & Harri Jalonen

Engineering & Technology Studies

Farooq Ahmed Jam & Shun-Chuan Chang

Abdulrahman Hashem

GIMAR 2019 Workshop

“How to Improve the Quality of A Research Article and Get It Published in Scopus/ISI-Indexed Journals.”

Trainer: Dr. Farooq Ahmed Jam (Ph.D.)

In this workshop, we will discuss how to improve the quality of a research article and to get it published in good quality journals. Publication is considered as a KPI achievement for academic staff. It is considered to be the best way to enjoy benefits and promotion as a faculty member. In this workshop, trainer will shed light on how to identify a hot research topic, how to find a research gap, importance of a catchy Research Paper Title, what reviewers are looking for in a research article, what editors are expecting from authors, major reasons for article rejection by good journals, steps and tips to improve article quality and content, and finding a relevant outlet for your research. I hope this workshop will help the participants improve their understanding of the publication process.

Best Paper Nominee List

Liquidity, Leverage, and Cash Holding: Evidence from Indonesia Listed Real Estate Firms

Zunairoh^{1}, Fatkhurrohman²*

¹ Airlangga University, Indonesia

² Gadjah Mada University, Indonesia

Basic Elements of Project Management on the Example of Lean Manufacturing Student Research Group Activities Carried Out at the AGH University of Science and Technology in Cracow

Katarzyna Styk^{1}, Klaudia Drobek²*

AGH University of Science and Technology, Poland

Immoral Behaviors in Online Games: Effects of Moral Positioning, Game Motivation, Aggression, and Self-Esteem on Flaming and Trolling in League of Legends

Sungje Lee¹, Jeonyoung Kong², Meiying Piao³, Euijun Jeong^{4}*

^{1,2,3,4} Konkuk University, Seoul, South Korea

Optical Recognition of Music Symbols of a NSBSN Structure

Ku Chin Lin^{1}, María José Rodezno Ayestas²*

^{1,2} Kun Shan University, Taiwan

GIMAR 2019 Best Paper Award Winner

Liquidity, Leverage, and Cash Holding: Evidence from Indonesia Listed Real Estate Firms

Zunairoh^{1}, Fatkhurrohman²*

¹ Airlangga University, Indonesia

² Gadjah Mada University, Indonesia

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Tariq Iqbal Khan (Ph.D.)

Assistant Professor

University Of Haripur, Pakistan

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Director Policy & Research (Global Illuminators)

Editor

Dr. Ahmad Saddam (Ph.D.)

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CONFERENCE PROGRAM

DAY 01 Tuesday (February 26, 2019)

Welcome Reception & Registration

8:00 am – 8:30 am

Opening Ceremony (08:30 am –09:25 am)

Venue: Room 1

08:30 am – 08: 40 am	Welcome Remarks – Mr Metha	Conference Coordinator Global illuminators
08:40 am – 08:55 am	Opening Speech – Dr. Farooq Ahmad Jam (Ph.D.)	Conference Chair- GIMAR-2019 Executive Director, Global Illuminators
08:55 am – 09: 05 am	Keynote Speech- Prof. Kimberly Gomez	Professor of Education and Information Studies, University of California, Los Angeles, USA
09:05 am - 09: 25am	Group Photo & Award Ceremony	

Grand Networking Session and Tea Break (09:25 am – 09:45 am)

DAY 01 Tuesday (February 26, 2019)

Session 1 (09:45 am – 01:00 pm)

Venue: Room 1

Session Chairs: Kimberley Gomez & Harri Jalonen

Track: Social Sciences and Humanities

GIMAR-19-134	Arabic Multidisciplinary Academic Research, Efforts and Obstacles- DSR_UQU as a Model	Hanadi Behairi
ASMBSR-19-123	Corporate Financial Performance Effect on Stock Prices Empirical Evidence From a Small Market: A Study in Amman Stock Exchange Over the Period 2006 – 2017	Abdulrahman Hashem
ASMBSR-19-125	Moderating Effects of Social Support and Social Participation in the Relationship Between Depression and Quality of Life of Elderly Victims from Disaster	Saebom Kim Hyemin Kwon Youngji Song
ASMBSR-19-126	Exclusion’s Measurement of Different Social Groups: Methodological Preliminary Work and Empirical Results	Puzanova Zh.V
ASMBSR-19-127	A Study on the Improvement of Disaster Safety Education for Children and Teenagers: A Comparative Study on Korea, the United States, and Japan	Boreum Kim Youngmi Yoo Eunhee Kim

Lunch Break (1:00 pm – 2:00 pm)

DAY 01 Tuesday (February 26, 2019)

Session 1 (09:45 am – 01:00 pm)

Venue: Room 1

Session Chairs: Kimberley Gomez & Harri Jalonen

Track: Social Sciences and Humanities

GIMAR-19-147	The Effect on the Improvement of Vocational High School Students’ Abilities on Popular Science Reading and Thinking by M-Learning	Liu, Yuan, Chen
ASMBSR-19-129	Continuous Improvement Education. Adaptation of Kaizen Philosophy on the Example of the Student Project AGH Lean Line	Magdalena Kołodziejczak
ASMBSR-19-133	The Effect of Satisfaction of Disaster Relief Service on Quality of Life	Lee Yong ho Kim Hyun-sung Ahn Jun-hyeog.
GIMAR-19-146	A Study of Augmented Reality on National Defense Education Curriculum for Senior Middle School Students	Huang, Tzu, Hua
ASMBSR-19-137	Studying Social Representations on Groups of Minorities (Evidence from LGBT)	Tatiana Larina
GIMAR-19-112	Liquidity, Leverage, and Cash Holding: Evidence From Indonesia Listed Real Estate Firms	Zunairoh

Lunch Break (1:00 pm – 2:00 pm)

DAY 01 Tuesday (February 26, 2019)

Session 1 (09:45 am – 01:00 pm)

Venue: Room 2

Session Chairs: Hanadi Behairi & Youngmi Yoo

Track: Business, Management, Economic Studies Social Sciences and Humanities

GIMAR-19-105	You Get What You Ask For? Encountering Complexity and Per formative Leadership on Social Media	Harri Jalonen
GIMAR-19-107	Consumer Evaluation and Consumption of Shanzhai Brands: Attributing Featured and Perceived Similarity	Shun-Chuan Chang
GIMAR-19-109	Meeting in the Middle: The Challenge and Promise of Supporting Stem Learning Through Language and Literacy Infusions	Kimberley Gomez
ASMBSR-19-134	Basic Elements of Project Management on the Example of Lean Manufacturing Student Research Group Activities Carried out at the AGH University of Science and Technology in Cracow	Katarzyna Styk

Lunch Break (1:00 pm – 2:00 pm)

DAY 01 Tuesday (February 26, 2019)

Session 1 (09:45 am – 01:00 pm)

Venue: Room 2

Session Chairs: Hanadi Behairi & Youngmi Yoo

Business, Management, Economic Studies Social Sciences and Humanities

ASMBSR-19-128	Null Object Phenomena in English	Hyemi Park Jihyeon Ha Hyangmi Lee
ASMBSR-19-136	Immoral Behaviors in Online Games: Effects of Moral Positioning, Game Motivation, Aggression, and Self-Esteem on Flaming and Trolling in <League of Legends>	Jeon Young Kong, Meiying Piao Sungje Lee
ASMBSR-19-139	A Study on Service Quality of Duty Free Shop, Positive Affect and Impulse Buying: Focused on Chinese Tourists	Jeong Daeyoung Cho Minh

Lunch Break (1:00 pm – 2:00 pm)

DAY 01 Tuesday (February 26, 2019)

Workshop Session (2:00pm – 3:30 pm)

Venue: Room 1

“How to Improve the Quality of Research Article and get published in Scopus/ISI Indexed Journals”

Trainer	Dr. Frooq Ahmad Jam (Ph.D.)
Participants	All Participants

In this workshop, we will discuss how to improve the quality of research article and getting published in good quality journals. Publication is considered as a KPI achievement for academic staff. It is considered to be the best way to enjoy benefits and promotion as a faculty member. In this workshop trainer will shed light on how to identify a hot research topic, How to find a research gap, Importance of a catchy Research Paper Title, What Reviewers are looking in research article, What editors are expecting from authors, Major Reasons of article rejection in good journals, Steps and tips to improve article quality and content and Finding a relevant outlet for your research. Hope this workshop will help the participants improve their understanding about publication process.

Tea Break (3:30 pm – 3:45 pm)

DAY 01 Tuesday (February 26, 2019)

Session 2 (3:45 pm – 04: 45pm)

Venue: Room 1

Session Chairs: Farooq Ahmed Jam & Shun-Chuan Chang

Track: Engineering and Technology Studies

GIMAR-19-114	Effect of Fiber Volume Fraction to Tensile Strength in Composites Polyester Reinforced Sugar Palm Fiber (SPF)	Fatkhurrohman
GIMAR-19-119	An Animal Ladder Training Platform Based on Infrared Range Finder for Rehabilitation of Brain Stroke	Chi-Chun Chen
ASMBSR-19-130	AGH Leanline Simulation Game as a Method for Lean Manufacturing Training	Krzysztof Grzesik Jakub Liszcz
EASIT-19-101	Optical Recognition of Music Symbols of a NSBSN Structure	Ku Chin Lin
EASIT-19-102	Effect of Relative Direction and Distance of A Brush-Anode to a Cathode on Performance and Electrochemistry of a Brush-Anode and a Microbial Fuel Cell (MFC)	Bonyoung Koo

Closing Ceremony (4:45 pm – 5:15 pm)

DAY 01 Tuesday (February 26, 2019)

Session 2 (03:45 pm – 04: 45pm)

Venue: Room 2

Session Chairs: Abdulrahman Hashem & Sansoen Sattavorn

Track: Engineering and Technology Studies

EASIT-19-103	Effects of Wire-Type and Mesh-Type Current Collectors in a Carbon-Felt Anode on Performance and Electrochemistry in a Microbial Fuel Cell	Hyungwon Chai
EASIT-19-104	Improved Current Collector Structure Enhances Power Generation of a Microbial Fuel Cell (MFC) by Decreasing Cathodic Charge Transfer Impedance	Junhyuk Kim
EASIT-19-105	Effects of Different Structures and Materials of an Anode on Performance, Polarization Behaviours And Impedance in a Microbial Fuel Cell (MFC)	Sunghoon Son
EASIT-19-106	Influence of the Flowrates of Reverse Electro-Dialysis (RED) Stack on Power Generation, Polarization Behavior and Internal Impedance Distribution of Microbial Reverse-Electro dialysis Cell (MRC)	Tran Viet Hoa huong

Closing Ceremony (4:45 pm – 5:15 pm)

LIST OF CONFERENCE ATTENDEES

The following scholars/practitioners/educationists don’t have any paper presentations; however they will be attending the conference as delegates and observers.

ID	Name	Affiliation	Country
ASMBSR-19-119	Isaac Okyere Paintsil	Jiangsu University	China
GIMAR-19-149	Mr.Dikgwejane Itumeleng Glad	EFC University Tunisia	Tunisia
GIMAR-19-150	George Schaaff	Kwansei Gakuin University	Japan

DAY 02 Wednesday, (February 27, 2019)

“CITY TOUR”

Gathering of Participants at the Lobby of Hotel Mystays Ochanomizu
Conference Center Tokyo, Japan at 12:00 pm Departure: 12:30 pm for City
Tour

Hotel Mystays Ochanomizu Conference Center Tokyo, Japan at 6:00 pm

Important Note: This tour is organized by Global Illuminators and entry to this tour is free for all participants. You may also bring your Siblings/Family/Friends but you have to register for them on registration desk on day 1 of conference.



TRACK A: BUSINESS MANAGEMENT & ECONOMIC STUDIES



You Get What You Ask For? Encountering Complexity and Performative Leadership on Social Media

Harri Jalonen*

Turku University of Applied Sciences, Turku, Finland

Abstract

Books on leadership are springing up like mushrooms after the rain. This is a natural development, as leadership is a phenomenon that is impossible to explain with a universal theory. Leadership is the art of the possible, in which success is dependent on acknowledging, understanding and utilising several situational factors. The present study relies on research literature with a focus on complexity theory and performative leadership. This approach is selected because social media has altered the operational environment of organizations in a way that forces us also partially to reinterpret leadership. Social media is not merely a communication channel, but a rationally and affectively charged forum of meaning provision and framework creation. Social media has changed the context of leadership, especially by increasing transparency within organizations, as well as between the organizations and their operational environment. Leadership is a form of performative interaction, in which meanings are focusing on the past, present and future are created, maintained and adapted. On social media, the private has become public in a way that challenges the leadership practices of organizations. On the other hand, social media has provided leaders who are talented communicators with new means of encountering people. Based on complexity thinking, the present study builds a new understanding of performative leadership on social media. The theoretical section sheds light on social media as a meaning-provision and framework-creation forum. Furthermore, an interpretation is constructed of the challenges and opportunities of leadership on social media that is based on complexity thinking and the performative trend in leadership research. The concluding section discusses the added value that complexity thinking and the performative leadership perspective bring to the implementation of leadership on social media.

Keywords: Encountering, Performative Leadership, Social Media

*All correspondence related to this article should be directed to Harri Jalonen, Turku University of Applied Sciences, Turku, Finland,
Email: harri.jalonen@turkuamk.fi



Consumer Evaluation and Consumption of Shanzhai Brands: Attributing Featured and Perceived Similarity

Shun-Chuan Chang*

Holistic Education Center, Mackay Medical College, New Taipei City,
Taiwan

Abstract

This paper provides a new perspective for investigating consumer evaluation of similar products that are related to Kotler's Product Level Model and Tversky's Feature Matching. The models and empirical evidence acknowledge the likelihood of the simultaneous occurrence of different evaluation levels. The analyses indicate that consumer evaluation is related to both outlooks or featured similarity and perceived insight. Consumers can detect featured similarity more easily, which may or may not cause consumer preference to decline in different product categories; on the other hand, perceived similarity greatly influences consumer preference. The interaction between the two similarities and the number of product-related experiences accumulated by the consumers provide informative marketing implications, especially for online consumer evaluations of copycat brands under Chinese Shanzhai cultural contexts. This paper implemented a 2×2 experiment that used featured/perceived similarity as the within-subject factor and perceived similarity as the between-subject factor. In addition, a one-way multivariate analysis of variance (MANOVA) and its profile analysis were conducted. With each product category (i.e., tissue and ketchup), two dependent variables (i.e., online consumer preference and consideration) were analyzed. Data collection, through the web-based survey using Chinese characters, obtained valid data from 541 Chinese participants. Copycats take unfair advantage of national brand trademarks and brand images. The present paper demonstrated that the assessment of copycats, in addition to the degree of a brand's featured similarity, significantly depended on perceived similarity. For the tissue category, consumer preference and consideration set among the high perceived similarity group decreased as the featured similarity increased.

Keywords: Copycat, Experience, Shanzhai, Similarity, Preference

*All correspondence related to this article should be directed to Shun-Chuan Chang, Holistic Education Center, Mackay Medical College, New Taipei City, Taiwan
Email: zhang@mmc.edu.tw



Liquidity, Leverage, and Cash Holding: Evidence from Indonesia Listed Real Estate Firms

Zunairoh^{1*}, Fatkhurrohman²

¹ Airlangga University, Indonesia

² Gadjah Mada University, Indonesia

Abstract

The cash holding policy by each company depends on conditions that reflect the company and its underlying motives. This study aims to examine the effect of liquidity and leverage with variable control dividend payment and company size on cash holding in property & real estate companies in Indonesia during the period 2012-2016. The research method used is multiple linear regression analysis. Based on the results of the analysis it can be concluded that the variables liquidity, leverage, and dividend payment have a positive effect on cash holding, while the firm size has a negative effect on cash holding.

Keywords: Cash Holding, Liquidity, Leverage, Dividend Payment, Firm Size

*All correspondence related to this article should be directed to Zunairoh, Airlangga University, Indonesia
Email: zunairoh9@gmail.com



Basic Elements of Project Management on the Example of Lean Manufacturing Student Research Group Activities Carried out at the AGH University of Science and Technology in Cracow

Katarzyna Styk^{1*}, Klaudia Drobek²

^{1,2} AGH University of Science and Technology, Poland

Abstract

The aim of this work is to trace and present simplified project management on the example of a student project. The paper contains a short definition of the project and the growing popularity of project management. Then, a student project of AGH Lean Line, consisting of the construction of a construction project in the field of management and production engineering and promotional activities through conference trips, was presented. Next, the project management method developed in the Student Research Group AGH University of Science and Technology was presented. In the end, individual stages of the project work on "AGH Lean Line"; were presented.

Keywords: Management, Project, Lean Manufacturing, Line, Production

*All correspondence related to this article should be directed to Katarzyna Styk, AGH University of Science and Technology, Poland
Email: styk@agh.edu.pl



A Study on Service Quality of Duty-Free Shop, Positive Effect, and Impulse Buying: Focused on Chinese Tourists

Oh HyunJeong¹, Jeong DaeYoung^{2*}, Cho Minho³

^{1,2,3} Hanyang University, Seoul, Republic of Korea

Abstract

The purpose of this study is (1) to analyze the effect of service quality to positive effect, (2) the effect of service quality to impulse buying, (3) the effect of positive effect to impulse buying, (4) type of travel partner, time pressure and price sales will have an effect on controlling the relationship between positive affect and impulse buying. The researcher constituted the conceptual model and will use the regression analysis and structural equation modeling to test the hypotheses. In total, 300 Chinese tourists, Who are visiting South Korea, will survey the questionnaire in this study. The expected result of the study as follows. (1) Service quality will effect on positive affect, (1-1) tangibles of service quality will have a positive effect on positive affect, (1-2) reliability of service quality will have a positive effect on positive affect, (1-3) responsiveness of service quality will have a positive effect on positive affect, (1-4) assurance of service quality will have a positive effect on positive affect, and (1-5) empathy of service quality will have a positive effect on positive effect. (2) Service quality will effect on impulse buying, (2-1) tangibles of service quality will have a positive effect on impulse buying, (2-2) reliability of service quality will have a positive effect on impulse buying, (2-3) responsiveness of service quality will have a positive effect on impulse buying, (2-4) assurance of service quality will have a positive effect on impulse buying, and (2-5) empathy of service quality will have a positive effect on impulse buying. (3) The positive affect will have a positive effect on impulse buying. (4) Type of travel partner, time pressure and price sales will have an effect on controlling the relationship between positive affect and impulse buying.

Keywords: Service Quality, Positive Effect, Impulse Buying

*All correspondence related to this article should be directed to Jeong Daeyoung, Hanyang University, Seoul, Republic of Korea
Email: lxdream@naver.com



TRACK B: SOCIAL SCIENCES & HUMANITIES



Meeting In The Middle: The Challenge and Promise of Supporting Stem Learning through Language and Literacy Infusion

Kimberley Gomez*

University of California, Los Angeles, United States of America

Abstract

Around the world, disparities exist in the STEM K-12 performance between dominant and minority populations. In this manuscript, I describe two recent research and intervention efforts, at the nexus of mathematics and literacy, and science and literacy, that aimed to provide instructors and students with strategic tools and routines to provide access to science and mathematics content. Both efforts aimed to build equitable access to high-quality learning experiences by helping teachers create learning experiences that connect STEM learning to real life formal and informal contextual experiences and real-life approaches to making sense of mathematics and science content. The first study, in a credit recovery summer program, sought to address biology teachers' traditional approach to teaching science content. We began by working collaboratively with 3 inner-city high school Biology teachers to reflect on and revise their classroom lectures and classroom teaching approach. We co-designed, with the teachers, language forward approaches to teaching, including what would be typically seen in a TedTalk or professional meeting discussion, i.e., attention to time for reflection, questions, and discussion. We developed routines and formative assessments drawing on students every day and classroom knowledge. Summative outcome results showed that 90% of the students successfully passed the course. The second study, in 8 community college developmental mathematics classrooms, across 4 U.S. states, predominated by non-English background learners, aimed to build mathematics learning through teaching mathematics using real-life scenarios. Outcome measures showed gains in instructor use of language infused real-life scenarios to teach mathematics.

Keywords: Science, Mathematics, Technology, Language, Literacy

*All correspondence related to this article should be directed to Kimberley Gomez, University of California, Los Angeles, United States of America
Email: kpg1321@gmail.com, Kingomez@ucla.edu



Arabic Multidisciplinary Academic Research, Efforts and Obstacles: DSR_UQU as a Model

Hanadi Behairi*

UMM -Al-Qura university – Makkah, Saudi Arabia

Abstract

At the time of acquiring Arabic and Islamic knowledge, most scholars focus on multidisciplinary research areas. Some of them compose the books in order to prove the usefulness of this kind of research writing and others entitled to be multidisciplinary scientists such as Al-Jurjani, Al-Suyuty, and Al-Qairwani. Over the years, the scope of writing academic research has changed. The emergence of specialization and the value of single and deep discipline have affected the movement of multidiscipline effectiveness. Underlining the importance of single discipline in academic evaluation is understanding the concept of multidisciplinary research to determine the writer's ability and knowledge. The rules in most Arabic academic institutions did not encourage writing a research paper of this kind because it could not account in academic degree evaluation. Nowadays, however, deanships of scientific research in Saudi universities encourage researchers to obtain a grant that reflects multidiscipline. Moreover, centers research try to outline these cross of multidiscipline which match the national vision and requirements. This paper will present the efforts of deanship of scientific research at Umm Al-Qura University in Saudi Arabia to draw attention to the value of this kind of conception in accepting the grant proposal and the quality of research that is required. The paper will underline the obstacles that were faced by the researcher and offer some institutional solutions to be resolved.

Keywords: Research, Efforts, Obstacles, Knowledge

*All correspondence related to this article should be directed to Hanadi Behairi, UMM -Al-Qura university – Makkah, Saudi Arabia
Email: hmbhairi@gmail.com



Corporate Financial Performance Effect on Stock Prices; Empirical Evidence from a Small Market: A Study in the Amman Stock Exchange over the Period 2006 – 2017

Abdulrahman Hashem^{1*}, Saleh Zurqan²
^{1,2} Isra University, Amman, Jordan

Abstract

This paper aims to study the effect of corporate financial performance on investors' decisions and consequently the relevant stock prices. The Jordanian banks enlisted in the Amman Stock Exchange were studied over the period 2006 – 2017, as their average annual prices were linked in a multiple regression equation to the following independent variables (financial ratios), which are: Total Assets, Return on Equity, Return on Assets, Price-Earnings ratio, Price-to-Book ratio, Dividend per Share ratio and Debt ratio. Multiple regression analysis was used by SPSS to test the equation and showed that there are significant positive relationships between the average annual stock prices and both the Price-to-Book ratio and Dividend per Share ratio, while indicated a negative relationship with Debt ratio. The rest of the independent variables were insignificant to annual average stock prices. This study provides proof that local investors in Amman Stock Exchange are prone to ignore many general financial indicators in their investment decisions and stocks demand. The common questions in Amman Stock Exchange clearly revolve around the yearly distributed dividends and firms' debt sizes. This is possibly caused by cognitive behavioral biases or limited understanding of proper stock valuation followed by local investors, who seem to care less about any performance or profitability financial ratios that were studied in this research. The irrelevance of many financial indicators may be caused by the normality of investors rather than the expected rational investment decisions. Investors' interest in certain indicators proves the common selectivity trend in stocks demands in the Amman Stock Exchange.

Keywords: Financial Performance, Stock Prices, Investment Decision, Fundamental Analysis, Behavioral Finance

*All correspondence related to this article should be directed to Abdulrahman Hashem, Isra University, Amman, Jordan
Email: Ahashem@iu.edu.jo



Moderating Effects of Social Support and Social Participation on the Relationship between Depression and Quality of Life of Elderly Victims from Disaster

Saebom Kim¹, Hyemin Kwon^{2*}, Youngji Song³, Songsik Choi⁴
^{1,2,3,4} Pusan National University, Korea

Abstract

The purpose of this study is to derive social welfare implications to secure the Quality Of Life (QOL) of elderly victims from disaster, and by analyzing the effects caused by depression to QOL of elderly victims and the moderating effects of social support and social participation. For this study, researchers conducted a hierarchical multiple regression analysis from 666 elderly people age from 65 years and over, by using Tracking Panel of Life Change in Disaster Victims from the third year's surveys (2017) established by the National Disaster Management Research Institute (NDMI) in the Republic of Korea and this study used SPSS 21.0 for the analysis. The results of the analysis are as followed. First, depression from elderly victims had significant effects on the QOL at old age. Second, social support has moderating effects on the QOL of elderly victims' depressions. In other words, it was confirmed that when the level of social support was high, the effects of depression for the QOL is mitigated compared to the elderly victims who were not supported. Third, social participation did not show significant moderating effects on depression and QOL. However, social participation has significant effects on the QOL at their old age. The results of this study shows the necessities of providing continuous psychological support services which influences the characteristics of the elderly victims from disaster and finding ways to form a social support system as a way to reduce the depression rate among elderly victims.

Keywords: Elderly Victims From Disaster, Depression, Quality Of Life, Social Support, Social Participation

*All correspondence related to this article should be directed to Hyemin Kwon, Pusan National University, Korea
Email: samahui@nate.com



Exclusion's Measurement of Different Social Groups: Methodological Preliminary Work and Empirical Results

Narbut N.P.^{1*}, Puzanova Zh.V.², Larina T.I.³, Tertyshnikova
A.G.⁴

^{1,2,3,4} Peoples' Friendship University of Russia (RUDN University),
Moscow, Russian Federation

Abstract

Today social exclusion is the process of displacement of a person to the periphery of public life and deprivation to participate in life as a result of poverty, lack of basic competences or discrimination. Traditionally representatives of the LGBT community, people with HIA, extremists, former prisoners, people with mental illnesses, migrants are considered to be a subject to exclusion. However, social exclusion is a difficult phenomenon to measure and interpret. This article attempts an empirical study and measurement of the exclusion's degree by using a questionnaire survey in relation to above-mentioned groups based on three components of exclusion - moral, economic and political. As a result, we describe a proprietary methodology of social exclusion measuring and present the results of the Russian students' social image about the exclusion of each of the studied groups from social life. According to the results, former prisoners are the most excluded group, and elderly people the less excluded group. At the same time, there are several features of the manifestations of exclusion for each group, which are also described in the article.

Keywords: Social Exclusion, Moral Exclusion, Economic Exclusion, Political Exclusion, LGBT Community, Extremists, People With HIA

*All correspondence related to this article should be directed to Narbut N.P., Peoples' Friendship University of Russia (RUDN University), Moscow, Russian Federation
Email: Larina-ti@rudn.ru



A Study on the Improvement of Disaster Safety Education for Children and Teenagers: A Comparative Study on Korea, the United States, and Japan

Boreum Kim^{1*}, Youngmi Yoo², Eunhee Kim³

^{1,2,3} Pusan National University, South Korea

Abstract

Advanced disaster prevention and response systems are required as the natural and social disasters are increasingly combined and diversified recently. And Disaster safety education, especially for children and teenagers through schools and government agencies, is urgently needed because they belong to the vulnerable classes, which can be relatively more easily exposed to disasters. Therefore, this paper examined the disaster safety education system of the U.S. and Japan, which have experienced various disasters first in order to draw measures to improve the disaster education system in Korea. To this end, this research analyzed the legal provisions and school education system related to disaster preparedness. Then it introduced the education programs provided by schools. The implications of the study are as follows: First, disaster education should be incorporated into regular education through legislation. Second, education should shift from the theoretical-oriented education system to experience-oriented education in order to enhance its effectiveness. It requires various educational facilities and infrastructure for the experiences. Third, it is necessary to train disaster experts who provide education services. And disaster analysis studies should also be conducted for the training.

Keywords: Disaster Disaster Safety Education System, School Safety Education, Disaster-Vulnerable Groups, Disaster Management Capability

*All correspondence related to this article should be directed to Boreum Kim, Pusan National University, South Korea
Email: dianakim15@naver.com



Null Object Phenomena in English

Hyemi Park^{1*}, Jihyeon Ha², Hyangmi Lee³
^{1,2,3} Pusan National University, Korea

Abstract

The purpose of this paper is to investigate the linguistic factors for null object phenomena in English and the frequency of use of null object vs. realized object in COCA corpus depending on the definiteness of the objects. In this paper, we classify the objects to talk about the factors for null objects in the following way: an indefinite object, a definite object, an object with its complement and a reflexive pronoun object. It is claimed that the deletion of an indefinite object is usually not context-dependent since it is predictable and stereotypical, while that of a definite object is context-dependent since the readers are expected to recover the definite objects for themselves if they want to understand the sentences. It is also argued that the verbs in the category of definite or indefinite objects have different frequency of use for null objects in the COCA corpus. The verbs which show the most frequent null objects are 'sing'(71%) and 'fail'(76%) in indefinite and definite object classes, respectively.

Keywords: Null Objective, linguistic factors, Frequency

*All correspondence related to this article should be directed to Hyemi Park, Pusan National University, Korea
Email: jihyeon.ha612@gmail.com



Continuous Improvement of Education. Adaptation of Kaizen Philosophy on the Example of the Student Project Agh Leanline

**Magdalena Kolodziejczak^{1*}, Joanna Szarska², Aleksandra
Edelmulle³**

^{1,2,3} AGH University of Science and Technology, Poland

Abstract

. Kaizen is the Japanese word for good change, improvement, improvement. It has become a Japanese philosophy that has spread its ideas all over the world. Its aim is to eliminate losses in the value stream with the use of Lean Management methodology tools. It is a way to reduce costs, but also to achieve product quality and work safety. Kaizen is a daily activity involving all members of the organization, which takes into account the processes and their efficiency. In order to be able to improve, it is necessary to be able to see and identify the waste burdened with all kinds of actions. The best way to learn about these losses and to learn how to find and eliminate them is through practical workshops - a combination of the theory that can be put into practice right away. Students Research Group Management' runs a project which assumes optimization of production and logistic processes on the basis of identification of waste and implementation of Lean Manufacturing tools. The production line made of Lego blocks - AGH LeanLine is an original undertaking of students of the AGH University of Science and Technology, adapted to practice and experience Lean methods, tools, and principles in the university environment. Each production process simulation is a Kaizen Workshop, during which the losses occurring in the basic model are defined and then eliminated from the value stream with the help of known methods of process organization. Such training is an active passage through the PDCA cycle, taking up and testing all the activities included in each stage. Thanks to such projects, students experience the practical application of theory and are ready to take such actions on a living organism - a production company.

Keywords: Lean Management, Kaizen, Student project, Education, Optimization

*All correspondence related to this article should be directed to Magdalena Kolodziejczak, AGH University of Science and Technology, Poland
Email: mkolodziejczakmagda@gmail.com



The Effect of Satisfaction of Disaster Relief Service on Quality of Life

Lee Yong-Ho^{1*}, Kim Hyun-Sung², Ahn Jun-Hyeog³
^{1,2,3} Pusan National University, Korea

Abstract

The issue of 'disaster' is one of the biggest issues in Korea recently. A disaster with a strong uncertain character not only has a strong impact on the lives of the victims, but it also damages the lives of a third party as an indirect victim of the disaster. Therefore, disaster relief services offered in the event of a disaster can greatly affect the quality of people's lives after the disaster. Therefore, this study aims to find out how the satisfaction level of disaster relief services provided by disaster relief workers affects the quality of life by using '2017 Panel Survey Data for Disaster Victims' provided by the Korea Institute for Disaster and Safety and finding out more specifically how the patterns vary depending on local and personal characteristics. Research results, which are subdivided according to regional and individual characteristics, are expected to be able to be tackled at a sophisticated level in preparing policies for each region.

Keywords: Satisfaction, Relief Service, Quality of life

*All correspondence related to this article should be directed to Lee Yong-Ho, Pusan National University, Korea
Email: ddldydzh1@naver.com



Immoral Behaviors in Online Games: Effects of Moral Positioning, Game Motivation, Aggression, and Self-Esteem on Flaming and Trolling in League of Legends

Sungje Lee¹, Jeonyoung Kong², Meiying Piao³, Euijun Jeong^{4*}
^{1,2,3,4} Konkuk University, Seoul, South Korea

Abstract

Immoral behaviors, such as “flaming” (i.e., verbal hostility) and “trolling” (i.e., anti-user behavior), are frequently demonstrated in multi-player online games. Regarding them as one of the serious problems in gaming, game companies have developed various systems to restrict such behaviors. However, scarce research has empirically explored the antecedents to immoral behaviors. With 343 participating game players of <League of Legends>, this study analyzed the effects of moral positioning, game motivations, and personal traits (i.e., self-esteem and aggression) on flaming and trolling. Results showed that moral game positioning (i.e., preference for evil characters) increased the degree of immoral behaviors. Furthermore, “advancement (of competitive game skill)” motivation and aggression exhibited positive effects on behaviors, while “fun/interest” motivation had a negative effect. Notably, moral positioning had interactive effects with aggression and with advancement motivation.

Keywords: Flaming, Trolling, Game motivation, Aggression, Self-esteem

*All correspondence related to this article should be directed to Eui Jun Jeong, Konkuk University, Seoul, South Korea
Email: rmflsdpfvm@naver.com



Studying Social Representations on Groups of Minorities (Evidence from LGBT)

Narbut N.P.^{1*}, Puzanova Zh.V.², Larina T.I.³, Tertyshnikova A.G.⁴

^{1,2,3,4} Peoples` Friendship University of Russia (RUDN University),
Moscow, Russian Federation

Abstract

In the modern world, sensitive theme is increasingly concerned with the attitude to certain social groups, usually minorities. In this case, classical surveys are no longer sufficient and require the addition of "soft" techniques. The article presents the results of a methodical experiment in using a combination of projective methods, the method of unfinished sentences and the collage method for studying attitudes towards a sensitive topic for Russian residents - representatives of the LGBT community. The procedure and technique for implementing the experiment were described in detail. Respondents with polar points of view on the LGBT phenomenon helped us to save the validity of the data. As a result, this technique can be adapted for the study of social representations about any other minority group.

Keywords: Projective Methods, Sensitive Topic, LGBT Community, Collage, Social Representations, Sociological Methods

*All correspondence related to this article should be directed to Narbut N.P., Peoples` Friendship University of Russia (RUDN University), Moscow, Russian Federation
Email: Larina-ti@rudn.ru



A Study of Augmented Reality on National Defense Education Curriculum for Senior Middle School Students

Huang, Tzu, Hua*
University of Taipei , Taiwan

Abstract

The purpose of this study was to explore the impact of the application of the HP Reveal augmented reality simulation system on national defense education for immersive learning, cognitive load, perceived ease of use, perceived usefulness, and learning outcomes of high school first-grade students studying national defense. AR is an extension of VR with both physical and virtual characteristics, allowing real-time interactions in 3D space, in which users can see the real environment overlap with virtual objects. This study adopted an unequal pre-test and post-test experimental design. The control group is augmented with HP Reveal augmented reality simulation system design materials, and the other is rendered as a static graphic, and the two groups Teaching time is fifty minutes a week. Six-week experiment, data collection, and analysis to take quantitative statistical information. The two groups of students had prior knowledge of pre-testing national defense awareness prior to experiment teaching, distinguished them into high and low groupings, and completed the post-test of national defense awareness after six weeks of teaching, and then completed the immersion experience scale, cognitive load afterload Tables, perceived ease of use, and perceived usefulness scales. The effectiveness of learning was statistically compared with paired sample t-test analysis. The immersive experience, cognitive load, perceived ease of use, and perceived usefulness were statistically compared using independent sample t-tests. The study found that students with different learning achievements had significant effects on learning effectiveness, immersion experience, cognitive load, perceived ease of use, and perceived usefulness. The other two groups of students also had significant effects on learning effectiveness and perceived usefulness.

Keywords: Augmented Reality, Immersive Experience, Cognitive Load, Perceived Ease of Use, Perceived Usefulness

*All correspondence related to this article should be directed Huang, Tzu, Hua, University of Taipei , Taiwan
Email: Anteater1029@gmail.com



The Effect on the Improvement of Vocational High School Students' Abilities on Popular Science Reading and Thinking by M-Learning

Liu, Yuan, Chen *

National Taipei University of Education, Taiwan

Abstract

This research hope to build OK4R reading steps in the mobile platform to enhance students' reading comprehension ability, establish their logical thinking ability, and find out if the gender, the basic ability and other factors of the students will affect them when they use the OK4R reading steps on the action platform. The participants are ninety freshman in a private Taipei vocational high school. They are divided into two groups; one is an experimental group and the other is a control group. The experimental group conducted the OK4R platform, while the control group used the traditional OK4R way to do the popular science reading. After all the pre-test, teaching experiments, and the post-test, there was an analysis done, and the results showed that 1. Vocational high school students who use OK4R action platform for popular science reading can enhance their reading comprehension ability in popular science reading effectively. 2. Vocational high school students who use OK4R action platform for popular science reading can improve their logical thinking ability significantly. 3. Using OK4R steps in popular science reading can enhance science reading comprehension and logical thinking ability. Besides, females' performances are better than males'. 1. The Mobile Platform OK4R can improve too many students who take low scores in PISA and scientific ethics. 2. The gender, basic ability, and other factors will make great differences for vocational high school students who used the action platform and follow the OK4R reading steps. Besides, those who have lower grades in the Natural Examination will be the biggest beneficiaries.

Keywords: OK4R, popular science reading, logical thinking, vocational high school students

*All correspondence related to this article should be directed to Liu, Yuan, Chen, National Taipei University of Education, Taiwan
Email: liu@tea.ntue.edu.tw



TRACK C: ENGINEERING & TECHNOLOGY SCIENCES



Effect of Fiber Volume Fraction on Tensile Strength in Composites Polyester Reinforced Sugar Palm Fiber (SPF)

Fatkhurrohman^{1*}, Zunairoh²

¹ Gadjah Mada University, Indonesia

² Airlangga University, Indonesia

Abstract

Manufacturing of eco-friendly composites has been increased due to recyclability and biodegradability factors. The effect of fiber volume fraction to tensile strength in composites polyester reinforced sugar palm fiber (SPF) has been studied experimentally. This study aim is to determine the effect of fiber volume fraction to the ultimate tensile strength of composites polyester reinforced sugar palm fiber (SPF) and Mechanism of Failure and Cross Section after tensile testing, then these results can be applied to manufacturing industries such as aerospace, shipping, train, and automotive industries. In this study the sugar palm fiber (SPF) soaked in an alkaline solution of 5% NaOH for 2 hours, then the sugar palm fiber is made of composites material with a variety of fiber volume fraction of 20%, 30%, 40%, 50%, and 60%. The method of making composites material is by hand lay-up and pressing methods, the direction of the fiber orientation is random, and for the tensile test specimens refer to the standard ASTM D-638. From the test data obtained the highest tensile strength in fiber volume fraction of 40% amounting to 24.65 MPa, while the lowest tensile strength in fiber volume fraction of 20% amounting to 17.55 MPa. For the cross-sectional shape of the composite material after tensile testing, there are two types, namely fiber pull out and delamination.

Keywords: Composites Polyester, SPF, Fiber volume fraction, tensile strength

*All correspondence related to this article should be directed to Fatkhurrohman, Gadjah Mada University, Indonesia
Email: fatkhurhero@gmail.com



An Animal Ladder Training Platform Based on Infrared Range Finder for Rehabilitation of Brain Stroke

Chi-Chun Chen^{1*}, Chun-Cheng Lin², Hui-Chun Feng³, Ching-Ping Chang⁴

^{1,2,3} National Chin-Yi University of Technology, Taiwan

⁴ ChiMei Medical Center, Tainan, Taiwan

Abstract

A growing body of research indicates strokes have soared in recent years. The survival rate of patients has exceeded 50% through the advances of medical technologies. However, major disability after a stroke engenders inconvenience and imposes mental pressure on patients. Hence, an effective rehabilitation program for health recovery is essential. Physical exercise is one of the feasible approaches. Therefore, this study developed a new animal ladder training platform based on infrared range finder for stroke rehabilitation. The platform provided an automatic acceleration training model based on the climbing habit of rats to drive the stroke rat to exercise. Moreover, an infrared range finder was used to measure the climbing positions of rats to provide feedback and adjust the exercise speed to achieve an effective rehabilitation training approach. The modified neurological severity score (mNSS) and inclined plane test were used to validate the effectiveness of the proposed training method for stroke rehabilitation training. The main difference between the proposed training platform and conventional counterparts is the dynamic mechanism, which adjusted the speed according to the exercise distance of the rat. The proposed platform can not only provide an effective exercise research platform for basic clinical researchers but also serve as a reference for human brain stroke rehabilitation.

Keywords: Stroke, Rehabilitation, Animal Ladder Training Platform, Infrared Range Finder

*All correspondence related to this article should be directed to Chi-Chun Chen, National Chin-Yi University of Technology, Taiwan
Email: chichun@ncut.edu.tw



Agh Leanline Simulation Game As A Method For Lean Manufacturing Training

Jakub Liszcz^{1*}, Krzysztof Grzesik², Kamil Paluch³
^{1,2,3} AGH University of Science and Technology, Cracow, Poland

Abstract

The human factor is an inseparable element of any implementation of Lean Management methodology in enterprises. The methodology to help streamline operations is being used enthusiastically in industrial enterprises. It shows both methods and good practices that are used to increase the efficiency of the production process. This paper describes why employees' awareness is a necessary element for the success of optimization projects. Various types of training courses were presented, with particular emphasis on simulation workshops allowing to practice Lean Management methods and tools in practice. As examples of such classes, the example of student projects carried out by members of the Student Research Group "Management" operating at the AGH University of Science and Technology in Cracow, Poland was used. "Effect in a minute", "Oleanpiada" or AGH "LeanLine" are 3 projects which, by combining theoretical training with practical simulation games, teach primary and secondary school students as well as methods used to improve processes in production companies, can be applied in everyday activities and duties with equal success.

Keywords: Lean Manufacturing, Optimisation workshops, Students Project, AGH LeanLine, Practical training

*All correspondence related to this article should be directed to Jakub Liszcz, AGH University of Science and Technology, Cracow, Poland
Email: jakub.kuba.liszcz@gmail.com



Optical Recognition of Music Symbols of an NSBSN Structure

Ku Chin Lin^{1*}, María José Rodezno Ayestas²

^{1,2} Kun Shan University, Tainan, Taiwan

Abstract

Music symbol recognition normally requires sequential integration of many techniques, each of which has been successfully tested for one or some categories of the symbols. However, development of such an integration technique is still a challenging task nowadays, especially when the image resolution acquired is low and spatial density is high. Music symbols such as notes, accidentals, stems, hooks, beams, ties, slurs, ornaments, and articulation are associated with flexibility in the spatial settings. Multiple notes could be attached to a stem which is in turn attached to a beam with other attached stems. This forms a complicated structure of notes-stem-beam-stems-notes (NSBSN) for recognition. Very few of the previous methods can be successfully applied to recognize the NSBSN-structure symbols. In this study, a novel method is proposed for this task. Multiple binary images are employed to detect the inner information (e.g., the hole of a half note) and the outer information (e.g., shape of a quarter note) of the symbols. Multiple template matchings are applied to enhance the robustness against disturbances due to image segmentation. The proposed direction for processing the NSBSN-structure symbols is opposite to that of music playing. This backward recognition processing is superior, and the F measure is higher than 0.998 for the studied set of 3 classical guitar songs.

Keywords: Optical Music Recognition, Multiple Binary Images, Multiple Template Matchings, Image Segmentation, F Measure

*All correspondence related to this article should be directed to Ku Chin Lin, Kun Shan University, Taiwan
Email: kclin@mail.ksu.edu.tw



Effect of Relative Direction and Distance of a Brush-Anode to a Cathode on Performance and Electrochemistry of a Brush-Anode and a Microbial Fuel Cell (MFC)

Bonyoung Koo¹, Heunggu Kang², Sunghoon Son³, Huong V. H. Tran⁴, Hyungwon Chai⁵, Junhyuk Kim⁶, Sokhee P. Jung^{7*}

^{1,2,3,4,5,6,7} Chonnam National University, Korea

² Green Energy Institute, Republic of Korea

Abstract

Microbial Fuel cell (MFC) is an innovative electrochemical system, being developed for an energy positive wastewater treatment process for a sustainable society. In order to improve MFC performance, optimization of the system is essential. In particular, the electrochemical properties of the anode and cathode arrangement are optimized by simple and precise analysis. In this study, five different anode-cathode arrangement (horizontal, vertical) and distances were tested in a single chamber cubic MFC. A changing a brush anode configuration, power, and current densities were increased. The horizontally-positioned anode configuration (H1) with the closest anode-cathode distance produced the highest power and current than vertically-positioned. EIS showed that H1 anode impedance and full-cell impedance were decreased by 60% and 49%, compared to vertically position. CE and EE were not significantly affected by the anode-cathode distance, but the horizontal type cells showed relatively higher CE, EE, and COD removal rate and shorter batch time. The center of a titanium current collector and the center of carbon fibers of a brush-anode were found to be statistically-significant reference points for MFC electrochemistry.

Keywords: Microbial Fuel Cell, Carbon Brush Anode, Electrochemistry, Electrode Configuration

*All correspondence related to this article should be directed to Sokhee Jung, Chonnam National University, Korea
Email: sokheejung@gmail.com



Effects of Wire-type and Mesh-type Current Collectors in a Carbon-Felt Anode on Performance and Electrochemistry in a Microbial Fuel Cell

Hyungwon Chai¹, Bonyoung Koo², Sunghoon Son³, Huong V. H.
Tran⁴, Junhyuk Kim⁵, Eojin Kim⁶, Sokhee P. Jung^{7*}
^{1,2,3,4,5,6,7} Chonnam National University, Korea

Abstract

Microbial fuel cell (MFC) is an environmental energy system that converts the energy contained in organic wastewater into electrical energy by microbial catalysis. High-performance electrode materials make it possible to achieve high power generation of MFC systems by reducing internal resistance. The performance impact of the anode current collector area in the MFC was investigated in this research. Carbon-based materials are generally used for the MFC anode electrode, but their conductivity is much lower than metal materials. In this study, it was hypothesized increasing metal current collector areas improve anodic performance. Carbon-felt anodes with titanium wires or stainless steel mesh were tested. In conclusion, in the IV polarization test, maximum power density, maximum current density and optimum current density were 33%, 34% and 30% higher in CF-M (2,311 mW/m², 16,815 mA/m² and 7,651 mA/m²) than CF-W (1,737 mW/m², 12,566 mA/m² and 5,874 mA/m²), respectively. However, the stainless steel mesh used as the current collector of CF-M inhibits microbial growth, and adhesion on the carbon felt and reduces mass transfer because it decreases the surface area of carbon felt.

Keywords: Microbial Fuel Cell, Current Collector, IV Polarization, Anode

*All correspondence related to this article should be directed to Sokhee Jung, Chonnam National University, Korea
Email: sokheejung@gmail.com



Improved Current Collector Structure Enhances Power Generation of a Microbial Fuel Cell (MFC) by Decreasing Cathodic Charge Transfer Impedance

Junhyuk Kim¹, Hyungwon Chai², Sokhee P. Jung^{3*}

^{1,2,3}, Chonnam National University, Korea

Abstract

Microbial fuel cell (MFC) is an innovative environmental and energy system that converts energy in wastewater into electrical energy and purify wastewater. There are a number of challenges for the practical implementation of MFC as a wastewater treatment process. Among them, improving cathode performance is one of the important issues, and the introduction of a current collector is an easy and practical way to improve cathode performance. In this study, a single-chamber cubic MFC was tested with three current collectors made of stainless steel mesh (SSM) with different contact areas (P 1 cm², PC 4.3 cm², PM 6.5 cm²) were tested in a single-chamber cubic MFC. Increasing the contacting area enhanced the power, current generations, coulombic efficiency, and energy recovery by mainly decreasing cathodic charge transfer impedance. Application of the SSM to the cathode (PM) improved maximum power density, optimum current density and maximum current density by 8.8%, 3.6%, and 6.7%, respectively, compared with P of no SSM, by applying an SSM, cathodic polarization resistance decreased by up to 16%, and cathodic charge transfer impedance decreased by up to 39%.

Keywords: Microbial Fuel Cells; Cathode; Current Collector; Stainless Steel; Electrochemical Impedance Spectroscopy

*All correspondence related to this article should be directed to Sokhee P. Jung, Chonnam National University,
Email: sokheejung@gmail.com



Effects of Different Structures and Materials of an Anode on Performance, Polarization Behaviors, and Impedance in a Microbial Fuel Cell (MFC)

Sunghoon Son¹, Bonyoung Koo², Sokhee P. Jung^{3*}

^{1,2,3} Chonnam National University, Korea

Abstract

Various materials and anode structures have been applied to enhance MFC performance. However, their comparative evaluation of performance and electrochemistry has not yet been investigated in detail under the same condition. In this study, a carbon-cloth anode, an anode-cathode assembly, and a brush anode with two different orientations were tested under the same condition. Anode was tested in four types: Full Cloth (FC), Full Cloth Electrode Assemblies (FCEA), Full Brush-Horizontal (FB-H) and Full Brush-Vertical (FB-V). Electrochemical analysis has measured polarization curve, CV and EIS. Polarization curve measurements showed the highest maximum power density (1,034 mW/m²) in FB-H, which is 72 % higher than the lowest FC (601 mW/m²). CV measurement results showed the highest current production (4.5 mA) in FC. EIS measurement results showed the lowest internal resistance value (23 Ω) in FB-H. In order to improve MFC performance by modifying anode structures, we suggest the followings: 1) an anode should have a large surface area, 2) anodic carbon material and a metal current collector must be tightly connected, 3) locating a brush anode closer to a cathode can be important.

Keywords: Microbial Fuel Cell, Electrochemical, Anode Structure, Carbon Brush, Carbon Cloth

*All correspondence related to this article should be directed to Sokhee Jung, Chonnam National University, Korea
Email: sokheejung@gmail.com



Influence of the Flowrates of Reverse Electro-dialysis (RED) Stack on Power Generation, Polarization Behavior, and Internal Impedance Distribution of Microbial Reverse-electrodialysis Cell (MRC)

Huong V. H. Tran¹, Sunghoon Son², Sokhee P. Jung^{3*}
^{1,2,3} Chonnam National University, Korea

Abstract

By combining a microbial fuel cell (MFC) with a reverse electro-dialysis (RED) stack, a microbial reverse-electrodialysis cell (MRC) can simultaneously treat and generate electricity from salinity gradient and organic wastewater. Optimum RED flow rate plays an important role in operating an MRC because it is closely related to energy production rate and economic feasibility. However, the influence of RED flow rates on MRC electrochemistry and power production has not been investigated. Hence, this study carried out different tests of four flow rates at high and low concentration solutions to assess optimum RED flow rate. The highest maximum power density was 3.71 W/m² gained when the flow rate was 10 mL/min, and the highest optimum current density was 5.36 A/m² when the flow rate was 7.5 mL/min. To enter into details, by mere increasing the flow rate to MRC, maximum power and optimum current densities increased by 17.7% and 16.2%. EIS results illustrated impedances of the anode, cathode and full-cell decreased by 51%, 31%, and 19%, respectively. CV anode test displayed that peak current density increased by 25.7%. In addition, COD removal and CE were not affected by RED flow rate. In the power generation comparison, there was no significant difference between the RED flow rate of 7.5 mL/min and 10 mL/min. Therefore, considering energy production, energy efficiency, and energy recovery, the RED flow rate of 7.5 mL/min is a reasonable choice for MRC operation.

Keywords: Microbial Fuel Cell, MFC, Reverse Electro-Dialysis, RED, Microbial Reverse-Electrodialysis Cell, MRC, RED Flow Rate

*All correspondence related to this article should be directed to Sokhee P. Jung, Chonnam National University, Korea
Email: sokheejung@chonnam.ac.kr

FUTURE EVENTS

**5th INTERNATIONAL CONFERENCE ON
“Multidisciplinary Innovation in Business Engineering
Science & Technology”
(MI-BEST -2019)**



**This conference is jointly organized by
Global Illuminators and University of
Mindanao, Philippines**



Date: April 05-06, 2019

Venue: Regal Oriental Kowloon, Hong Kong

Email: mibest@globalilluminators.org

Abstract Submission Date: March 20, 2019

Full Paper Submission Date: March 25, 2019

Selected conference papers will be published in the special /regular issue of ISI/Scopus-indexed journals associated with this conference.

Conference Main Tracks

- Business, Management, and Economic Studies
- Health and Medicine Studies
- Engineering & Technology Studies
- Social Sciences & Humanities
- Physical Life and Applied Sciences
- Regional and Religious Studies
- Multidisciplinary and Interdisciplinary Studies

For more details, visit www.globalilluminators.org

**2nd INTERNATIONAL CONFERENCE ON
“Economics and Business at the Interface of Natural
Sciences” (EBINS-2019)**



**This conference is jointly organized by
Global Illuminators, and University of
the Immaculate Conception, Davao,
Philippines**



Date: April 19-20, 2019

Venue: Hotel Grand Pacific Singapore

Email: ebins@globalilluminators.org

Abstract Submission Date: March 30, 2019

Full Paper Submission Date: April 05, 2019

**Selected conference papers will be published in the special
/regular issue of ISI/Scopus-indexed journals associated
with this conference.**

Conference Main Tracks

- Business, Management, and Economic Studies
- Health and Medicine Studies
- Engineering & Technology Studies
- Social Sciences & Humanities
- Physical Life and Applied Sciences
- Regional and Religious Studies
- Multidisciplinary and Interdisciplinary Studies

For more details, visit www.globalilluminators.org

**5th INTERNATIONAL CONFERENCE ON
“New Directions in Multidisciplinary Research &
Practice” (NDMRP-2019)**



Date: June 15-16, 2019

Venue: Novotel London Waterloo Hotel, UK

Email: ndmrp@globalilluminators.org

Abstract Submission Date: May 15, 2019

Full Paper Submission Date: May 30, 2019

Selected conference papers will be published in the special /regular issue of ISI/Scopus-indexed journals associated with this conference.

Conference Main Tracks

- Business, Management, and Economic Studies
- Health and Medicine Studies
- Engineering & Technology Studies
- Social Sciences & Humanities
- Physical Life and Applied Sciences
- Regional and Religious Studies
- Multidisciplinary and Interdisciplinary Studies

For more details, visit www.globalilluminators.org

**6th INTERNATIONAL CONFERENCE ON
“Global Trends in Academic Research”
(GTAR -2019)**



Date: June 22-23, 2019

Venue: Novotel Barcelona Sant Joan Despi, Spain

Email: gtar@globalilluminators.org

Abstract Submission Date: June 05, 2019

Full Paper Submission Date: June 10, 2019

Selected conference papers will be published in the special /regular issue of ISI/Scopus-indexed journals associated with this conference.

Conference Main Tracks

- Business, Management, and Economic Studies
- Health and Medicine Studies
- Engineering & Technology Studies
- Social Sciences & Humanities
- Physical Life and Applied Sciences
- Regional and Religious Studies
- Multidisciplinary and Interdisciplinary Studies

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**6th INTERNATIONAL CONFERENCE ON
“Multidisciplinary Innovation for Sustainability and
Growth” (MISG – 2019)**



Date: July 13-14, 2019

Venue: The Federal Kuala Lumpur Malaysia

Email: misg@globalilluminators.org

Abstract Submission Date: June 20, 2019

Full Paper Submission Date: June 25, 2019

Selected conference papers will be published in the special /regular issue of ISI/Scopus-indexed journals associated with this conference.

Conference Main Tracks

- Business, Management, and Economic Studies
- Health and Medicine Studies
- Engineering & Technology Studies
- Social Sciences & Humanities
- Physical Life and Applied Sciences
- Regional and Religious Studies
- Multidisciplinary and Interdisciplinary Studies

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**5th INTERNATIONAL CONFERENCE ON
“Multidisciplinary Innovation In Academic Research”
(MIAR – 2019)**



Date: July 27-28, 2019

Venue: The Howard Plaza Hotel Taipei, Taiwan

Email: miar@globalilluminators.org

Abstract Submission Date: July 10, 2019

Full Paper Submission Date: July 15, 2019

Selected conference papers will be published in the special /regular issue of ISI/Scopus-indexed journals associated with this conference.

Conference Main Tracks

- Business, Management, and Economic Studies
- Health and Medicine Studies
- Engineering & Technology Studies
- Social Sciences & Humanities
- Physical Life and Applied Sciences
- Regional and Religious Studies
- Multidisciplinary and Interdisciplinary Studies

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**6th INTERNATIONAL CONFERENCE ON
“Multidisciplinary Academic Research and Global
Innovation” (MARGI– 2019)**



Date: August 24-25, 2019

Venue: Kuntai Hotel Beijing China

Email: margi@globalilluminators.org

Abstract Submission Date: August 10, 2019

Full Paper Submission Date: August 15, 2019

Selected conference papers will be published in the special /regular issue of ISI/Scopus-indexed journals associated with this conference.

Conference Main Tracks

- Business, Management, and Economic Studies
- Health and Medicine Studies
- Engineering & Technology Studies
- Social Sciences & Humanities
- Physical Life and Applied Sciences
- Regional and Religious Studies
- Multidisciplinary and Interdisciplinary Studies

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**6th INTERNATIONAL CONFERENCE ON
“Multidisciplinary Trends in Academic Research”
(MTAR– 2019)**



Date: September 27-28, 2019

Venue: Holiday Inn Bangkok Silom, Bangkok Thailand

Email: mtar@globalilluminators.org

Abstract Submission Date: September 05, 2019

Full Paper Submission Date: September 10, 2019

Selected conference papers will be published in the special /regular issue of ISI/Scopus-indexed journals associated with this conference.

Conference Main Tracks

- Business, Management, and Economic Studies
- Health and Medicine Studies
- Engineering & Technology Studies
- Social Sciences & Humanities
- Physical Life and Applied Sciences
- Regional and Religious Studies
- Multidisciplinary and Interdisciplinary Studies

For more details, visit www.globalilluminators.org

**5th INTERNATIONAL CONFERENCE ON
“Research Challenges to Multidisciplinary Innovation”
(RCMI– 2019)**



Date: October 05-06, 2019

Venue: Nine Tree Premier Hotel Myeongdong 2 Seoul, South Korea

Email: rcmi@globalilluminators.org

Abstract Submission Date: September 20, 2019

Full Paper Submission Date: September 25, 2019

Selected conference papers will be published in the special /regular issue of ISI/Scopus-indexed journals associated with this conference.

Conference Main Tracks

- Business, Management, and Economic Studies
- Health and Medicine Studies
- Engineering & Technology Studies
- Social Sciences & Humanities
- Physical Life and Applied Sciences
- Regional and Religious Studies
- Multidisciplinary and Interdisciplinary Studies

For more details, visit www.globalilluminators.org

**6th INTERNATIONAL CONFERENCE ON
“Innovative Trends in Multidisciplinary Innovation”
(ITMAR– 2019)**



Date: October 19-20, 2019

Venue: Istanbul Gonen Hotel, Istanbul, Turkey

Email: itmar@globalilluminators.org

Abstract Submission Date: September 25, 2019

Full Paper Submission Date: October 9, 2019

Selected conference papers will be published in the special /regular issue of ISI/Scopus-indexed journals associated with this conference.

Conference Main Tracks

- Business, Management, and Economic Studies
- Health and Medicine Studies
- Engineering & Technology Studies
- Social Sciences & Humanities
- Physical Life and Applied Sciences
- Regional and Religious Studies
- Multidisciplinary and Interdisciplinary Studies

For more details, visit www.globalilluminators.org

**6th INTERNATIONAL CONFERENCE ON
“Emerging Trends in Academic Research” (ETAR–2019)**



Date: November 27-28, 2019

Venue: The Trans Resort Bali, Indonesia

Email: etar@globalilluminators.org

Abstract Submission Date: November 05, 2019

Full Paper Submission Date: November 15, 2019

Selected conference papers will be published in the special /regular issue of ISI/Scopus-indexed journals associated with this conference.

Conference Main Tracks

- Business, Management, and Economic Studies
- Health and Medicine Studies
- Engineering & Technology Studies
- Social Sciences & Humanities
- Physical Life and Applied Sciences
- Regional and Religious Studies
- Multidisciplinary and Interdisciplinary Studies

For more details, visit www.globalilluminators.org

**6th INTERNATIONAL CONFERENCE ON
“Innovation Challenges in Multidisciplinary Research &
Practice” (ICMRP–2019)**



Date: December 14-15, 2019

Venue: Hotel Grand Pacific Singapore

Email: icmrp@globalilluminators.org

Abstract Submission Date: November 20, 2019

Full Paper Submission Date: November 25, 2019

Selected conference papers will be published in the special /regular issue of ISI/Scopus-indexed journals associated with this conference.

Conference Main Tracks

- Business, Management, and Economic Studies
- Health and Medicine Studies
- Engineering & Technology Studies
- Social Sciences & Humanities
- Physical Life and Applied Sciences
- Regional and Religious Studies
- Multidisciplinary and Interdisciplinary Studies

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CSR



Environment

Charities

Public Health



Growth and
Development



Sustainability



CSR Activity Conducted By Global Illuminators: Sports Activation for Children against Negative Impact of Internet & Technology

In April 2016, Global Illuminators conducted Corporate Social Responsibility program together with Maestro and the Clover as Sports Facility Provider in Bandung, initiating an event with the theme:



The Objectives of this event were:

1. Media of education for parents and children to be aware of a digital new era and its impact on children's life
2. Facilitate and promote futsal as one of the kinds of sports activation that can be an alternative activity for children against the negative impact of the internet
3. Social activity and charity engaging orphans to enjoy sports activities together with their friends
4. Corporate Social Responsibility of the Company to contribute to the society especially to solve one of the social problems in Bandung.

Highlights of CSR Activities are given below:



Global Illuminators Malaysia Team conducted its Latest CSR activity at Rumah Charis, Kuala Lumpur, Malaysia Children Home

Global Illuminators Malaysia Team conducted its latest CSR activity at Rumah Charis, Kuala Lumpur, Malaysia Children home. The children home ministry provides care for orphans and single-parent children. Their homes and activities aim to create a suitable environment to enable children to grow. They help to provide spiritual direction, education, and counseling for the children. Emphasis was given to fellowshiping and spending time with the children over refreshments, as well as presenting them with small gifts and the organizing of special entertainment programmes for the children such as a special game segment. One of the other highlights of the evening was the goodie bags distribution programme carried out by Global Illuminators.



Global Illuminators Indonesian Team conducted its Latest CSR activity in Ramadan for Local Community Welfare, sharing Happiness and developing Orphan Children

Global Illuminators Indonesian team conducted its latest CSR activity in Ramadan for orphans. The purpose of this activity was to give happiness and develop orphans with the support of more than 60 volunteers and distribute iftar to more than 400 beneficiaries (yateem, orphan, and dhuafa). Global Illuminators Indonesian team spent time with children and conducted different activities for their moral self-development.

Highlights of this activity are given below:





MISSION

"Our mission is to persistently nurture the values to promote the human rights, institutional and academic development through quality research contributions. Our unique human capital with constructive attitude is committed to bring change in all spheres of life by using innovative research and intellectual skills. We are here to research and promote the development, prosperity and transparency across the globe without any discrimination".

VISION

"Researching and Developing for Humanity"

5th INTERNATIONAL CONFERENCE ON

"GLOBAL ISSUES IN MULTIDISCIPLINARY ACADEMIC RESEARCH"

(GIMAR- 2019)

Head Office (Malaysia)
125, Jalan Jinjang Setia 5,
Jinjang Utara, 52000
Kuala Lumpur, Malaysia.
Whatsapp Contact Number: (+60) 01 254 6571
E-mail: info@globalilluminators.org
URL: www.globalilluminators.org

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