24-25 APRIL 2025

INTERNATIONAL COLLEGE
THAKSIN UNIVERSITY

BOOK OF ABSTRACT

THE 2ND INTERNATIONAL CONFERENCE ON ASEASN SUSTAINABLE DEVELOPMENT (ICASD 2025)

Accelerating Action:

Collaborative Solutions For Sustainable Development

Message from the President of Thaksin University

On behalf of Thaksin University (TSU), it is my distinct honor to welcome you to the 2nd International Conference on ASEAN Sustainable Development (ICASD 2025), held under the theme "Accelerating Action: Collaborative Solutions for a Sustainable Future."

I take great pride in the continued success of this meaningful conference, which will undoubtedly yield positive impacts for researchers, scholars, and all individuals committed to the advancement of sustainable knowledge. ICASD 2025 stands as a powerful continuation of our mission to foster global partnerships and drive transformative progress toward the achievement of the Sustainable Development Goals (SDGs).

Hosted by Thaksin University's International College, this year's conference is made possible through the invaluable collaboration of our esteemed partners: the Institute of Research and Innovation, Faculty of Economics and Business Administration, Faculty of Law, Faculty of Agro- and Bio-Industry, International Relations Office, and the Center of Excellence for Agricultural Innovation and Bioproducts (ExCAB–TSU). We are also honored to be joined by our international partners: Université de Moncton (UM), Universiti Utara Malaysia (UUM), Myanmar Creative University (MSU), Scientists and Engineers Without Borders, and the IMT–GT network.

The International College of Thaksin University takes immense pride in sustaining this conference as a cornerstone of global academic dialogue — a testament to our unwavering commitment to advancing cross-border collaboration, pioneering research, and actionable solutions for a more sustainable future. Building upon the legacy of its inaugural event, ICASD 2025 serves as a dynamic platform for the exchange of knowledge, insights, and best practices. By bringing together experts, policymakers, researchers, and practitioners from across disciplines and borders, we aim to accelerate meaningful progress on critical issues such as climate resilience, equitable resource management, and inclusive technological innovation.

To all our distinguished participants, speakers, and partners: your presence and expertise are instrumental in shaping a more sustainable and just future for ASEAN and the global community. May this conference inspire bold thinking, shared learning, and concrete steps that translate vision into impact.

In closing, I extend our deepest appreciation to all co-hosting institutions for their steadfast partnership. We are confident that ICASD 2025 will not only mark a significant milestone in academic cooperation but also lay the foundation for further collaborative initiatives, joint research endeavors, and impactful policy engagement.

Looking ahead, we reaffirm our commitment to sustaining this platform for years to come ensuring that it continues to serve as a beacon of innovation, dialogue, and collective progress.

Together, let us accelerate action and forge a legacy of transformative change.

Sincerely,

(Assoc. Prof. Dr. Natthapong Chitniratna)
President of Thaksin University

Message from Vice President for Research and Innovation, Thaksin University

In today's 21st Century, we face complex challenges in achieving sustainable development. Increasingly extreme climate change, alarming environmental degradation, and widening social inequalities. All these challenges threaten not only natural ecosystems but human survival itself. The United Nations has provided a comprehensive definition of sustainable development as "meeting the needs of the present without compromising the ability of future generations to meet their own needs." This definition should serve as a compass for all global development efforts. Yet in practice, we still encounter significant gaps between theory and implementation.

The critical role of innovation and collaboration are pivotal to technological advancements and innovation of the new hope. Breakthroughs in renewable energy, circular economy, and green technology have shown tremendous potential. However, technical solutions alone are insufficient. We need more fundamental paradigm shifts in how we perceive the relationship between humanity and nature because the truth is that “nature can exist without humans, but humans can’t survive without nature.”

A holistic approach integrating environmental, social and economic aspects must form the foundation of all development policies. This is where the academic and research community plays a vital role in generating new knowledge and innovative solutions tailored to global sustainable contexts. It is in this context that the 2nd International Conference on ASEAN Sustainable Development (ICASD 2025) under the theme “Accelerating Action: Collaborative Solutions for a Sustainable Future” gains strategic importance. This forum will serve not only as an academic exchange platform but more crucially, as a bridge between theory and practice.

I hope this conference will identify specific challenges in the ASEAN region and strengthen collaborative networks among academics, practitioners and policymakers to formulate innovative solutions appropriate to global challenges.

In conclusion, I emphasize that sustainable development is no longer optional but imperative. Any delay in action will only worsen existing conditions. Let us make ICASD 2025 a pivotal moment to accelerate our transition toward a more sustainable and equitable future.

Sincerely,

(Assoc. Prof. Dr. Samak Kaewsuksaeng)
Vice President for Research and innovation

Message from the Co-Chair of the 2nd International Conference on ASEAN Sustainable Development (ICASD 2025)

On behalf of the organizing committee, it is my great pleasure to welcome you to the 2nd International Conference on ASEAN Sustainable Development (ICASD 2025). This year, our theme, "Accelerating Action: Collaborative Solutions for A Sustainable Future," reflects our collective commitment to addressing the pressing challenges we face in pursuit of sustainable development across the ASEAN region.

As we gather here, we have a unique opportunity to exchange ideas, share best practices, and forge partnerships that will drive innovative solutions to complex issues such as climate change, resource management, and social equity. The success of our initiatives depends on our ability to collaborate across sectors and borders, leveraging our diverse perspectives and expertise.

We are privileged to have esteemed speakers, scholars, and practitioners joining us, who will enrich our discussions and inspire action. Your participation is vital as we seek to align our efforts and accelerate the implementation of the Sustainable Development Goals (SDGs) in our communities.

Let us embrace this opportunity to connect, learn, and contribute to a shared vision of a sustainable future for all. Together, we can create impactful solutions that will benefit not only ASEAN but the entire globe.
Thank you for being with us. I look forward to engaging discussions and fruitful collaborations.

Warm regards,

(Dr. Pinit Duangchinda)
Dean of Economics business and administration
Co-Chair, ICASD 2025

Message from Dean of the Faculty of Agro-and Bio-Industry, Thaksin University

It is with great pride and pleasure that the Faculty of Agro- and Bio-Industry extends its warmest welcome to all participants of the 2nd International Conference on ASEAN Sustainable Development (ICASD 2025). This crucial academic platform brings together researchers, educators, practitioners, and policymakers from ASEAN and beyond to share knowledge, innovations, and practical solutions for sustainable development. The conference theme aligns with the United Nations Sustainable Development Goals (SDGs) and reflects our shared commitment to addressing global challenges through regional collaboration and scientific advancement.

As one of the co-hosting institutions, the Faculty of Agro- and Bio-Industry is honoured to support this international exchange of ideas to foster sustainability in agriculture, biotechnology, food systems, the environment, and broader socioeconomic contexts.

We believe that this conference's outcomes will spark new collaborations, inspire future research, and contribute meaningfully to sustainable growth and development in the ASEAN region.
We thank all organizers, keynote speakers, presenters, and participants for their valuable contributions. May ICASD 2025 be a memorable and fruitful experience for all.

Assistant Prof. Dr. Rutrada Theppradit
Dean of Faculty of Agro- and Bio-Industry
Thaksin University

Message from Head of Centre of Excellence, Thaksin University

It is with great pleasure and honor that the Center of Excellence for Agricultural Innovation and Biological Products, Thaksin University, welcomes you to the 2nd International Conference on ASEAN Sustainable Development (ICASD 2025) under the theme "Accelerating Action: Collaborative Solutions for A Sustainable Future."

On behalf of the Center of Excellence, we are proud to co-host this significant event alongside the International College, Research and Innovation Institute, Faculty of Economics and Business Administration, Faculty of Law, Faculty of Agro-and Bio-Industry, and the International Relations Office. This integration of expertise from various disciplines reflects the need for cross-disciplinary collaboration to address the complex sustainability challenges.

Our conference theme, "Accelerating Action: Collaborative Solutions for A Sustainable Future," is particularly relevant in the current context where the ASEAN region faces numerous challenges, including climate change, food security, population change, and rapid technological advancements. We must not only analyze these issues but also accelerate our actions and collaborate to create a sustainable future for all. As a Center of Excellence in Agricultural Innovation and Bioproducts of Thaksin University, we recognize the crucial role of agriculture and biotechnology in driving sustainable development, particularly in food security, environmentally friendly agriculture, and the Bio-Circular-Green Economy. We are committed to creating a platform for knowledge exchange, innovation sharing, and collaborations that will lead to practical and contextually appropriate solutions for the ASEAN region.

ICASD 2025 provides an excellent opportunity for academics, researchers, industry experts, and stakeholders from all sectors to jointly analyze challenges, share best practices, and develop collaborative solutions. We hope that this conference will establish strong networks of cooperation that will continue beyond the event and become driving forces for positive change in our region.

We invite all participants to actively participate, share diverse perspectives, and collectively create innovative solutions for the sustainability challenges. Only through interdisciplinary, cross-border, and cross-sectoral collaboration can we achieve our sustainable development goals.

Finally, express our gratitude to all co-hosting units, the organizing committee, speakers, presenters, and participants who have contributed to making this conference possible. We sincerely hope that ICASD 2025 will be informative, inspiring, and lead to practical actions for a sustainable future in the ASEAN region and our world.

With best regards,

(Assist. Prof. Dr. Nantharat Phruksaphithak)

Message from Dean of Faculty of Law, Thaksin University

On behalf of the Faculty of Law at Thaksin University, I am very pleased to co-host the international academic conference with International College, Thaksin University. The conference will be held under the theme, "Research and Social Innovation for Sustainable Development Goals." This conference will serve as an important platform for the exchange of knowledge and the promotion of international academic collaboration, particularly in the context of the ASEAN region.

In the 21st century, the globe is seeing significant changes in various domains, including the environment, society, and economics, and particularly technology, which includes artificial intelligence (AI), blockchain, and big data. These alterations directly impact the social structures, economic systems, and legal systems. While these technological breakthroughs have created wonderful growth prospects, they have also introduced unprecedented legal obstacles. These challenges include concerns about personal data protection, cybersecurity, credibility for artificial intelligence, and equity in access to technology. The law is no longer merely a tool for organizing society; rather, it is an essential component in ensuring that development is sustainable and just and does not leave anybody behind. The Sustainable Development Goals (SDGs) align with this approach, emphasizing the importance of leaving no one behind.

The Faculty of Law acknowledges the role it plays in training graduates to deal with the ever-changing environment. The course includes the development of policy-oriented research and legal recommendations that are in response to the modern world, which necessitates collaboration across disciplinary lines and international borders. All of the organizers deserve our gratitude.

I really hope that this conference will serve as a driving force for continued academic collaboration and contribute to the establishment of meaningful social innovations. This hope is shared by the working committee as well as participants from all regions who came this time to exchange knowledge. Thank you, and I wish this international academic conference immense success.

Sincerely,
Assistant Professor Krisda Apinawatawornkul
Dean of law ,Thaksin University

Message from Vice President of Université de Moncton

It is with honor that the Université de Moncton, in Canada, is once again partnering with Thaksin University, in Thailand, to host the second edition of the International Conference on ASEAN Sustainable Development (ICASD 2025) to be held in Phuket, Thailand.

The Université de Moncton and Thaksin University have a long-standing relationship, with research collaborations in engineering and renewable energy, along with contributions in the activities of the International College at Thaksin University. We also had the privilege of hosting researchers from Thaksin University within our facilities in Canada. These activities have allowed for the sharing of knowledge, the sharing of expertise and building our respective research capacities in the dynamic and rapidly evolving field of renewable energy.

Climate change, energy transition, sustainable development are now part of the narrative of developed nations and emerging economies. The southeast Asian nations are no different to these challenges, and they have embraced these concepts in guiding their development of public policies to achieve sustainability.

The International Conference on ASEAN Sustainable Development (ICASD 2025) is a great opportunity for the dissemination of knowledge and exchange on best practices in an area of great importance in the current era of climate change and demographic challenges. As always, we wish best success to ICASD 2025, and we enthusiastically encourage constructive discussions during the Conference, along with the creation of new research collaborations and new friendships.

(Prof.Dr. Sébastien Deschênes)
Vice President, Université de Moncton, Edmundston Campus

Message from the President of SEWB

Dear respected guests, organizers, and participants of the 2nd International Conference on ASEAN Sustainable Development,

On behalf of Scientists and Engineers Without Borders (SEWB) of Korea, I would like to warmly congratulate you on the opening of ICASD 2025. Thank you to Thaksin University and everyone who worked hard to organize this important event.

The theme of this year's conference, "Collaborative Solutions for a Sustainable Future," is very meaningful and timely. Around the world, people are working together to solve big problems such as climate change, clean energy, education, and health. These goals are part of the United Nations Sustainable Development Goals, and your conference shows how much we can do when we share ideas and work as partners.

At SEWB, we believe that science, technology, and strong partnerships
can improve lives and create real change. We hope to continue working with friends in Thailand and across ASEAN to build a better future for all.

Congratulations again on this wonderful event. I wish you all great success and inspiring discussions.

Thank you very much.

(Kwanwoo Shin)
President, Scientists and Engineers Without Borders (SEWB)

Message from the Dean of School of Business Management, UUM

On behalf of the School of Business Management at Universiti Utara Malaysia (UUM) and Thaksin University, it is our great pleasure to extend a warm welcome to all participants of The 2nd International Conference on ASEAN Sustainable Development (ICASD 2025).

This event reflects our shared dedication to fostering a sustainable future, driven by collaboration across institutions and borders.As key advocates of innovation, research, and educational excellence, both UUM and Thaksin University are committed to promoting impactful discussions and tangible progress in sustainable development.

Our support for ICASD 2025 highlights our belief in the power of collective knowledge and the importance of collaborative efforts to address the most pressing environmental, economic, and social challenges faced by the ASEAN region and beyond.
By uniting experts, practitioners, and policymakers, the conference seeks to inspire new insights and actionable strategies for sustainable growth. We are honored to play a pivotal role in supporting conversations on environmental stewardship, responsible resource management, and inclusive economic development—areas that lie at the very heart of our institutional values.

We trust that the exchange of research findings, best practices, and innovative perspectives throughout ICASD 2025 will foster meaningful partnerships and shape the path toward a sustainable ASEAN community. We look forward to the dynamic engagements and breakthroughs that will undoubtedly emerge, and we wish everyone a productive and enlightening conference experience.

(Assoc. Prof. Dr. Shuhymee Ahmad)
Dean, School of Business Management
Universiti Utara Malaysia

Message from Chairman Research Committee Myanmar Creative University

It is my great honor to welcome all participants to the International Conference on ASEAN Sustainable Development 2025 (ICASD 2025). Myanmar Creative University (MCU) is pleased to co-organize this significant event with Thaksin University (TSU) and esteemed academic partners worldwide.

This conference reflects our shared commitment to advancing sustainable development across ASEAN. MCU fully supports the goals of ICASD 2025 and values the opportunity to strengthen academic ties in the region and beyond—especially our close and continuing partnership with TSU.
Although MCU leadership is unable to attend in person due to the ongoing natural disaster in Myanmar—the most severe in decades—we send our sincere support and friendship to all participants. In these difficult times, international academic cooperation remains essential.

The conference's themes—People, Peace, Planet, Prosperity and Partnership—offer a timely and important foundation for knowledge exchange, research, and collaborative learning. These dimensions are central to sustainable progress in ASEAN and globally.

I sincerely hope ICASD 2025 will be filled with mutual understanding, creativity, and meaningful dialogue that inspires lasting contributions to our shared future.

(Professor Nattaphan Kechararanta)
Chairman, Research Committee
Myanmar Creative University

The 2nd International Conference ASEAN Sustainable Development (ICASD 2025)

THEME: "ACCELERATING ACTION: COLLABORATIVE SOLUTIONS FOR A SUSTAINABLE FUTURE"

Day 1: Academic Conference (Thursday, 24 April 2025)

Time	Agenda
08:30 – 09:00	Registration
09:00 – 09:40	**Opening Ceremony (MC**: Mr. Budy Prastyo and Ms. Chanatip) • Music and Video Presentation • TSU Video • Reporting by Dr. Yejin Kim, ICASD Committee, International College, Thaksin University • Opening by Dr. Pittayathorn Kaewkong, Acting Dean of International College, Thaksin University • Photo session
09:40 – 10:30	**Keynote Speaker 1 :** Prof. Dr. Nils-Kaare Birkeland • **Topic :** Biodegradation of Feather Keratin by Thermophilic Fervid bacterium: Species Structural and Multi-omics Insights
10:30 – 10:50	**Refreshment**
10:50 – 11:40	**Keynote Speaker 2 :** Prof. Dr. Min-Soo Maeng • **Topic :** Korea's policy Directions for International Carbon Reduction and Sustainable International Development Cooperation in response to Climate Change
11:40 – 13:00	**Lunch**
13:00 – 16:30	**Oral Presentations of the Participants** ***Session 1 : People*** **Chair :** Assoc.Prof.Dr. Darwina Arshad **Co-chair :** Dr. Muhammad Hassan Arshad **Invited Speaker :** Assoc.Prof.Dr. Darwina Arshad **Title :** Enhancing Strategic Decision-Making through Ambidextrous Leadership and Environmental Dynamism in Schools ***Session 2 : Prosperity*** **Chair :** Assoc Prof Dr Hendrik Bin Lamsali **Co-chair :** Md Ahbabur Rahman **Invited Speaker :** Assoc.Prof.Dr. Hendrik Bin Lamsali **Title :** Assessing Service Quality of Last-mile Delivery Services and Customer Satisfaction In Malaysia

Time	Agenda
13:00 – 16:30	**Oral Presentations of the Participants** ***Session 3 : Planet–Group 1*** **Chair :** Assoc.Prof.Dr. Sompong O-Thong **Co-chair :** Dr. HyungWoo Lee **Invited Speaker :** Dr. Edy Kurniawan **Title :** Optimizing continuous medium-chain fatty acid production from biohydrogenic palm oil mill effluent: Operational parameters and biohydrogenic palm oil mill effluent: Operational parameters and microbial dynamics ***Session 4 : Planet–Group 2*** **Chair :** Prof. Dr. Yves Gagnon **Co-chair :** Abdunfatah Masamae **Invited Speaker :** Norhanizan Usaizan **Title :** Determining Soil Suitability for Oil Palm (Elaeis guineensis) Cultivation: A Comprehensive Study of Soil Fertility and Nutrient Dynamics ***Session 5 : Peace and Partnership*** **Chair :** AsstProf.Dr. Aniwat Kaewjamnong **Co-chair :** Dr. Yejin Kim **Invited Speaker :** AsstProf.Dr. Aniwat Kaewjamnong **Title :** ***Session 6 : Online Presentations*** **Chair :** Dr Muhammad Zulqarain Arshad **Invited Speaker :** Dr Muhammad Zulqarain **Title :** The Impact of Workplace Bullying and Stress on Employee Well-being: The Mediating Role of Stress in the Pakistani Banking Sector
17:00 – 19:00	**Free time**
19.00 – 21.00	**Gala Dinner – Dress Code: International Vibes Welcome!** • Welcoming by the Dean of International College (IC) – Thaksin University • Music show by “Mock and Friends Saxophone Band” and Lucky Draw • Announcement of Outstanding & Honorable Presentation • Presentation of tokens to Co-hosts • Closing remarks by Asst.Prof.Dr. Aniwat Kaewjamnong, the Deputy Dean of IC-TSU

The 2nd International Conference ASEAN Sustainable Development (ICASD 2025)

THEME: "ACCELERATING ACTION: COLLABORATIVE SOLUTIONS FOR A SUSTAINABLE FUTURE"

Day 2: Sustainable Development Field Tour (Friday, 25 April 2025)

Time	Agenda/Contents
By 9 AM By 1 PM	Arriving at the Conference Venue (At Courtyard by Marriott Phuket Town, Phuket)
19.00 – 21.00	Participants may select one of the following field tour options through QR Code. (Maximum 30 participants per tour; first come, first served). ▪ (1) Morning (Departing 9AM) or (2) Afternoon (Departing 1PM) 🌿 **A Journey into Southern Thai Village Life: Tour Highlights** • **Warm Welcome –** Begin your adventure with a refreshing glass of pineapple tea and tasty local snacks as you're introduced to the heart of the community. • **Pineapple Farm Stroll –** Wander through lush pineapple fields and uncover the secrets of local farming life while sipping on freshly pressed pineapple juice and sampling juicy slices straight from the source. • **Rubber Plantation Experience –** Step into the world of rubber farming. Watch a live demonstration of rubber tapping and traditional sheet-making —a unique glimpse into one of Thailand's key agricultural practices. • **Coconut Plantation & Thai Dessert Workshop –** Try your hand at grating coconuts and making Khanom Kho, a beloved traditional Thai treat. Cool down with naturally sweet coconut water served under the shade of the trees. • **Farewell from the Community –** Depart with unforgettable memories, new cultural insights, and maybe even a few pineapple-scented stories to share.

Important Notes

1.Thank you for joining and contributing to the 2nd ICASD 2025.
Your participation makes this event meaningful and impactful.

2.Oral Presentations

- Some articles have been shifted to different sessions to ensure a smooth and coherent schedule. We appreciate your kind understanding.
- oEach presenter is allotted **15–20 minutes,** including time for questions and reflections.
- oPlease use **PDF files** for your presentations and submit them to your **session co-chair during lunch time.**

3.Gala Dinner – Dress Code: International Vibes Welcome!

Celebrate cultural diversity by wearing **traditional or national attire** from any country. Let's make the evening colorful, lively, and memorable!

4.Field Tours

For participants who were unable to register for the field tours, **alternative activities** will be provided. Stay tuned for more details.

Oral Presentation

Oral Presentations

Session 1: Room 1 Contents: People

Chair: Assoc.Prof.Dr. Darwina Arshad **Co-chair: Dr. Muhammad Hassan Arshad**

Time	Article no.	Presenter and Research Title
13:00-13:20	25-P1-05	**Invited Speaker:** Assoc. Prof. Dr. Darwina Arshad **Title:** Enhancing Strategic Decision-Making through Ambidextrous Leadership and Environmental Dynamism in Schools
13:20-13:40	25-P1-02	**Presenter:** Aisha Kana Dewanti **Research title:** The Relationship Between Grit and Subjective Well-being among First-year Migrant Students
13:40-14:00	25-P1-03	**Presenter:** Ali Akbar Jalbani **Research title:** Problem-Based Learning Through Environmental News: Enhancing English Proficiency Among University Students in Thailand
14:00-14:20	25-P1-04	**Presenter:** Wasan Kanchanamukda **Research title:** Study of Skills in Using the Express Accounting Software and Learning Behavior Based on Simulated Situations in the Accounting Software Course For Third-Year Undergraduates
14:20-14:40	25-P1-09	**Presenter:** Juang Rudianto Putra **Research title:** A Systematic Review of the Interplay among Three Key Variables in International Students' Academic Success: Support Systems, Adaptation, and Achievement
14:40-14:50		**Refreshment**
14:50-15:10	25-P1-10	**Presenter:** Wassana Makkongka **Research title:** Forecasting Human Resource Skills for New-age Leadership that can use Technology in Educational Management in the Four Southern Border of Provinces of Thailand
15:10-15:30	25-P1-12	**Presenter:** Witawin Siripoonsap **Research title:** Exploring Shifts in Learning Patterns Through Tablet Use among Undergraduate Students in Southern Thailand

Time	Article no.	Presenter and Research Title
15:30-15:50	25-P1-13	**Presenter:** Duenpen Kochakornjarupong **Research title:** Bridging SDGs and Digital Education: A Study on Validated Peer Assessment Models in Higher Education
15:50-16:10	25-P5-07	**Presenter:** Muhammad Hassan Arshad **Research title:** The Impact of Green Market Orientation and Green Entrepreneurial Orientation on the Sustainable Performance of SMEs in Thailand

Session 2: Room 2 Contents: Prosperity

Chair: Assoc.Prof.Dr. Hendrik Bin Lamsali **Co-chair: Md Ahbabur Rahman**

Time	Article no.	Presenter and Research Title
13:00-13:20	25-P5-05	**Invited Speaker:** Assoc Prof Dr Hendrik Bin Lamsali, **Title:** Assessing Service Quality of Last-mile Delivery Services and Custmoer Satisfaction in Malaysian
13:20-13:40	25-P2-01	**Presenter:** Athisa Pankong **Research title:** Guidelines for Developing Learning Activities from Maya Clay to Promote Community Tourism in Ban Na Tham Mueang Yala District, Yala Province
13:40-14:00	25-P2-04	**Presenter:** Wassana Suwanvijit **Research title:** Forecasting International Tourist Arrivals in Phuket, Thailand for 2025-2026 Using Prophet Model
14:00-14:20	25-P2-05	**Presenter:** Wassana Suwanvijit **Research title:** Sustainable Food Tourism Promotion Guidelines in Phuket, Thailand
14:20-14:40	25-P2-07	**Presenter:** Piyada Buakaew **Research title:** Development and Physical Characterization of Blood Sugar Control Tablets Using Piper sarmentosum Leaf Extract and Pomelo Peel Pectin
14:40-14:50		**Refreshment**
14:50-15:10	25-P2-08	**Presenter:** Tanawat Srirugsa **Research title:** Comparison of dried red chili peppers (Capsicum annuum L.) between open sun drying and using a solar dryer
15:10-15:30	25-P2-09	**Presenter:** Md Ahbabur Rahman **Research title:** Service Quality and Customer Satisfaction in The Fast-Food Industry of Malaysia

Session 3: Room 3 Contents: Planet-Group 1

Chair: Assoc.Prof.Dr. Sompong O-Thong **Co-chair: Dr. HyungWoo Lee**

Time	Article no.	Presenter and Research Title
13:00-13:20	25-P3-20	**Invited Speaker:** Assoc.Prof.Dr.Sompong O-Thong **Title:** Biotransformation of CO_2 to Biofuels and Chemicals by Novel Species Clostridium thailandense: Advancing Carbon-Neutral Bioeconomy
13:20-13:40	25-P3-01	**Presenter:** Phuanglek Iamchamnan **Research title:** How Carbon Footprint for Organization Contributes to Sustainable Climate Change Mitigation
13:40-14:00	25-P3-03	**Presenter:** Yotsawat Kanghae **Research title:** Economy on the Horizon of Pollution: When Greenhouse Gases Shape the Future of GDP
14:00-14:20	25-P3-06	**Presenter:** Kun Anantanawat **Research title:** Implementing Circular Economy Concept in Tourism: A case study of Phuket, Thailand
14:20-14:40	25-P3-07	**Presenter:** Pongsak Noparat **Research title:** Innovative Solutions for Waste Bank Development in Khun Thale Subdistrict Mueang District, Surat Thani Province
14:40-14:50		**Refreshment**
14:50-15:10	25-P3-09	**Presenter:** Natarat Kecharananta **Research title:** The Improvement of Satun UNESCO Global Geopark Information System on Nuanurak Platform for Conservation and Sustainable Development
15:10-15:30	25-P3-13	**Presenter:** Edy Kurniawan **Research title:** Optimizing continuous medium-chain fatty acid production from biohydrogenic palm oil mill effluent: Operational parameters and microbial dynamics
15:30-15:50	25-P3-16	**Presenter:** Chonticha Leamdum **Research title:** Microbial Diversity and Dynamics in Traditional Thai Indigo Fermentation Vats: A Next-Generation Sequencing Analysis

Session 4: Room 4 Contents: Planet-Group 2

Chair: Prof.Dr. Yves Gagnon **Co-chair: Abdunfatah Masamae**

Time	Article no.	Presenter and Research Title
13:00-13:20	25-P3-05	**Invited Speaker:** Norhanizan Usaizan **Title:** Determining Soil Suitability for Oil Palm (Elaeis guineensis) Cultivation: A Comprehensive Study of Soil Fertility and Nutrient Dynamics
13:20-13:40	25-P3-08	**Presenter:** Wanphen Buakong **Research title:** Enhancing Rubber Smallholder Livelihoods through Intercropping and Integrated Soil Management: Productivity, Environmental Impact, and Genetic Insights
13:40-14:00	25-P3-10	**Presenter:** Thidarat Juthong **Research title:** Improving Microbial Safety and Economic Outcomes in Community Organic Vegetable Production: A Case Study of Low-Cost Greenhouse Farming in Phatthalung Province, Thailand
14:00-14:20	25-P3-11	**Presenter:** Noppadon Podkumnerd **Research title:** Development of Wood Treatment Processes of Palmyra Palm Fronds for Furniture Production
14:20-14:40	25-P3-12	**Presenter:** Palachai Khaonuan **Research title:** Development and Performance Analysis of an Improved Biomass Stove for Krajood Dyeing: A Sustainable Appropriate Technology Approach
14:40-14:50		**Refreshment**
14:50-15:10	25-P3-14	**Presenter:** Ameena Rakdee **Research title:** Integrated Assessment of Surface Water Quality in Ban Pru Toei Community Forest Using Physical, Chemical, and Biological Parameters
15:10-15:30	25-P3-15	**Presenter:** Sukonkarat Chanthong **Research title:** Optimizing Biohydrogen Production from Palm Oil Mill Effluent: Effects of Initial pH and Acidity in Thermophilic Batch Fermentation
15:30-15:50	25-P3-17	**Presenter:** Supattra In-chan **Research title:** Anaerobic Thermophilic Degradation of Feather Keratin by Microbial Enrichment from TrollC Oil Reservoirs: Characterization of Thermoanaerobacter sp. and Keratinolytic Activity

Session 4: Room 4 Contents: Planet-Group 2

Chair: Prof.Dr. Yves Gagnon **Co-chair: Abdunfatah Masamae**

Time	Article no.	Presenter and Research Title
15:50-16:10	25-P3-19	**Presenter:** Piyabut Yimfaen **Research title:** Reducing GHG Emissions in Frozen Fruit Processing by Solar Optimization and Waste Management Strategies

Session 5: Room 5 Contents: Peace and Partnership

Chair: Asst.Prof.Dr. Aniwat Kaewjamnong **Co-chair: Dr. Yejin Kim**

Time	Article no.	Presenter and Research Title
13:00-13:20	25-P1-11	**Invited Speaker:** Asst.Prof.Dr. Aniwat Kaewjamnong **Title:** Analysis of Factors in the Development of Human and Social Skills of Undergraduate Student with Predictive Power to Promote Small Business Entrepreneurship in 4 Southern Provinces of Thailand
13:20-13:40	25-P4-01	**Presenter:** Duenpen Kochakornjarupong **Research title:** Fostering Peace and Strong Institutions through Happiness Engineering and Meditation: A Case Study of Thaksin University's Sustainable Education Model
13:40-14:00	25-P5-01	**Presenter:** Kanokkul Phetuthai **Research title:** Social Impact Assessment: Limitations and Guidelines for Improvement to Align with the Local Context in Surat Thani Province, Thailand
14:00-14:20	25-P5-02	**Presenter:** Arif Darmawan **Research title:** Assessing the Economic Impact of Indonesia's GDP Growth Under the IA-CEPA Framework: Trade Mobility and Bilateral Relations with Australia to Promote SDGs
14:20-14:40	25-P5-03	**Presenter:** Fazeyha Zirwa Rana **Research title:** Impact of workplace incivility, organizational justice,and job burnout on teacher's dysfunctional turnover intention
14:40-14:50		**Refreshment**
14:50-15:10		
15:10-15:30		
15:30-15:50		
15:50-16:10		
16:10-16:30	25-P5-06	**Presenter:** Yejin Kim **Research title:** Fostering Sustainability in Higher Education: Insights from ASEAN Graduate Students in Thesis-Only Programs in Southern Thailand

Session 6: Online Session Contents: People and Proseperity

Chair: Dr. Muhammad Zulqarain Arshad

Time	Article no.	Presenter and Research Title
13:00-13:20	25-P5-04	**Invited Speaker:** Dr. Muhammad Zulqarain Arshad **Title:** The Impact of Workplace Bullying and Stress on Employee Well-being: The Mediating Role of Stress in the Pakistani Banking Sector
13:20-13:40	25-P1-01	**Presenter:** Ossy Dwi Endah Wulansari **Research title:** Emotion Unleashed: VR Game for Emotional Recognition and Empathy Trai ning
13:40-14:00	25-P1-06	**Presenter:** Sanit Srichookiat **Research title:** Enhancing Statistical Analysis Skills and Teamwork among Undergraduate Students Through Sequential Training
14:00-14:20	25-P2-03	**Presenter:** Jirawan Pithak **Research title:** Segmenting Consumer Preferences for Airport-Proximity Hotels: Insights from BestWorst Scaling and Cluster Analysis
14:20-14:40	25-P1-08	**Presenter:** Nazlina Zakaria **Research title:** Workplace Well-Being in Malaysian Organizations: Does It Contribute in Psychological, Social, and Economic Well-Being of Malaysians?
14:40-14:50		**Refreshment**
14:50-15:10	25-P3-18	**Presenter:** Hafiz Waqas Ahmed Ansari **Research title:** Conceptualizing a model for e-waste recycling management, a perspective of IR 4.0
15:10-15:30	25-P3-04	**Presenter:** Kunthida Chaipram **Research title:** Factors Affecting Wind Power Generation in the United States
15:30-15:50	25-P1-07	**Presenter:** **Research title:** The Development of Learning Outcomes in Research Methodology and Research Design Skills of Third-Year Students Using Research-Based Learning
15:50-16:10	25-P2-06	**Presenter:** **Research title:** Loyalty in Streaming Services: Insights into Consumer Retention Strategies

SESSION PEOPLE

A SYSTEMATIC REVIEW OF THE INTERPLAY AMONG THREE KEY VARIABLES IN INTERNATIONAL STUDENTS' ACADEMIC SUCCESS: SUPPORT SYSTEMS, ADAPTATION, AND ACHIEVEMENT

Juang Rudianto Putra[1*]

[1]Ph.D. in Human and Social Development, Faculty of Liberal Arts, Prince of Songkla University Hatyai; juangputra87@gmail.com

* Correspondence: juangputra87@gmail.com (Juang Rudianto Putra)

Abstract: This paper presents a result of a systematic review exploring the interchange among three key variables in international students' academic success i.e., support systems, academic adaptation, and performance. Transitioning to new educational settings, international students around the globe are usually faced with unique challenges such as unfamiliar academic systems, language barriers, and surely, cultural differences. Support systems (academic, social, and emotional assistance) have been identified as a crucial factor that can help international students adapt to their new academic environments. This review synthesizes empirical studies to examine the contribution of support mechanisms to the academic adaptation process and, finally, to students' academic performance. A comprehensive search of multiple academic databases was carried out to identify related peer-reviewed articles published online. Inclusion and exclusion criteria were applied to screen the articles resulting in 27 related articles to analyze. The data were then systematically extracted and synthesized. Support systems i.e., institution, peer networks, and family, were found to significantly influence the students' adjustment to the academic demands of their host institutions. Tutoring and language assistance were reported to enhance students' confidence and improve their skills. Social support networks assist in mitigating the students' feelings of isolation. Meanwhile, emotional support plays a crucial role in stimulating resilience and fostering mental well-being. This particular review offers a comprehensive understanding of the factors inducing international students' academic success, providing valuable insights not only for educators, and university administrators, but also policymakers.

Keywords: Academic adaptation, Academic performance, Support systems, International students.

WORKPLACE WELL-BEING IN MALAYSIAN ORGANIZATIONS: DOES IT CONTRIBUTE IN PSYCHOLOGICAL, SOCIAL, AND ECONOMIC WELL-BEING OF MALAYSIANS?

Nazlina Zakaria[1*], and Nor Azimah Chew Abdullah[2]

[1]Universiti Utara Malaysia; nazlina@uum.edu.my
[2]Universiti Utara Malaysia; norazimah@uum.edu.my

* Correspondence: nazlina@ uum.edu.my; (Nazlina Zakaria, NZ)

Abstract: Recent reports from the Malaysian Well-Being Index (MyWI) indicate a decrease in key social well-being aspects, including income distribution, housing, public safety, environmental factors, and family dynamics. Although transport, working life, and health were the primary contributors to Malaysia's economic and social well-being, a recent OECD report suggests that the contribution of labor quality to Malaysia's economic growth is inadequate. Consequently, this highlights the need to enhance the quality of labor through skills development and workforce health. This study develops a well-being framework to address this problem. This framework centered on different aspects of workplace well-being and their role in improving the psychological, social, and economic well-being of Malaysians. This research developed subjective indicators for the social and economic well-being components of MyWI to clarify the issue. This study also suggested incorporating a psychological well-being component into MyWI. An online survey was used to collect research data from 437 Malaysians employed across different business sectors. Findings indicate that the well-being of Malaysians varies from average to very good across psychological, social, economic, and occupational areas. Workplace well-being has become a crucial factor in overall well-being. These insights provide crucial support for Malaysian policymakers seeking to achieve the Sustainable Development Goals (SDGs), particularly those related to enhancing health and well-being, encouraging decent work and economic growth, and strengthening institutions. The research findings also offered insights to achieve Malaysia's fourth strategic thrust concerning labor market and employee compensation, together with the fifth strategic thrust related to societal well-being in the Shared Prosperity Vision 2030.

Keywords: Workplace well-being, psychological well-being, social well-being, economic well-being, Malaysia.

THE DEVELOPMENT OF LEARNING OUTCOMES IN RESEARCH METHODOLOGY AND RESEARCH DESIGN SKILLS OF THIRD-YEAR STUDENTS USING RESEARCH-BASED LEARNING

Wilawan Jansri[1*], Prajak ChertChom[2]

[1]Asst.Prof.Dr., Faculty of Economics and Business Administration, Thaksin University;
e-mail@: wilawan@tsu.ac.th
[2]Asst.Prof.Dr., Faculty of Economics and Business Administration, Thaksin University;
e-mail@: Prajak.c@tsu.ac.th

* Correspondence: e-mail@wilawan@tsu.ac.th

Abstract: This research aims to study the learning outcomes of research methodology and research project design skills through research-based learning for third-year students in the Modern Trade and Service Innovation program at the Faculty of Economics and Business Administration, Thaksin University. The study involved 10 regular third-year students enrolled in the Research Methodology and Business Research Practice courses under the Asst. Prof. Dr. Wilawan Jansri in the second semester of the 2023 academic year. The research tools included: 1) a lesson plan for research-based learning activities (4 hours over 16 weeks); 2) an assessment of learning outcomes; and 3) an evaluation of research design skills. The statistical analysis used the mean and standard deviation. Results showed that students' learning outcomes in research methodology were excellent, with an average percentage of 83.31%. Specifically, 60% of students achieved an excellent score, and 40% achieved a good score. Regarding research design skills, the overall skills of the students were rated highly, with a mean score of 4.44 and a standard deviation of 0.55. Most students exhibited high skills in research methodology design.

Keywords: Research-Based Learning, Learning Outcomes, Research Methodology, Research Design Skills

ENHANCING STATISTICAL ANALYSIS SKILLS AND TEAMWORK AMONG UNDERGRADUATE STUDENTS THROUGH SEQUENTIAL TRAINING

Sanit Srichookiat[1*] and Wannaporn Boriphan[2]

[1]Faculty of Economics and Business Administration, Thaksin University; sanit@tsu.ac.th
[2]Faculty of Economics and Business Administration, Thaksin University; bwannaporn@tsu.ac.th

* Correspondence: sanit@tsu.ac.th; (Sanit Srichookiat, Ph.D.)

Abstract: This study aims to enhance statistical analysis skills using SPSS and develop teamwork skills among fourth-year undergraduate students in the Entrepreneurship and Management program, Faculty of Economics and Business Administration. The research employed three out-of-class training sessions, integrating individual skill exercises with blended learning materials and group skill exercises. The training was structured into three weeks: File Preparation and Descriptive Statistics (Week 1), T-test and ANOVA (Week 2), and Multiple Regression Analysis (Week 3). The findings revealed that students demonstrated excellent statistical analysis skills across all three lessons after the training. Regarding teamwork skills, significant improvements were observed in two aspects: Collaborative Planning and Project Contribution. However, no statistically significant improvements were found in three other aspects: Team Environment, Facilitating Team Members, and Conflict Management.

Keywords: Statistical Analysis Skill, Teamwork, Personalized Exercise, Group Exercise, Training

ENHANCING STRATEGIC DECISION-MAKING THROUGH AMBIDEXTROUS LEADERSHIP AND ENVIRONMENTAL DYNAMISM IN SCHOOLS

Darwina Arshad[1*], Muhammad Zulqarnain Arshad[2], Nurul Sharniza Husin[3], Shahrul Niza Said[4], Hanis Sofia Mohd Norzalan[5], Fakhrul Anwar Bin Ishak[6]

[1]School of Business Management, Universiti Utara Malaysia, Malaysia
Institut Aminuddin Baki, Cawangan Utara, Kedah
[2]School of Business Management, Universiti Utara Malaysia, Malaysia
Institut Aminuddin Baki, Cawangan Utara, Kedah
[3]School of Business Management, Universiti Utara Malaysia, Malaysia
Institut Aminuddin Baki, Cawangan Utara, Kedah
[4]School of Business Management, Universiti Utara Malaysia, Malaysia
Institut Aminuddin Baki, Cawangan Utara, Kedah
[5]School of Business Management, Universiti Utara Malaysia, Malaysia
Institut Aminuddin Baki, Cawangan Utara, Kedah
[6]School of Business Management, Universiti Utara Malaysia, Malaysia
Institut Aminuddin Baki, Cawangan Utara, Kedah

*Corresponding author Email: darwina@uum.edu.my

Abstract: In today's rapidly evolving global environment, characterized by volatility, uncertainty, complexity, and ambiguity (VUCA), leaders are required to be not only adaptive but also strategic in their decision-making competency. This environment, especially in the educational sector, places significant pressure on school leaders to navigate and address the shifting challenges that emerge at both macro and micro levels. The need for effective leadership is more pronounced as schools face an array of internal and external pressures ranging from policy shifts to global crises like technological disruptions that can disrupt the traditional educational landscape. This study examines the influence of ambidextrous leadership on strategic decision-making among Malaysian school leaders, with environmental dynamism serving as a moderating factor. Ambidextrous leadership, which balances exploration and exploitation, is proposed as a key driver of strategic decision competency. The study employed a quantitative research design, collecting data from 356 graduates of the NPQEL 2.0 program who currently serve in school leadership roles. Using Partial Least Squares Structural Equation Modeling (PLS-SEM), the findings indicate that ambidextrous leadership positively influences strategic decision-making, and that this relationship is significantly moderated by environmental dynamism. Specifically, in highly dynamic environments, the impact of ambidextrous leadership on strategic decision-making competency becomes more pronounced. These findings underscore the need for leadership development programs to emphasize adaptive leadership styles like ambidextrous leadership, particularly in contexts where environmental change is constant. The study offers valuable insights for educators and policymakers seeking to strengthen school leadership capacity in increasingly unpredictable educational landscapes.

Keywords: Ambidextrous leadership, Environmental dynamism, Strategic decision-making competency, VUCA, Malaysian school

STUDY OF SKILLS IN USING THE EXPRESS ACCOUNTING SOFTWARE AND LEARNING BEHAVIOR BASED ON SIMULATED SITUATIONS IN THE ACCOUNTING SOFTWARE COURSE FOR THIRD-YEAR UNDERGRADUATES

Wasan Kanchanamukda[1], Yongyuth Rattanasuwan[2*], Chotiya Hitapong[3], and Chanticha Buasri[4]

[1]Faculty of Economics and Business Administration, Thaksin University; Wasan@tsu.ac.th
[2]Faculty of Economics and Business Administration, Thaksin University; yongyuth@tsu.ac.th
[3]Faculty of Economics and Business Administration, Thaksin University; chotiya@tsu.ac.th Faculty of
[4]Economics and Business Administration, Thaksin University; chanticha@tsu.ac.th

*Correspondence email :yongyuth@tsu.ac.th

Abstract: This research aims to study the skills in using the Express accounting software through simulation scenarios, comparing the teaching before and after using the simulation scenarios with the skills in using the Express accounting software and the learning behavior in the Express accounting software course. The sample group consists of third-year undergraduates majoring in Accounting, Faculty of Economics and Business Administration, Thaksin University, Semester 2, Academic Year 2024, totaling 75 students, selected by purposive sampling. The statistics used include arithmetic mean, standard deviation, and sample t-test, with a statistical significance level of 0.05. The research findings indicate that 1. Students had a high level of skill in using the Express accounting software before the simulation, and after the simulation, their overall skills increased. 2. Students exhibited excellent learning behavior before using the simulation-based learning and maintained good learning behavior after using the simulation. 3. Students who were taught using simulation scenarios showed no significant difference in their skills in using the Express accounting software before and after the instruction. 4. Learners who studied through simulations showed no significant difference in learning behavior before and after using the simulations, indicating an improvement in teaching with more realistic simulations. Develop content and learning activities to be more realistic by using case studies that closely resemble real-life situations in practice to enhance direct experiences for learners. This approach includes incorporating interactive learning, using techniques such as Problem-Based Learning (PBL) or Case-Based Learning (CBL) alongside simulations.

Keywords: Simulation-based methods, Accounting software, Learning behavior, Express accounting program.

PROBLEM-BASED LEARNING THROUGH ENVIRONMENTAL NEWS: ENHANCING ENGLISH PROFICIENCY AMONG UNIVERSITY STUDENTS IN THAILAND

Ali Akbar Jalbani[1*], Kosiah Jalbani[2]

[1]Foreign Lecturer, Faculty of Education, Prince of Songkla University (PSU) Pattani Campus; ali.j@psu.ac.th
[2]Lecturer, Department of Teaching English, Faculty of Education, Fatoni University; kosiah.jalbani@ftu.ac.th

*Correspondence: ali.j@psu.ac.th; (Ali Akbar Jalbani, Mr.)

Abstract: This study investigates the effects of Problem-Based Learning (PBL) using authentic environmental news on the English proficiency of second-year Political Science students in Thailand. By analyzing flood-related news from Southern Thailand and Malaysia, students engaged in comparative policy discussions and structured writing tasks that integrated real-world climate discourse. A qualitative case study approach, based on data from 19 students' written responses, revealed that PBL enhanced engagement and critical thinking. However, many students required structured scaffolding to transition from descriptive to analytical writing. Challenges included over-reliance on general disaster-related vocabulary, limited use of policy-specific terms, and issues with sentence coherence and academic clarity. The findings highlight the need for structured writing frameworks, targeted vocabulary development, and comparative policy analysis to improve both linguistic proficiency and analytical skills. This study offers practical insights into integrating climate discourse into curricula, preparing students for meaningful contributions to global policy discussions.

Keywords: Problem-Based Learning (PBL), climate discourse, vocabulary acquisition, academic writing, comparative policy analysis, news-based learning

EMOTION UNLEASHED: VR GAME FOR EMOTIONAL RECOGNITION AND EMPATHY TRAINING

Ossy Dwi Endah Wulansari[1*]

*Correspondence email: odew212@gmail.com

Abstract: Empathy is a fundamental interpersonal skill that all people possess and may be developed. Recognizing others' feelings is the first step toward developing empathy skills. Children learn this talent by copying others and prompting similar emotional responses. Nonetheless, children may suffer in social circumstances if they do not know how to express their emotions. Children with high emotional intelligence can describe their feelings and maintain self-control. The study aims to train children's emotional expressions using virtual reality games and technology. The objective of this paper is to investigate how well these games train emotion recognition through facial expressions and behavior. This study includes a single lab experiment with twenty-two young toddlers. Based on the findings of beta testing (pre-test and post-test), this game successfully introduced human behavioral expressions to toddlers. UAT testing yielded a 92.15% score for system utilization by players. The results showed a significant improvement in recognition of emotional behavior.

Keywords: Empathy, Emotional intelligence, Virtual reality, Games

THE RELATIONSHIP BETWEEN GRIT AND SUBJECTIVE WELL-BEING AMONG FIRST-YEAR MIGRANT STUDENTS

Aisha Kana Dewanti,[1*] Ratna Syifa'a Rachmahana S.Psi., M.Si., Psi.[2]

[1] Department of Psychology, Islamic University of Indonesia ; 21320064@students.uii.ac.id
[2] Department of Psychology, Islamic University of Indonesia ; ratna.syifaa@uii.ac.id

*Correspondence: 21320064@students.uii.ac.id; (A.K.D)

Abstract: This study aims to examine the relationship between grit and subjective well-being among first-year migrant students. The hypothesis of this study suggests a positive correlation, meaning that the higher a student's level of grit, the higher their subjective well-being, and vice versa.This study employs data collection techniques using the Grit Scale, FS, and SPANE. A quantitative method is used to analyze the correlation between the two variables. The population consists of 261 first-year migrant students in the Psychology program at the Islamic University of Indonesia, class of 2024. The sample includes the entire population. Data analysis was conducted using the Product Moment (Spearman Correlation) method, yielding a correlation coefficient of 0.642 and a significance value of $p < .001$. Thus, the research hypothesis is supported. Additionally, the findings indicate that the majority of first-year migrant students have moderate levels of both grit and subjective well-being.

Keywords: Grit, Subjective well-being, Migrant students

FORECASTING HUMAN RESOURCE SKILLS FOR NEW-AGE LEADERSHIP THAT CAN USE TECHNOLOGY IN EDUCATIONAL MANAGEMENT IN THE FOUR SOUTHERN BORDER OF PROVINCES OF THAILAND

Aniwat Kaewjomnong[1*] and Wassana Makkongka[2]

[1]Faculty of Economics and Business Administration, Thaksin University; anthonythai8@hotmail.com
[2]Faculty of Economics and Business Administration, Thaksin University; wassana.m@tsu.ac.th

*Correspondence: anthonythai8@hotmail.com

Abstract: This research aims to study the skills of personnel that influence new era leadership in educational institutions in 4 southern border provinces of Thailand and to predict personnel skills for new era leadership that can use technology in educational management. This is a quantitative research under the action research paradigm. The sample group is personnel working in educational institutions in 4 southern border provinces. The sample size is 400 people, using simple random sampling. The research instrument is a questionnaire with an overall reliability of .95. Basic statistical analysis was performed using ready-made programs statistical data analysis included correlation coefficient, normal multiple regression analysis and stepwise multiple regression anysis. The research results found that the skills of personnel that influence new-era leadership in educational institutions in the southern region of Thailand include analytical thinking and creativity, decision-making and problem-solving, communication, organizational management, personnel management, teamwork, learning and awareness, and achievement orientation. For the prediction of personnel skills towards new era leadership that can use technology in educational management with statistical significance at the .01 level there are 3 skills: achievement orientation, analytical and creative thinking and teamwork.

Keywords: Forecasting Human Resource Skills, New-age Leadership, Technology in Educational Management, Four Southern Border of Provinces of Thailand

ANALYSIS OF FACTORS IN THE DEVELOPMENT OF HUMAN AND SOCIAL SKILLS OF UNDERGRADUATE STUDENT WITH PREDICTIVE POWER TO PROMOTE SMALL BUSINESS ENTREPRENEURSHIP IN 4 SOUTHERN PROVINCES OF THAILAND

Aniwat Kaewjomnong,[1*] Sirichan Phugdee[2]

[1]Lecturer of Master of Business Administration Program, Faculty of Economics and Business Administration, Thaksin University
[2]Staff of the Office of the Faculty of Economics and Business Administration, Thaksin University

*Correspondence: anthonythai8@hotmail.com

Abstract: This research aims to analyze the factors of developing human and social skills of undergraduate students to become small business entrepreneurs in Thailand and analysis of the factors of human and social skills development of undergraduate students has the power to predict the support towards becoming small business entrepreneurs in Thailand. It is a quantitative research. The sample group was personnel working at universities in group 2 in the lower southern region of Thailand. The sample size was 400 people, using simple random sampling. The research instrument was questionnaire with an overall reliability value of .95. Data were analyzed using ready-made programs. Statistic used for data analysis included mean, standard deviation, correlation coefficient, and stepwise multiple regression analysis. The results of data analysis found that factors in the development of human and social skills of undergraduate students towards becoming small business entrepreneurs consisted of 5 skills: thinking skills, working with others skills, leadership skills, asking and listening skills, and supervision skills. For the skills that have the power to predict the support towards becoming a small business entrepreneur in Thailand at the statistical significance level of .01, there are 4 skills: asking and listening skills, thinking skills, supervisory skills, and working with others skills.

Keywords: Soft Skills, Undergraduate Students, Small Business Entrepreneurs

EXPLORING SHIFTS IN LEARNING PATTERNS THROUGH TABLET USE AMONG UNDERGRADUATE STUDENTS IN SOUTHERN THAILAND

Witawin Siripoonsap[1], Yejin Kim[2*] and Muhammad Hassan Arshad[3]

[1]Education in English, International College, Thaksin University; witawin.s@tsu.ac.th
[2]Sustainable Development, International College, Thaksin University; ye.k@tsu.ac.th
[3]Business Administration, International College, Thaksin University; muhammad.a@tsu.ac.th

*Correspondence: ye.k@tsu.ac.th

Abstract: This study investigates the evolving learning patterns among undergraduate students in Southern Thailand, driven by the widespread adoption of tablet-based educational tools. A focus group interview was conducted with five key informants (Mage = 19.8) from a single university, lasting approximately one and a half hours. Using a semi-structured questionnaire, qualitative data were collected and analyzed through content analysis, which revealed four key themes: (1) usage of tablets, (2) application preference, (3) learning patterns for two main purposes, and (4) skill development strategies. The findings indicate that tablets—particularly iPads—have become central to students' learning experiences, fostering a shift toward self-directed, hybrid, and AI-enhanced learning, often supported by free applications and peer observation. However, the absence of structured training and ethical guidance on emerging technologies, such as AI, combined with concerns about affordability and digital inequality, highlights the need for institutional measures, including digital literacy workshops and equitable access initiatives. The study concludes with limitations and recommendations for future research.

Keywords: learning patterns, Ipad, undergraduate students, Southern Thailand

BRIDGING SDGS AND DIGITAL EDUCATION: A STUDY ON VALIDATED PEER ASSESSMENT MODELS IN HIGHER EDUCATION

Duenpen Kochakornjarupong[1*]

[1]Department of Computer Science and Information, Faculty of Science and Digital Innovation, Thaksin University, Phatthalung Campus, Thailand; duenpen@tsu.ac.th

*Correspondence: duenpen@tsu.ac.th; (Asst.Prof.Dr. Duenpen Kochakornjarupong)

Abstract: This study investigates the effectiveness of participatory peer assessment in enhancing digital literacy skills among university students. The research employed a mixed-methods design involving 67 students from Physical Education and General Science programs over 15 weeks. Participants completed nine digitally-mediated collaborative tasks (e.g., Google Sites, Canva infographics) with integrated peer evaluations. The assessment instruments were validated by experts from three fields (Information Technology, Educational Measurement, and Curriculum & Instruction), yielding high reliability (mean = 4.39 on a 5-point scale). Quantitative analysis using complex number modeling (a+bi) demonstrated strong learning outcomes (a = 0.89-0.98) and positive engagement (b = 0.11-0.42). Qualitative sentiment analysis of open-ended feedback revealed enhanced critical thinking and collaborative skills. The findings support SDGs 4 (Quality Education) and 8 (Decent Work), highlighting how technology-enhanced peer assessment can promote sustainable learning. While results show promise, discipline-specific variations suggest need for further adaptation across academic domains.

Keywords: digital literacy, peer assessment, expert validation, sustainable learning, technology-enhanced education

SESSION PROSPERITY

GUIDELINES FOR DEVELOPING LEARNING ACTIVITIES FROM MAYA CLAY TO PROMOTE COMMUNITY TOURISM IN BAN NA THAM MUEANG YALA DISTRICT, YALA PROVINCE

Athisa Pankong[1*], Punya Tepsing[2]

[1]Faculty of Liberal Arts, Prince of Songkla University, Thailand
[2]Assoc. Professor, Faculty of Liberal Arts, Prince of Songkla University, Thailand

*Correspondence : athisa.rra@gmail.com

Abstract: Learning from Maya clay is one of the activities of the "Si Maya" tie-dye community enterprise group that aims to promote tourists' appreciation of Maya clay products and generate income for residents of Ban Na Tham area. This development is based on local wisdom and maximizes the use of local resources. This research aimed to study guidelines for developing learning activities from Maya clay to promote community tourism in Ban Na Tham, Mueang Yala District, Yala Province. Using learning management as the main conceptual framework, it emphasized developing learning processes through hands-on practice and community participation in promoting community tourism. The study employed qualitative research methodology, gathering data from documents and research related to community learning activity development, as well as field data collection through observation and in-depth interviews with 84 purposively selected key informants, including 19 residents of Ban Na Tham, 65 non-local participants comprising 60 tourists and 5 experts. The data was then analyzed using descriptive analysis. The study found that guidelines for developing Maya clay learning activities can be implemented by increasing the variety of learning activities and creating concrete tourist participation. This is achieved by emphasizing hands-on tourist participation through various workshops, such as learning from Maya clay storytelling, incorporating community history into fabric pattern designs, paintwork, and creating self-made souvenirs from Maya clay, to build the community's creative tourism potential sustainably.

Keywords: Learning activity development, Tourism promotion, Maya clay

SEGMENTING CONSUMER PREFERENCES FOR AIRPORT-PROXIMITY HOTELS: INSIGHTS FROM BEST-WORST SCALING AND CLUSTER ANALYSIS

Jirawan Pithak[1], Sanit Srichookiat[2*], Phattaraporn kongsri[3], Phonnaphas Phanitkamon[4], Apinan Aueaungkul[5]

[1]Faculty of Economics and Business Administration, Thaksin University; jirawanpitha@gmail.com
[2]Faculty of Economics and Business Administration, Thaksin University; sanit@tsu.ac.th
[3]Faculty of Economics and Business Administration, Thaksin University; phattaraporn11010@gmail.com
[4]Faculty of Economics and Business Administration, Thaksin University; min.tjmm@gmail.com
[5]Faculty of Economics and Business Administration, Thaksin University; apinan.a@tsu.ac.th

*Correspondence: sanit@tsu.ac.th; (Sanit Srichookiat)

Abstract: This research aims to investigate the factors that consumers prioritize when selecting airport-proximity hotel services. The study employs a mixed-methods approach, specifically an Exploratory Sequential Research Design, divided into two main phases. First, qualitative research was conducted through in-depth interviews with 13 guests staying at hotels near Hat Yai Airport to identify the reasons for choosing airport-proximity accommodations, yielding 13 key factors. Second, quantitative research utilized these factors to develop a questionnaire designed for analysis using the Best-Worst Scaling technique, which was administered to 340 guests at hotels near Hat Yai Airport. The analysis revealed that the top five factors influencing consumers' selection of airport-proximity hotels were high-quality rooms and in-room equipment, good service from staff, comprehensive amenities, reasonable pricing, and fast service processes. Further in-depth analysis using Cluster Analysis identified two distinct consumer groups: leisure travelers and business travelers. Leisure travelers prioritized high-quality rooms and in-room equipment, good service from staff, and comprehensive amenities, whereas business travelers emphasized proximity to business tasks near the airport, the necessity of onward travel the following day, and airport transfer services provided by the hotel. The findings of this research offer significant practical implications for the management of airport-proximity hotels, highlighting that such hotels can effectively cater to two distinct market segments with differing preferences compared to hotels located farther from the airport.

Keywords: Airport-proximity hotels, Consumer preferences, Best-Worst Scaling, Cluster Analysis

FORECASTING INTERNATIONAL TOURIST ARRIVALS IN PHUKET, THAILAND FOR 2025-2026 USING PROPHET MODEL

Wassana Suwanvijit[1*]

[1]Asst. Prof. Dr., Sustainable Development PhD Program, International College, Thaksin University

*Correspondence: wassana@tsu.ac.th

Abstract: This research applies the Prophet Model to forecast the number of international tourist arrivals in Phuket, Thailand, for the years 2025-2026. The study utilizes historical tourist arrival data from Phuket between 2022 and 2024, sourced from the Ministry of Tourism & Sports (online), along with seasonal data and annual public holidays in the area. The results show that the Prophet Model yields lower forecasting errors compared to commonly used models for tourist arrival predictions, such as ARIMA, ETS, Holt-Winters, and TBATS. The forecasted data provides valuable insights for tourism planning and development at both national and local levels.

Keywords: Forecast, International tourist arrivals, Prophet Model, Phuket

SUSTAINABLE FOOD TOURISM PROMOTION GUIDELINES IN PHUKET, THAILAND

Wassana Suwanvijit[1*]

[1]Asst. Prof. Dr., Sustainable Development PhD Program, International College, Thaksin University

*Correspondence: wassana@tsu.ac.th

Abstract: This study aims to explore the potential and propose guidelines for promoting sustainable food tourism in Phuket, Thailand. A qualitative research approach was employed, with the sample consisting of 8 food tourism business operators and 4 experts in Phuket. In-depth interviews and content analysis were conducted. The findings indicate that Phuket has the potential to develop a sustainable food tourism industry. Experts suggested promoting the preservation of local food recipes, utilizing local ingredients, and improving infrastructure for easier access to tourist attractions. Additionally, online marketing strategies and food festivals should be used to promote local cuisine. Based on the findings, the researcher proposes three main strategies for promoting sustainable food tourism in Phuket: (1) Growth of the tourism industry, focusing on developing tourist destinations and activities related to local food; (2) Environmental preservation through sustainable use of natural resources, such as local ingredients and renewable energy; (3) Enhancement of local community livelihoods through training and skill development in service and local food preparation to strengthen the economy sustainably.

Keywords: Sustainable food tourism, Phuket, Local cuisine, Community involvement

LOYALTY IN STREAMING SERVICES: INSIGHTS INTO CONSUMER RETENTION STRATEGIES

Phurichaya Inthakun[1], Thanatchaporn Damjui,[2] and Jiraporn Kongrode[3*]

[1]Bachelor Student, Faculty of Economics and Business Administration, Thaksin University; 641071261@tsu.ac.th
[2]Bachelor Student, Faculty of Economics and Business Administration, Thaksin University;641071242@tsu.ac.th
[3]Lecturer, Faculty of Economics and Business Administration, Thaksin University; kjiraporn@tsu.ac.th

*Correspondence: kjiraporn@tsu.ac.th

Abstract: This research aims to study the impact of electronic service quality and price fairness on customer loyalty in the context of streaming services in Thailand. A quantitative research approach was employed, with the population consisting of members of a streaming service company who have maintained their membership for the past six months, although the exact number of members was unknown. The sample included 385 individuals who had been active members for the same duration. The research instrument used was a questionnaire distributed through social media, and purposive sampling was applied. The statistical methods applied in the study included frequency distribution, percentage, mean, standard deviation, and statistical analysis techniques such as simple regression and multiple regression analysis.The results of the study revealed that 1) the electronic service quality significantly impacts the loyalty of streaming service users at a statistical significance level of 0.05. Among the various aspects of electronic service quality, system availability showed the highest average impact on loyalty, followed by goal achievement, usability efficiency, and privacy. 2) Price fairness also significantly influences the loyalty of streaming service users at a statistical significance level of 0.05. The highest impact was found in the perceived reasonableness of service fees compared to those of other providers, followed by value for money, appropriateness of service fees in relation to the received services, and the suitability of service fees concerning current economic conditions. These findings emphasize the importance of both service quality and pricing fairness in maintaining customer loyalty.

Keywords: Electronic service quality; Fairness of pricing; Loyalty

DEVELOPMENT AND PHYSICAL CHARACTERIZATION OF BLOOD SUGAR CONTROL TABLETS USING PIPER SARMENTOSUM LEAF EXTRACT AND POMELO PEEL PECTIN

Piyada Buakaew,[1] Chunyanuch Boonsong,[2] Nantharat Phruksaphithak[3*]

[1]Scientific Classroom in the University-Affiliated School Project, Faculty of Science, Thaksin University, Phatthalung, Thailand; 14913@tsu.ac.th
[2]Department of Chemistry, Faculty of Science and Digital Innovation, Thaksin University, Phatthalung 93210, Thailand
[3]Center of Excellence for Agricultural Innovation and Bioproducts of Thaksin University, Phatthalung 93210, Thailand

*Correspondence: nantharat@tsu.ac.th

Abstract: Diabetes is a chronic disease characterized by hyperglycemia. While Metformin and Glibenclamide are commonly prescribed medications, they have limitations and side effects. This study aims to develop a blood glucose-lowering tablet using Piper sarmentosum leaf extract as the active ingredient and pomelo peel pectin as a natural binder. The research investigated the physicochemical properties of pectin and optimized tablet formulations through 4 different compositions (PS1-PS4), varying Piper sarmentosum leaf extract (0.1-0.4 ml) while maintaining pectin content (300 mg) at a total tablet weight of 360 mg. Physical characterization revealed tablet diameters ranging from 11.94 ± 0.04 to 12.29 ± 0.04 mm and thicknesses from 2.91 ± 0.04 to 3.19 ± 0.17 mm. Tablets must have a friability of no more than 1. PS1 exceeded the limit, with a friability of 3.29%. All other samples met the standard. The moisture content of herbal medicine must not exceed 3.5%. PS1, PS2, and PS3 had moisture levels within the acceptable range of 0–3.46% ± 0.03%, while PS4 exceeded the limit with a moisture content of 8.53% ± 0.11%. Color gradation corresponded to extract concentration. All formulations were found to release the drug within 6 hours, as confirmed through controlled experimental studies using UV-Visible spectrophotometer. The formulated tablets demonstrate potential as an alternative diabetes management option, possibly offering reduced side effects. However, a comprehensive safety and efficacy study is required before clinical implementation.

Keywords: Diabetes; Pectin; Pomelo Peel; Piper sarmentosum Leaf; Blood Sugar Control Tablets

COMPARISON OF DRIED RED CHILI PEPPERS (CAPSICUM ANNUUM L.) BETWEEN OPEN SUN DRYING AND USING A SOLAR DRYER

Tawat Chuchit[1], Supachai Kaewpoung[2], Wiwat Su-hren[3], Arnon Isaramongkolrak[4] and Tanawat Srirugsa[5*]

[1]Department of Electrical Engineering, Faculty of Engineering, Thaksin University, Phatthalung 93210, Thailand
[2]Department of Electrical Engineering, Faculty of Engineering, Thaksin University, Phatthalung 93210, Thailand
[3]Department of Electrical Engineering, Faculty of Engineering, Thaksin University, Phatthalung 93210, Thailand
[4]Department of Electrical Engineering, Science and Technology, Nakhon Pathom Rajabhat University, Nakhon Pathom 73000, Thailand
[5]Department of Mechanical Engineering, Faculty of Engineering, Thaksin University, Phatthalung 93210, Thailand

*Correspondence: tanawat.s@tsu.ac.th; (T. Srirugsa)

Abstract: This research is a comparative study on the drying of Jinda red chili peppers under three different conditions: open sun drying (OSD), conventional solar drying (SD), and ventilated solar drying (VSD), aiming to achieve a final moisture content not exceeding 13.5%, by production standards. The fresh chili peppers used in the experiment had an initial moisture content of approximately 80.2% (wet basis). The drying times recorded for OSD, SD, and VSD were 48, 34, and 20 hours, respectively, indicating that the VSD method was the most efficient. The VSD condition provided the highest drying rate, allowing complete drying within two days. This efficiency is attributed to the higher temperatures achieved in solar drying compared to OSD, and the use of a ventilation fan, which accelerates moisture removal from the drying chamber. Although the fan reduces the temperature slightly, it remains higher than that in the OSD condition. The results suggest that while solar dryers, particularly the VSD, require greater initial investment, they offer significant advantages in terms of reduced drying time, improved product quality, minimized contamination risk, and lower labor requirements, resulting in a potentially quick return on investment.

Keywords: Jinda red chili peppers, sun drying, solar drying, drying rate

SERVICE QUALITY AND CUSTOMER SATISFACTION IN THE FAST-FOOD INDUSTRY OF MALAYSIA

Md Ahbabur Rahman[1*], Muhammad Hassan Arshad[2], A.S.A. Ferdous Alam[3]

[1]International College, Thaksin University, Songkhla 90000, Thailand
E-mail: ahbabur.r@tsu.ac.th
[2]International College, Thaksin University, Songkhla 90000, Thailand
E-mail: muhammad.a@tsu.ac.th
[3]School of International Studies, Universiti Utara Malaysia, 06010 UUM Sintok, Kedah, Malaysia,
Email: ferdous@uum.edu.my

*Correspondence: ahbabur.r@tsu.ac.th

Abstract: The purpose of the study is to investigate service quality and its impact customer satisfaction in fast food industry in Malaysia. The independent variables which are used in this study: Tangibility, Reliability, Accessibility, Responsiveness and Empathy. The only one dependent factor for this research is Customer satisfaction. In this research the respondent was 170 in number whereas the descriptive analysis and regression method have been adopted. Moreover, the Likert scale of 5 has been adopted. The researchers have gained from the research Tangibility and Accessibility are emphatically connected with customer satisfaction while Reliability and Responsiveness are negative insignificant. Meanwhile, Empathy has a positive but insignificant relationship. However, Tangibility and Accessibility have a positive huge effect on customer satisfaction. Yet, Reliability and Responsiveness have negative and insignificant impact on customer satisfaction in the food shops of Malaysia. Furthermore, Recovery, Customer loyalty and Perceived value may be considered for the future study.

Keywords: service quality, customer satisfaction, Fast-food Industry

SESSION PLANET

HOW CARBON FOOTPRINT FOR ORGANIZATION CONTRIBUTES TO SUSTAINABLE CLIMATE CHANGE MITIGATION

Phuanglek Iamchamnan[1*], Somkiat Saithanoo[2], Thaweesak Putsukee[3], Sompop Intasuwan[4]

[1]Ph.D. Student, Sustainable Development Program, International college, Thaksin University
[2]Advisor, Associate Professor Dr. Thaksin University; ssaithanoo@yahoo.com"
[3]Co-Advisor, Dr. Thaksin University; puthaweesak@tsu.ac.th
[4]Co-Advisor, Assistant Professor Dr. Thaksin University; sompop@tsu.ac.th

*Correspondence: phuanglek@pfp-pacific.com

Abstract: Carbon Footprint for Organization is a critical tool for evaluating the greenhouse gases emission generated by operational activities. The calculation includes seven types of GHGs: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF6), and nitrogen trifluoride (NF3). These gases contribute significantly to global warming, making it imperative to identify strategies to reduce emissions. Carbon Footprint for Organizational assessments encompass three scopes: Scope 1, direct emissions from an organization's operations, Scope 2, indirect emissions from energy consumption, and Scope 3, other indirect emissions. The results are reported in tons of carbon dioxide equivalent (CO2eq), with variations in emission levels depending on each organization's activities. The assessment identifies the emission contributions of various activities, allowing organizations to develop accurate and targeted measures to reduce emissions. It is therefore essential for all organizations to understand and prepare for the carbon footprint assessment process. Mitigation strategies require collaboration among governments, businesses, and the public, as all sectors play crucial roles in achieving sustainable greenhouse gas reductions.

Keywords: Carbon Footprint for Organization, Greenhouse gases, Global warming

IMPLEMENTING CIRCULAR ECONOMY CONCEPT IN TOURISM: A CASE STUDY OF PHUKET, THAILAND

Kun Anantanawat [1*], Chantinee Boonchai [2]

[1] Faculty of Technoloy and Environment, Prince of Songkla University Phuket Campus; kun.anantanawat2021@gmail.com
[2] Faculty of Technoloy and Environment, Prince of Songkla University Phuket Campus; chantinee.b@phuket.psu.ac.th

*Correspondence: chantinee.b@phuket.psu.ac.th; (C.B.)

Abstract: This research explores strategies for applying the Circular Economy (CE) concept in tourism sector using Phuket province in Thailand as a case study. It applied 7R framework (Reduce, Reuse, Recycle, Refurbish/Repair/Remanufacture, Redesign, Replace, Rethink) and a Delphi technique involving 33 experts in data collection. The study identifies seven approaches with high implementation potential in Phuket tourism sector. These approaches are (1) digital technology to monitor waste, (2) minimising food and beverage waste, (3) creating new products from recycled materials, (4) installing water-recycling systems, (5) promoting eco-friendly packaging, (6) deploying electric buses, and (7) adopting electric trams. These measures highlight strategic actions for transitioning Phuket's tourism into a circular tourism destination which aims at utilizing digital solutions to reduce resource consumption, waste and greenhouse gas. The research reveals key enabling factors of implementing CE in Phuket tourism as the understanding of the concept, high public environmental awareness, supportive policies and budget, improvement in public transport and recycling infrastructure and a strong institution for mobilizing and monitoring CE initiatives. Strong collaboration among government agencies, private sector, and local communities is seen as a vital foundation for mobilizing CE at the operational level.

Keywords: Circular economy, Sustainable tourism, Phuket, 7R, Environmental management

ECONOMY ON THE HORIZON OF POLLUTION: WHEN GREENHOUSE GASES SHAPE THE FUTURE OF GDP

Yotsawat Kanghae[1] and Thanawit Bunsit[2*]

[1]Economics undergraduate student, Faculty of Economics and Business Administration, Thaksin University.
[2]Lecturer in Economics, Faculty of Economics and Business Administration, Thaksin University.

*Correspondence: thanawit.b@tsu.ac.th

Abstract: This article explores the relationship between carbon dioxide emissions and Gross Domestic Product (GDP), with the aim of examining the factors that influence CO2 emissions and testing the Environmental Kuznets Curve (EKC) theory. It analyzes the impact of GDP on carbon dioxide emissions to offer insights into the development of environmental infrastructure and the use of data for sustainable economic growth. Additionally, the study provides recommendations for policy development to help reduce pollution from production and energy consumption, seeking to balance economic progress with long-term environmental sustainability. The research employs multiple regression analysis using cross-sectional data from the World Bank's 2023 database, focusing on a sample of 30 countries worldwide. The findings reveal that the ten countries with the highest carbon dioxide emissions are China, the United States, India, Japan, Indonesia, Mexico, Australia, Vietnam, Italy, and Poland. The study also identifies key factors influencing carbon dioxide emissions, including population size, population growth rate, population density, the Human Development Index, air quality, foreign direct investment, and export volume, all of which have a statistically significant impact at the 0.05 level. Additionally, testing the Environmental Kuznets Curve (EKC) theory shows that GDP has a statistically significant effect on carbon dioxide emissions at the 0.01 level.

Keywords: Carbon dioxide emissions, Environmental Kuznets curve, Economic growth, Sustainable economic development

FACTORS AFFECTING WIND POWER GENERATION IN THE UNITED STATES

Kunthida Chaipram[1] and Thanawit Bunsit[2*]

[1]Economics undergraduate student, Faculty of Economics and Business Administration, Thaksin University.
[2]Lecturer in Economics, Faculty of Economics and Business Administration, Thaksin University.

*Correspondence: thanawit.b@tsu.ac.th

Abstract: This study aims to analyze the factors influencing wind power generation in the United States, focusing on its operation and electricity consumption over the past two decades. Wind energy has become a key renewable energy source in the power system. The study examines the relationship between electricity generation, investment (INV), and the production tax credit (PTC) to assess their impact on wind power production. While policy incentives play a significant role in wind power generation, their effectiveness varies based on regional electricity prices and other potential benefits.The findings indicated that electricity generation and the integration of wind energy into the power sector offered economic advantages, particularly in terms of job creation and rural community development. Moreover, government policies, such as the Production Tax Credit and renewable energy promotion targets, have stimulated investment and growth in the wind energy industry. However, challenges remain, particularly in grid connectivity and the variability of wind power generation. Technological advancements to enhance wind energy efficiency, along with policies that support the integration of renewable energy into the power grid, are crucial for improving the efficiency and sustainability of the U.S. energy system.

Keywords: Wind energy, Electricity generation, Electricity consumption volume, USA

DETERMINING SOIL SUITABILITY FOR OIL PALM (ELAEIS GUINEENSIS) CULTIVATION: A COMPREHENSIVE STUDY OF SOIL FERTILITY AND NUTRIENT DYNAMICS

Norhanizan Usaizan[1*], Ridzwan Che Rus[2], Adibah Mohd Amin[3] and Nita Nur Rezkia[4]

[1]Department of Agricultural Sciences, Faculty of Technical and Vocational, Universiti Pendidikan Sultan Idris 35900 Tanjung Malim, Perak Malaysia; norhanizan@ftv.uu.mypsi.ed;
[2]Department of Agricultural Sciences, Faculty of Technical and Vocational, Universiti Pendidikan Sultan Idris 35900 Tanjung Malim, Perak Malaysia; ridzwan@ftv.upsi.edu.my
[3]Department of Land Management, Faculty of Agriculture, Universiti Putra Malaysia, 43400 Serdang, Selangor Malaysia; adibahamin@upm.edu.my
[4]Agro-industrial Technology Education Study Program, Faculty of Engineering and Industrial Education, Universitas Pendidikan Indonesia, Bandung Indonesia ; nitanurrezkia@upi.edu

*Correspondence: norhanizan@ftv.upsi.edu.my; (N.U)

Abstract: Soil suitability plays a pivotal role in the growth and productivity of oil palm (Elaeis guineensis) plantations. This study aimed to assess the physical and chemical properties of soil and its fertility status in a potential oil palm plantation area at Universiti Pendidikan Sultan Idris (UPSI). A combination of Random Sampling and Composite Sampling was employed to obtain an unbiased representation of soil fertility while considering spatial variability. Ten sampling points were identified, and ten subsamples were collected from each point. Laboratory analysis revealed that the soil was clay-textured with a moderate pH (4.1-5.0), low base saturation (<12%), low cation exchange capacity (CEC), and deficiencies in organic carbon and available phosphorus. These factors led to the classification of the overall soil fertility status as low. The soil's limited nutrient availability, particularly the low organic carbon and phosphorus content, affects its suitability for optimal oil palm cultivation. To improve soil conditions for sustainable oil palm growth, soil amendments focusing on these key nutrients are recommended. Enhancing soil fertility will contribute to improved productivity and long-term sustainability of oil palm plantations

Keywords: Soil fertility, Oil palm cultivation, Nutrient

INNOVATIVE SOLUTIONS FOR WASTE BANK DEVELOPMENT IN KHUN THALE SUBDISTRICT MUEANG DISTRICT, SURAT THANI PROVINCE

Pongsak Noparat[1*], Somprat Wuttijan[2], Nara Phongphanich[3]

[1]Faculty of Humanities and Social Sciences, Suratthani Rajabhat University
[2]Faculty of Science and Technology, Suratthani Rajabhat University
[3]Faculty of Science and Technology, Suratthani Rajabhat University

*Correspondence: pongsak@sru.ac.th

Abstract: The results of the Khun Thale Subdistrict's waste composition survey, it was found that the Khun Thale Subdistrict's waste consists primarily of paper waste (such as cardboard, paper towels, and others), accounting for the highest proportion at 38%. Following that, plastic waste and organic waste make up 30% and 17%, respectively. Meanwhile, flea market waste consists primarily of organic waste, mainly food scraps, vegetables, and fruits, accounting for 73% of the total waste, followed by plastic waste at 19% and paper waste at 6%. There is still inefficient sorting and management of organic Recycling Waste will be taken through a recycling waste bank using the “Recycling Waste to Win Luck with Trash Lucky” scheme, after which they will be sold directly to buying shops for recycling. The recyclable waste implemented by the “Recycling Waste to Win Luck with Trash Lucky” activity for all three phases amounted to a total of 3,434 kilograms. Organic waste from the Khun Thale Subdistrict’s cafeteria is transformed into biogas for cooking. Biogas production has accumulated a total of 2,052 cubic meters of biogas from a total of 42,634 kilograms of organic waste throughout the project. Currently, the Khun Thale Subdistrict has installed a biogas pipeline system that delivers the produced biogas to the food shops at the Khun Thale Subdistrict's cafeteria, enabling them to reduce their expenses on cooking gas. Therefore, the Khun Thale Subdistrict plans to issue a policy requiring food shops to reduce the price of food sold to reduce the cost burden for students.

Keywords: Municipal waste, Sustainable Development Goals, Waste management, Community waste bank

ENHANCING RUBBER SMALLHOLDER LIVELIHOODS THROUGH INTERCROPPING AND INTEGRATED SOIL MANAGEMENT: PRODUCTIVITY, ENVIRONMENTAL IMPACT, AND GENETIC INSIGHTS

Wanphen Buakong[1*], Pluang Suwanmanee[2], Kedsirin Ruttajorn[3], Kasem Assawatreerathanakul[4] and John Espie Leak[5]

[1]International College, Thaksin University, Songkhla 90000, Thailand.
[2]International College, Thaksin University, Songkhla 90000, Thailand.
[3]Faculty of Agro- and Bio-Industry, Thaksin University, Phatthalung 93210, Thailand.
[4]Faculty of Science and Digital Innovation, Thaksin University, Phatthalung 93210, Thailand.
[5]School of Economics and Public Policy, Faculty of the Professions, The University of Adelaide 5005, Australia.

*Corresponding author, e-mail: wanphen@tsu.ac.th

Abstract: Rubber intercropping shows sustainability in enhancing rubber smallholder livelihoods and addressing key agricultural challenges. This study investigated the effects of intercropping systems on productivity, income, and environmental parameters in rubber plantations in the Tamod subdistrict, Phatthalung Province, Thailand. The rubber-timber-fruit-shrub (RTFS) model significantly outperformed monocropping in latex yield, dry rubber content, fruit and shrub yields, and environmental benefits, including lower temperature, higher humidity, and improved soil moisture. Economic analysis showed that RTF (rubber-timber-fruit) and RTFS systems yielded higher net profit, benefit-cost ratio, and return on investment. In addition, in rubber intercrop plantations, there is also a problem with Tapping panel dryness symptoms. This research also examined Tapping Panel Dryness and associated soil nutrient deficiencies, revealing significantly lower Ca and Mg levels in affected trees. Organic fertilizer and micronutrient treatment reduced bark dryness from 77.6% to 13% ($p<0.05$) and improved latex yield. Molecular analysis identified the HbC3H66 gene—containing ANK repeats, Pfk_2/FBPase-2, and zinc finger motifs—as abundant in high-yielding clones (RRIT251, RRIM600). Its expression was induced by ethephon, drought, and NaCl stress, suggesting a role in rubber biosynthesis under stress. Rubber intercropping and integrated soil management enhance productivity, resilience, and sustainability. Scaling adoption requires overcoming barriers such as limited technical knowledge, financial constraints, and the need for policy and extension support.

Keywords: Rubber smallholder, Rubber intercropping, HbC3H66 gene, Tapping Panel Dryness, Soil nutrient deficiencies

THE IMPROVEMENT OF SATUN UNESCO GLOBAL GEOPARK INFORMATION SYSTEM ON NUANURAK PLATFORM FOR CONSERVATION AND SUSTAINABLE DEVELOPMENT

Natarat Kecharananta[1], Nawasapol Kecharananta,[2] and Rinyaphat Kecharananta*

[1]Chiang Mai University Demonstration School 1; amnatapam@gmail.com
[2]Chiang Mai University Demonstration School 2; amnawapeak09@gmail.com

*Correspondence: rinrmutl@gmail.com

Abstract: This project to improve Satun UNESCO Global Geopark Information System onNuanurak platform aims to collect and manage essential data related to Satun Geopark, including geological, biodiversity, and community business information. This data will be gathered and stored in a system capable of displaying it in various formats efficiently, with a focus on ensuring accuracy and completeness through verification and refinement. The project aims to enhance a data system that will make Satun Geopark data easily accessible in Thai, English, and Chinese (in the future). This will support effective analysis and management of Satun UNESCO Global Geopark, including efforts for conservation and sustainable development for the local citizens, businesses, and communities in the area. The project team aim to improve a data system that responds to the recommendations from the first Revalidation assessment from the evaluators, making Satun Geopark data easily accessible in Thai, English, and Chinese (in the future). This will facilitate effective analysis and management of Satun UNESCO Global Geopark and it concerns on conservation and sustainable development in the area. The development process will begin with analyzing and designing a suitable data structure to support the storage of diverse data types and the presentation of this information in various forms, such as spatial, scientific, and cultural data. The system will also be developed with multilingual functionality, starting with Thai, English, to ensure the data is easily accessible to international users from various perspectives.

Keywords: Information System, System Analysis and Design UNESCO Global Geopark

IMPROVING MICROBIAL SAFETY AND ECONOMIC OUTCOMES IN COMMUNITY ORGANIC VEGETABLE PRODUCTION: A CASE STUDY OF LOW-COST GREENHOUSE FARMING IN PHATTHALUNG PROVINCE, THAILAND

Thidarat Juthong[1*], Wanphen Buakong[2] and Nattawit sermsin[3]

[1]Faculty of Agro-and Bio-Industry, Thaksin University, Phatthalung 93210, Thailand ; Thidarat@tsu.ac.th
[2]Faculty of Agro-and Bio-Industry, Thaksin University, Phatthalung 93210, Thailand; wanphen@tsu.ac.th
[3]Faculty of Agro-and Bio-Industry, Thaksin University, Phatthalung 93210, Thailand; ntwss.prime@gmail.com

*Corresponding author, e-mail: Thidarat@tsu.ac.th

Abstract: This participatory action research assessed a community model for organic vegetable production using low-cost greenhouse systems among 20 households in Khok Muang sub-district, Phatthalung Province, Thailand.The study evaluated organic vegetable production efficiency and microbial safety involved two parts of research: 1) evaluating organic vegetable production in low-cost greenhouses and 2) detecting fecal coliform and Escherichia coli (E. coli) contamination in fresh vegetable produce; results demonstrated successful knowledge transfer, with participating households reducing monthly vegetable expenses by 55.6 USD while generating a monthly income of 88.6 USD through the cultivation of seven vegetable types annually. Microbiological analysis revealed Coliform contamination in unwashed vegetables at 4.87, 4.55, and 4.18 log CFU/g for Kale (Brassica oleracea L.), Green Oak Lettuce (Lactuca sativa L.), and Chinese cabbage (Brassica sativa var. crispa L.), respectively, with E. coli detected only in Green Oak Lettuce (1.24 log CFU/g). Post-washing, Coliform levels decreased to 3.71, 3.58, and 3.06 log CFU/g, respectively, with no detectable E. coli. Vinegar (100 ppm) treatment significantly reduced Coliform levels by 35.76%. The community model successfully improved household food security and income while highlighting the importance of proper post-harvest handling practices to meet Thai public health standards for commercialising fresh produce.

Keywords: Low-cost greenhouse system, Organic vegetables, Post-harvest safety, Coliform bacteria, Escherichia coli

DEVELOPMENT OF WOOD TREATMENT PROCESSES OF PALMYRA PALM FRONDS FOR FURNITURE PRODUCTION

Noppadon Podkumnerd[1*], Supranee Wunsri[2], Kosin Teeparuksapun[3], Nuntachai Chusilp[4], MahamasuhaimeeMashae[5], and Palachai Khaonuan[6]

[1]Faculty of Liberal Arts, Rajamangala University of Technology Srivijaya, Songkhla, 90000, Thailand.; Noppadon.p@rmutsv.ac.th
[2]Faculty of Liberal Arts, Rajamangala University of Technology Srivijaya, Songkhla, 90000, Thailand.; Supranee.w@rmutsv.ac.th
[3]Faculty of Liberal Arts, Rajamangala University of Technology Srivijaya, Songkhla, 90000, Thailand.; Kosin.t@rmutsv.ac.th
[4]Faculty of Engineering, Rajamangala University of Technology Srivijaya, Songkhla, 90000, Thailand.; Nuntachai.c@rmutsv.ac.th
[5]Faculty of Engineering, Rajamangala University of Technology Srivijaya, Songkhla, 90000, Thailand.; Mahamasuhaimee.m@rmutsv.ac.th
[6]Faculty of Liberal Arts, Rajamangala University of Technology Srivijaya, Songkhla, 90000, Thailand.; Palachai.k@rmutsv.ac.th

*Correspondence: Noppadon.p@rmutsv.ac.th

Abstract: This study investigated the potential of Palmyra palm frond wood as an alternative material for furniture production through preservation treatments. Analysis revealed palm frond composition of 74.94±2.05% moisture, 30.61±17.67% cellulose, 23.54±1.00% hemicellulose, and 45.36±0.55% lignin. Specimens (2.5×2.5 cm) were treated with either boron compounds (boric acid:borax 1:1.5) or wood vinegar at concentrations of 1%, 3%, and 5%, then tested for fungal resistance, termite resistance, and mechanical properties. The 3% boron compound treatment demonstrated superior performance, with a 55.62±1.96% absorption rate after 6 days, significantly higher than wood vinegar (46.91±1.58%). Termite resistance testing revealed weight loss of only 5.83±0.17% for 3% boron-treated samples compared to 11.21±0.35% for wood vinegar and 23.90±1.40% for untreated controls after 45 days. Mechanical testing showed enhanced properties for boron-treated specimens with flexural strength of 3,487.60±448.75 N/mm² versus 2,785.24±110.88 N/mm² for controls. Color stability remained acceptable with L-values decreasing from 68.60±0.53 to 59.30±0.44 after three months. Microscopic examination confirmed preservative penetration into the cellular structure. The optimized 3% boron compound treatment provides an economically viable and environmentally sustainable solution for utilizing abundant Palmyra palm resources in southern Thailand, creating durable furniture components while reducing pressure on endangered hardwood species.

Keywords: Palmyra palm wood, wood preservation, boron compounds, termite resistance, sustainable furniture

DEVELOPMENT AND PERFORMANCE ANALYSIS OF AN IMPROVED BIOMASS STOVE FOR KRAJOOD DYEING: A SUSTAINABLE APPROPRIATE TECHNOLOGY APPROACH

Palachai Khaonuan[1], Noppadon Podkumnerd[2*], Tidaporn Ruangroengkulrit[3], Jirapat Phookwantong[4], Worawit Sriwittayakul[5], Phattharapha Joypod[6]

[1]Faculty of Liberal Arts, Rajamangala University of Technology Srivijaya, Songkhla, 90000, Thailand.; palachai.k@rmutsv.ac.th
[2]Faculty of Liberal Arts, Rajamangala University of Technology Srivijaya, Songkhla, 90000, Thailand.; Noppadon.p@rmutsv.ac.th
[3]Faculty of Liberal Arts, Rajamangala University of Technology Srivijaya, Songkhla, 90000, Thailand.; tidaporn.r@rmutsv.ac.th
[4]Faculty of Liberal Arts, Rajamangala University of Technology Srivijaya, Songkhla, 90000, Thailand.; jirapat.p@rmutsv.ac.th
[5]Faculty of Engineering, Rajamangala University of Technology Srivijaya, Songkhla, 90000, Thailand.; worawit.s@rmusv.ac.th
[6]Faculty of Engineering, Rajamangala University of Technology Srivijaya, Songkhla, 90000, Thailand.; phattharapha.j@rmutsv.ac.th

*Correspondence: noppadon.p@rmutsv.ac.th

Abstract: This research developed an improved biomass stove for dyeing Krajood (Lepironia articulata) as a sustainable appropriate technology for small-scale industry applications. The new design features an integrated water reserve tank, improved combustion chamber, heat shield, and robust support structure while maintaining operational simplicity. Performance evaluation revealed the improved stove reduced PM2.5 emissions at the operator position by 72.25% (from 191±16 to 53±7 μg/m³, p=0.0002), decreased water boiling time by 32.73% (from 55±6 to 37±3 minutes, p=0.0097), shortened dyeing time by 52.43% (from 103±7 to 49±3 minutes, p=0.0006), and lowered ambient temperature at the operator position by 46.45% (from 62.0±4.8°C to 33.2±1.7°C, p=0.0003). These improvements collectively enabled a five-fold increase in daily production capacity from 20 bundles (44 kg) to 100 bundles (220 kg) in an 8-hour workday. Colorimetric analysis confirmed no significant differences in Lab* values between traditionally and newly dyed Krajood at all measurement positions (p>0.05), ensuring quality preservation despite the process modifications. Economic assessment indicates the 71.4% higher initial investment (12,000 vs. 7,000 THB) is rapidly offset by productivity gains. The design exemplifies appropriate technology principles through its simplicity, local material utilization, and alignment with existing production knowledge. This improved stove addresses critical health and efficiency constraints in traditional Krajood processing while preserving product quality, demonstrating how targeted technological interventions can enhance traditional craft productivity and worker wellbeing in rural communities.

Keywords: biomass stove, Krajood dyeing, appropriate technology, sustainable development, particulate matter reduction

OPTIMIZING CONTINUOUS MEDIUM-CHAIN FATTY ACID PRODUCTION FROM BIOHYDROGENIC PALM OIL MILL EFFLUENT: OPERATIONAL PARAMETERS AND MICROBIAL DYNAMICS

Edy Kurniawan[1], Sompong O-Thong[2*], Benjamas Cheirsilp[3], and Yves Gagnon[4]

[1]International College, Thaksin University, Songkhla, 90000, Thailand
[2]Biofuel and Biocatalysis Innovation Research Unit, Mahidol University, Nakhonsawan Campus, Nakhonsawan, 60130, Thailand
[3] Center of Excellence in Innovative Biotechnology for Sustainable Utilization of Bioresources, Faculty of Agro-Industry, Prince of Songkla University, Songkhla, 90112, Thailand
[4]Université de Moncton, Edmundston, New Brunswick, E3V 2S8, Canada

*Correspondence: sompong.oth@mahidol.ac.th; (Sompong O-Thong, SO)

Abstract: Palm oil mill effluent (POME), a high-strength organic wastewater, was subjected to dark fermentation for biohydrogen production, leaving behind volatile fatty acids (VFAs) as a major byproduct. With 70% of VFAs remaining in the hydrogenic POME, this study explores their potential conversion into medium-chain fatty acids (MCFAs) as a sustainable strategy for resource recovery and waste mitigation. A continuous stirred-tank reactor was employed to investigate the influence of key operational parameters on MCFA production. Optimal conditions of 5.4 g/L ethanol supplementation, 2.6 g/L $NaHCO_3$, 1.5 L-CO_2/L/d loading, pH 6.5, and 35°C yielded a maximum MCFA concentration of 2.2 g-COD/L, comprising 1.8 g-COD/L caproic acid, 0.2 g-COD/L heptanoic acid, and 0.2 g-COD/L caprylic acid. This corresponded to a total MCFA yield of 0.5 g-COD/g-COD and 51% selectivity. CO_2 loading significantly enhanced caproic and heptanoic acid production. The reactor demonstrated long-term stability, sustaining efficient MCFA production for 220 days. Microbial community analysis revealed Caproiciproducens sp. (45%), Lactobacillus sp. (21%), and Clostridium sp. (14%) as dominant species, with key bacteria harboring essential enzymes for the reverse β-oxidation pathway—an energy-efficient route for MCFA synthesis. Additionally, the system achieved substantial removal efficiencies for total solids (42%), volatile solids (61%), chemical oxygen demand (31%), and suspended solids (95%). Despite challenges such as butyric acid accumulation, this study provides critical insights into scalable anaerobic fermentation for biowaste valorization and bio-based chemical production, offering a promising approach for industrial-scale applications.

Keywords: bioprocess optimization, caproic acid, Caproiciproducens sp., carbon dioxide supplementation, metagenomic

INTEGRATED ASSESSMENT OF SURFACE WATER QUALITY IN BAN PRU TOEI COMMUNITY FOREST USING PHYSICAL, CHEMICAL, AND BIOLOGICAL PARAMETERS

Ameena Rakdee,[1] Oranong Suetrong,[2] Nattavadee Tammachat,[3] Kritsada Nooplibta,[4] Wattanasak Sisombat[5] and Wattananarong Markphan[6*]

[1]Master of science program in Agro- Environmental Technology Mahidol University. ameena.rak@student.mahidol.ac.th
[2]Researchers under the Memorandum of Understanding for Cooperation in Research and Academic Services (Ban Phru Toei Community Forest Management) Between the Bang Khan Subdistrict Administrative Organization and Faculty of Science and Technology Nakhon Si Thammarat Rajabhat University (MOA).
2; onanong 26112541@icloud.com
2; nattavadeetammachat@gmail.com
2; Kritsada4314@gmail.com
[3]Bang Khan Subdistrict Administrative Organization, Bang Khan District, Nakhon Si Thammarat Province. Taitonkop@gmail.com
[6]Environmental Science major Faculty of Science and Technology Nakhon Si Thammarat Rajabhat University. wattananarong@gmail.com

*Correspondence: wattanarong_mak@nstru.ac.th

Abstract: This study evaluated the physical, chemical, and biological characteristics of water quality in the Ban Pru Toei Community Forest, located in Nakhon Si Thammarat Province, Thailand. Water samples were systematically collected from five monitoring stations during the period from January to March 2023. The physical and chemical parameters analyzed included water temperature, total dissolved solids (TDS), pH, hardness, and dissolved oxygen (DO). The average values obtained across all sampling sites were as follows: temperature 26.13±0.00°C, TDS 11.60±0.13 mg/L, pH 6.77±0.13, hardness 14.65±0.07 mg/L, and DO 4.36±0.10 mg/L. The biological assessment identified aquatic macroinvertebrates from 10 orders and 22 families, with the order Odonata being the most dominant (5 families), followed by Ephemeroptera and Coleoptera (3 families each). The presence of sensitive indicator species, including Acroneuria abnormis, burrowing mayfly nymphs, and Paegniodes sapanensis, was recorded at stations 2, 3, 4, and 5, whereas taxa indicative of good to moderate water quality were widely distributed across all stations. The physical and chemical parameters at each station complied with the surface water quality standards set forth by the Pollution Control Department of Thailand. Based on these parameters, stations 1–3 were classified as Class 1 (pristine), station 4 as Class 2 (suitable for consumption following standard treatment), and station 5 as Class 3 (appropriate for agricultural use after treatment). The findings suggest that the Ban Pru Toei Community Forest sustains a generally high level of water quality, as indicated by both physicochemical conditions and the presence of pollution-sensitive taxa. Nonetheless, standard water treatment and disinfection procedures are recommended prior to any consumption or agricultural application.

Keywords: Water quality, Aquatic macroinvertebrates, Bioindicators, Community forest, Dissolved oxygen

OPTIMIZING BIOHYDROGEN PRODUCTION FROM PALM OIL MILL EFFLUENT: EFFECTS OF INITIAL PH AND ACIDITY IN THERMOPHILIC BATCH FERMENTATION

Sukonkarat Chanthong[1*], Chonticha Leamdum[2], and Tanawat Srirugsa[3]

[1]Center of Excellence for Agricultural Innovation and Bioproducts of Thaksin University, Phatthalung, 93210, Thailand; sukonlarat052@gmail.com
[2]Center of Excellence for Agricultural Innovation and Bioproducts of Thaksin University, Phatthalung, 93210, Thailand;chonticha2411.l@gmail.com
[3]Department of Mechanical Engineering, Faculty of Engineering, Thaksin University, Phatthalung 93210, Thailand; tanawat.s@tsu.ac.th

*Correspondence: sukonlarat052@gmail.com; (S. Chanthong)

Abstract: Hydrogen production from palm oil mill effluent (POME) by thermophilic batch fermentation using anaerobic digester sludge was investigated, focusing on the effects of initial pH and acidity. Experiments were conducted in 120 mL serum bottles with 60 mL working volume at 60°C for 72 hours. Initial pH values of 5.5, 6.0, and 6.5 were adjusted using either ash-derived alkaline solution or methane digester effluent. Methane digester effluent was also used to adjust acidity at concentrations of 10-50% (880-3260 mg-$CaCO_3$/L). Results showed that hydrogen production increased with increasing pH, with methane digester effluent consistently outperforming ash solution as a pH adjustment agent. At pH 5.5, 6.0, and 6.5, hydrogen yields using ash solution were 1.62, 1.78, and 2.09 L-H_2/L-POME, respectively, compared to 2.01, 2.22, and 2.31 L-H_2/L-POME when using methane effluent. Regarding acidity, 20% methane digester effluent (1760 mg-$CaCO_3$/L) provided optimal conditions, yielding 2.38 L-H_2/L-POME, with higher or lower concentrations resulting in reduced hydrogen production. Metabolite analysis revealed that optimal hydrogen production coincided with increased butyric acid formation and lower acetic acid/butyric acid ratios. The combined optimal conditions (pH 6.5 adjusted with 20% methane digester effluent) provided proper buffering capacity to maintain pH stability during fermentation while promoting favorable metabolic pathways for hydrogen production. These findings demonstrate the importance of pH and acidity control in dark fermentative hydrogen production from POME and offer practical insights for integrating biohydrogen production into existing palm oil mill treatment systems

Keywords: Biohydrogen, Palm oil mill effluent, Thermophilic fermentation, pH optimization, Acidity

MICROBIAL DIVERSITY AND DYNAMICS IN TRADITIONAL THAI INDIGO FERMENTATION VATS: A NEXT-GENERATION SEQUENCING ANALYSIS

Chonticha Leamdum,[1] Jetsada Tawantum,[2] Suratsawadee Wimolsong,[3] Chaisit Niyasom,[4] and Chonticha Mamimin[5*]

[1]Center of Excellence for Agricultural Innovation and Bioproducts of Thaksin University, Phatthalung, 93210, Thailand; chonticha2411.l@gmail.com
[2]Biofuel and Biocatalysis Innovation Research Unit, Nakhonsawan Campus, Mahidol University, Nakhon Sawan, 60130, Thailand; jetsada.tawantum16@gmail.com
[3]Biofuel and Biocatalysis Innovation Research Unit, Nakhonsawan Campus, Mahidol University, Nakhon Sawan, 60130, Thailand; Suratsawadee.wim@mahidol.ac.th
[4]Department of Biological Science, Faculty of Science and Digital Innovation, Thaksin University, Phatthalung, 93210, Thailand; nchaisit@gmail.com
[5]Biofuel and Biocatalysis Innovation Research Unit, Nakhonsawan Campus, Mahidol University, Nakhon Sawan, 60130, Thailand; chonticha51@gmail.com

*Correspondence: chonticha51@gmai.com (C. Mamimin)

Abstract: This study investigated the microbial diversity and dynamics in traditional Thai indigo fermentation vats at PASAGU Natural Color House in Phatthalung Province using Next-Generation Sequencing (NGS). Despite the cultural and economic importance of indigo dyeing in Thailand, this process's microbial ecology has remained poorly characterized. We analyzed four fermentation vats of different ages (1 month to 2 years 8 months) to identify key microbial taxa and their functional roles in indigo reduction. NGS analysis revealed a diverse bacterial community dominated by Proteobacteria (39.5-53.6%) and Firmicutes (42.3-50.6%), with significant contributions from Actinobacteria (1.8-4.7%) and Acidobacteria (0.2-2.9%). At the genus level, Halomonas (20.6-45.3%) and Alkalibacterium (15.3-28.9%) were the primary indigo reducers, showing inverse abundance patterns during vat maturation. Vat age significantly influenced community structure, with mature vats (2+ years) exhibiting higher diversity (Shannon index 4.8 vs. 3.2) and superior indigo reduction efficiency (95.9% vs. 73.8%) compared to young vats (1 month). The optimal dyeing period occurred between days 10-20 of fermentation, characterized by pH values of 12.1-12.4, temperatures of 25.4-25.7°C, and volatile fatty acid concentrations of 0.71-0.74 g/L. Our findings validate traditional knowledge through molecular evidence, providing the scientific basis for empirical indicators used by artisans. The identified microbial consortia could serve as the foundation for starter culture development, potentially reducing vat maturation time from 7-30 days to 3-7 days. This study bridges indigenous knowledge and microbiology, offering pathways to enhance traditional dyeing practices while preserving ecological and cultural integrity.

Keywords: Indigo fermentation, Next-Generation Sequencing, Alkalibacterium, Halomonas, Traditional ecological knowledge

ANAEROBIC THERMOPHILIC DEGRADATION OF FEATHER KERATIN BY MICROBIAL ENRICHMENT FROM TROLLC OIL RESERVOIRS: CHARACTERIZATION OF THERMOANAEROBACTER SP. AND KERATINOLYTIC ACTIVITY

Supattra In-chan, Nils-Kåre Birkeland, Srisuda Chaikitkaew, and Chonticha Leamdum

* Correspondence: inchanbow@gmail.com

Abstract: This study investigated the degradation of chicken feather keratin by microbial enrichment cultures from TrollC oil reservoirs (North Sea) under anaerobic thermophilic conditions (65°C). Feather degradation was assessed through visual monitoring and scanning electron microscopy in a modified mineral medium supplemented with 0.05% yeast extract. The enrichment culture demonstrated significant keratinolytic activity, with visible degradation beginning on day 7 and achieving 85.3±3.2% decomposition by day 11, while control samples showed only 5.7±1.8% degradation. Genome sequencing yielded a high-quality draft assembly (97.8% completeness, 0.3% contamination) with 2,307 protein-coding genes. Phylogenomic analysis using the GBDP method identified the dominant organism as closely related to Thermoanaerobacter thermocopriae DSM 5309, with a digital DNA-DNA hybridization (dDDH) value of 83.7±2.4%. RAST annotation revealed 127 genes associated with protein metabolism, including 43 protease-encoding genes potentially responsible for keratin degradation. Enzymatic assays detected keratinase activity of 24.6±2.1 U/mL in culture supernatants after 11 days. The feather-degrading consortium maintained activity through five sequential transfers, with consistent degradation rates (>80%) observed across passages. This study presents the first report of efficient keratin degradation at 65°C under strictly anaerobic conditions by a Thermoanaerobacter-related bacterium, offering potential applications for sustainable management of the 8.5 million tons of feather waste generated annually by the global poultry industry.

Keywords:

CONCEPTUALIZING A MODEL FOR E-WASTE RECYCLING MANAGEMENT, A PERSPECTIVE OF IR 4.0

Hafiz Waqas Ahmed Ansari[1*], Muhammad Imran[2], Waida Irani Mohd Fauzi[3]

[1]School of Business Management, Universiti Utara Malaysia, Sintok, Kedah, Malaysia; dr.h.waqas@gmail.com
[2]School of Business Management, Universiti Utara Malaysia, Sintok, Kedah, Malaysia; muhammad.imran@uum.edu.my
[3]School of Business Management, Universiti Utara Malaysia, Sintok, Kedah, Malaysia; waida@uum.edu.my

*Correspondence: dr.h.waqas@gmail.com

Abstract: The rapid digitalization and technological advancement worldwide have considerably increased the usage of electric and electronic devices. Consequently, this rapid use of electronic gadgets has witnessed a rise in electronic equipment trash (e-waste) generation. The exposure of e-waste has been linked to degenerating the natural environment and an increase in serious health concerns. The objective of this study is to conceptualize a research model for e-waste recycling management by adopting the technologies of IR 4.0 in Malaysia. These smart technologies of IR4.0 include artificial intelligence, blockchain technology, cloud computing, and internet of things. The researchers used the theoretical foundation of dynamic capability theory (DCT) to conceptualize this research model. As dynamic capability theory (DCT) focuses on the ability of the organization to integrate, build, and reconfigure Internal and external competencies to address rapidly changing environment. Consequently, this research framework provides a conceptual foundation for the organizations to design e-waste recycling management system by adopting IR 4.0 technologies. Moreover, scholars can design and conduct research for empirically testifying the viability of the proposed conceptual model. Furthermore, this proposed conceptual framework can be a vital contribution for benefiting the stakeholders of the natural environment.

Keywords: e-waste recycling management, IR 4.0, dynamic capability theory.

REDUCING GHG EMISSIONS IN FROZEN FRUIT PROCESSING BY SOLAR OPTIMIZATION AND WASTE MANAGEMENT STRATEGIES

Piyabut Yimfaen[1], Sukonlarat Chanthong[2], Chansa phralapraksa[3] and Warunya Chuenmueang[4*]

[1]Siam technology college;Bangkok Yai District, Bangkok 10600, Thailand; piyabud.y@gmail.com
[2]Bio4gas (Thailand) Company Limited, Paphayom, Phatthalung 93210, Thailand
[3]Siam technology college;Bangkok Yai District, Bangkok 10600, Thailand
[4]Siam technology college;Bangkok Yai District, Bangkok 10600, Thailand

*Correspondence piyabud.y@gmail.com

Abstract: This study investigated the effectiveness of combined solar panel optimization and waste valorization strategies for reducing greenhouse gas (GHG) emissions in a Thai frozen fruit processing facility. Interventions included solar panel cleaning to improve energy generation and mangosteen peel waste valorization for by-product development. Data collection spanned July-December 2023, with emissions calculated using the Thailand Greenhouse Gas Management Organization methodology. Results demonstrated substantial environmental improvements, with total GHG emissions reduced by 343.65 tCO_2eq/year (63.2%). Waste management contributed 86.8% (298.15 tCO_2eq) of reductions, while solar optimization provided 13.2% (45.50 tCO_2eq). Economic analysis revealed annual operational savings of 549,872 THB from reduced electricity costs (380,000 THB) and waste disposal expenses (169,872 THB), complemented by 2,831,723 THB in new revenue from by-products. With implementation costs of 675,000 THB, the payback period was 2.5 months, yielding a first-year ROI of 382%. For broader industry adoption, we recommend phased investment approaches beginning with solar optimization before larger waste valorization investments, systematic waste segregation protocols, and industry collaborations to share processing facilities for improved capacity utilization of seasonal operations.

Keywords: Reducing GHG, Solar Optimization, Waste Management Strategies

BIOTRANSFORMATION OF CO_2 TO BIOFUELS AND CHEMICALS BY NOVEL SPECIES CLOSTRIDIUM THAILANDENSE: ADVANCING CARBON-NEUTRAL BIOECONOMY

Sompong O-Thong[1*]

[1]Biofuel and Biocatalysis Innovation Research Unit, Nakhonsawan Campus, Mahidol University, Nakhonsawan, 60130, Thailand; sompong.oth@mahidol.ac.th

* Correspondence: sompong.oth@mahidol.ac.th; (S. O-Thong)

Abstract: This study investigates the potential of homoacetogenic bacteria for simultaneous CO_2 conversion and value-added product formation in biogas upgrading systems. A homoacetogenic consortium enriched from peatland soil (PL3) demonstrated superior CO_2 consumption (95%) and acetic acid production (120 mg/L). Under optimized conditions (H_{22} ratio 2:1, pH 8, 30°C), methane content increased to 98% with acetic acid production reaching 543.4 mg/L, yielding vehicle-grade biomethane. Microbial community analysis revealed predominance of Clostridium species as the primary homoacetogens responsible for CO_2 reduction. A novel strain, designated PL3^T, was isolated and characterized as a straight rod-shaped (0.8-1.0 × 4.0-10.0 µm), Gram-positive, endospore-forming, obligate anaerobe with optimal growth at pH 7, 30°C, and 0.5% NaCl. The strain metabolized various substrates including lactose, maltose, and glycerol, producing mainly acetic acid and ethanol from H_2/CO_2. Genomic analysis confirmed its novelty with only 25.1% DNA-DNA hybridization and 80.2% average nucleotide identity with its closest relative, C. aciditolerans DSM 17425^T. Based on phenotypic, chemotaxonomic, and phylogenetic distinctions, strain PL3^T is proposed as Clostridium thailandense sp. nov. (type strain PL3^T=DSM 111812^T=TISTR 2984^T), representing a promising biological catalyst for CO_2-based bioeconomy applications.

Keywords: Biomethanation, Homoacetogenesis, CO_2 fixation, Clostridium thailandense, Carbon recycling

SESSION PEACE

FOSTERING PEACE AND STRONG INSTITUTIONS THROUGH HAPPINESS ENGINEERING AND MEDITATION: A CASE STUDY OF THAKSIN UNIVERSITY'S SUSTAINABLE EDUCATION MODEL

Duenpen Kochakornjarupong[1*]

[1]Department of Computer Science and Information, Faculty of Science and Digital Innovation, Thaksin University, Phatthalung Campus, Thailand; duenpen@tsu.ac.th

* Correspondence: duenpen@tsu.ac.th; (Asst.Prof.Dr. Duenpen Kochakornjarupong)

Abstract: This case study explores how Thaksin University's courses Happiness Engineering and Meditation for Life Development align with SDG 16 (Peace and Strong Institutions) by cultivating mindfulness and leadership skills. Launched in 2023, these courses emphasize self-development, social awareness, and ethical responsibility, reflected in their learning outcomes. Initial enrollment reached 290 and 280 students respectively, but participation declined when volunteer mentors became scarce, highlighting institutional sustainability challenges. Using a qualitative approach (student feedback, course evaluations, and participatory observation), the study reveals: 1. Peace building: Students reported enhanced emotional regulation and interpersonal skills through mindfulness practices. 2. Institutional Gaps: Dependence on volunteer mentors exposed vulnerabilities in long-term course delivery. 3.Contextual Barriers: Lower enrollment at Pattani Campus (10% of initial numbers) suggested regional adaptation needs. The study proposes two collaborative solutions: 1. Structural Support: Replacing volunteers with trained instructors and digital tools (e.g., Mind Power Bank). 2. Curriculum Integration: Embedding happiness and meditation modules across disciplines to institutionalize peace education. Findings underscore the need for adaptive educational models that balance individual well-being and institutional resilience to achieve sustainable development goals.

Keywords: sustainable education, peace pedagogy, institutional adaptation, mindfulness training, participatory learning

SESSION PARTNERSHIP

SOCIAL IMPACT ASSESSMENT: LIMITATIONS AND GUIDELINES FOR IMPROVEMENT TO ALIGN WITH THE LOCAL CONTEXT IN SURAT THANI PROVINCE, THAILAND

Kanokkul Phetuthai [1*], Abdullah Chelong [2]

[1] PhD student in Human and Social Development, Faculty of Liberal Arts, Prince of Songkla University, Songkhla, Thailand; kanokkul.phe@sru.ac.th
[2] Department of Human and Social Development, Faculty of Liberal Arts, Prince of Songkla University, Thailand; abdullah.c@psu.ac.th

* Correspondence: kanokkul.phe@sru.ac.th

Abstract: This research examines the limitations of Social Impact Assessment (SIA) implementation in Surat Thani Province, Thailand, and proposes context-specific improvement guidelines. Through a mixed-methods approach combining systematic document analysis of 30 research studies (16 domestic and 14 international) from Scopus, Web of Science, and Google Scholar databases, and in-depth interviews with 35 key stakeholders, the study identified four critical limitations: (1) inadequate indicators for mental health, local culture, and equality; (2) predominant top-down approach restricting community involvement; (3) discontinuous community participation limited primarily to initial project stages; and (4) insufficient resources and assessment expertise. The qualitative data was analyzed using thematic coding to identify recurring patterns and stakeholder perspectives on SIA processes. The study recommends developing area-specific indicators that reflect cultural values, ensuring continuous community participation throughout all assessment phases, integrating technological tools such as social simulation models, and establishing collaborative networks between communities and government agencies. Implementing these recommendations in pilot areas within Surat Thani Province would enhance SIA effectiveness, support sustainable development, reduce social conflicts, promote equity, and strengthen multi-stakeholder collaboration. This research contributes to improving impact assessment methodologies that better align with local contexts in developing regions.

Keywords: Social Impact Assessment; Community Participation; Localized Indicators; Sustainable Development; Thailand

ASSESSING THE ECONOMIC IMPACT OF INDONESIA'S GDP GROWTH UNDER THE IA-CEPA FRAMEWORK: TRADE MOBILITY AND BILATERAL RELATIONS WITH AUSTRALIA TO PROMOTE SDGS

Arif Darmawan[1*], I Wayan Suparta[1], Roby Rakhmadi [2], Restu A Suryaman[3], Latiffa Aurelien[1], Sri Andayani [4]

[1] Department of Economics Development, University of Lampung, Indonesia,
[2] Department of International Relation, University of Lampung
[3] Department of Economics Development, University of Pasundan, Indonesia
[4] School of Graduate Studies, STIT Pringsewu, Indonesia

* Correspondence: arif.darmawan@feb.unila.ac.id

Abstract: In recent years, Indonesia has experienced robust economic rowth, outpacing many Southeast Asian nations, with its bilateral trade relationship with Australia playing a pivotal role. The Indonesia-Australia Comprehensive Economic Partnership Agreement (IA-CEPA), effective since July 5, 2020, has further strengthened this partnership, enhancing trade and investment flows. This study evaluates the impact of bilateral trade under the IA-CEPA framework on Indonesia's GDP growth, utilizing key indicators such as export and import values, the Economic Complexity Index (ECI), merchandise trade data, and the wholesale price index. Analyzing secondary data from the World Bank, OEC World, Trade Map, and the Australian Government (2010–2023), the study employs the Error Correction Model to assess both short- and long-term effects. Findings reveal that exports, imports, ECI, merchandise trade, and the wholesale price index significantly influence Indonesia's economic growth in the long term, while only exports, imports, and the wholesale price index impact short-term GDP growth. Beyond economic metrics, this study underscores the potential of the IA-CEPA to promote Sustainable Development Goals (SDGs) by fostering inclusive economic growth (SDG 8), reducing inequalities (SDG 10), and encouraging responsible consumption and produwction (SDG 12). By enhancing trade efficiency and creating employment opportunities, the IA-CEPA aligns with Indonesia's commitment to achieving sustainable development, offering a model for leveraging trade agreements to advance global sustainability agendas

Keywords: GDP, IA-CEPA, Exports-Imports, Economic Complexity Index, Merchandise Trade

IMPACT OF WORKPLACE INCIVILITY, ORGANIZATIONAL JUSTICE, AND JOB BURNOUT ON TEACHER'S DYSFUNCTIONAL TURNOVER INTENTION

Fazeyha Zirwa Rana[1*], Dr Darwina Arshad[2], and Dr Zulqarnain Arshad[3]

[1] School of Business Management, Universiti Utara Malaysia. Malaysia; fazeyhazirwarana444@gmail.com
[2] School of Business Management, Universiti Utara Malaysia. Malaysia; darwina@uum.edu.my
[3] School of Business Management, Universiti Utara Malaysia. Malaysia; m.zulqarnain.arshad@uum.edu.my

* Correspondence: fazeyhazirwarana444@gmail.com

Abstract: The present study aims to investigate the impact of workplace incivility and organizational justice on teachers' dysfunctional turnover intention through the mediating role of job burnout. Dysfunctional turnover intention is very detrimental for organizations as when talented employees quit their organizations then it will be challenging for them to gain competitive advantage. When employees feel that they are disregarded in their organizations they don't want to be part of that organization anymore without thinking much. Organizational justice is also very necessary for talented employee retention as when employees are sure that there will be no injustice to them, then they will work for the betterment of their organization. The teaching sector faces a high level of dysfunctional turnover intention due to workplace incivility, organizational injustice, and job burnout revealing that if institutions cope with these problems then talented teachers will never quit their jobs. Results demonstrate that there is a positive impact of workplace incivility on teachers' dysfunctional turnover intention through job burnout and a negative impact of organizational justice through job burnout on teachers' dysfunctional turnover intention. This study follows positivism philosophy, a deductive approach with a cross-sectional research design. The survey questionnaire technique was applied to collect data from 230 respondents. SPSS and Smart PLS were utilized through SEM techniques for data analysis and results generation. The model of this study has never been tested before in the teaching sector of Pakistan, so this proved to be a value addition.

Keywords: Workplace incivility, organizational justice, job burnout, dysfunctional turnover intention.

THE IMPACT OF WORKPLACE BULLYING AND STRESS ON EMPLOYEE WELL-BEING: THE MEDIATING ROLE OF STRESS IN THE PAKISTANI BANKING SECTOR

Muhammad Zulqarnain Arshad[1*], Darwina Arshad[2], and Hendrik Lamsali[3]

[1] School of Business Management, Universiti Utara Malaysia. Malaysia; m.zulqarnain.arshad@uum.edu.my
[2] School of Business Management, Universiti Utara Malaysia. Malaysia; darwina@uum.edu.my
[3] School of Technology Management and Logistics, Unievrsiti Utara Malaysia; hendrik@uum.edu.my

* Correspondence: Dr Zul; m.zulqarnain.arshad@uum.edu.my

Abstract: Aligned with the United Nations Sustainable Development Goals, this study explores the complex interplay between workplace bullying, stress, and employee well-being in the context of the Pakistani banking sector—a high-demand environment where psychosocial risks are increasingly prevalent. Drawing on data from a cross-sectional survey of 310 banking employees selected through simple random sampling, the study employs structural equation modeling (SEM) to assess both the direct and indirect effects of bullying on well-being, mediated by stress. Findings confirm that workplace bullying significantly heightens employee stress, which in turn exacerbates psychological distress and diminishes overall well-being. Employees exposed to bullying reported lower job satisfaction, increased emotional exhaustion, and greater susceptibility to mental health issues such as anxiety and depression. These challenges have been further intensified in the post-pandemic era, where remote and hybrid work models have increased feelings of isolation and uncertainty. In support of SDG 3 (Good Health and Well-being), the study advocates for comprehensive mental health interventions and organizational support systems. Moreover, in alignment with SDG 8 (Decent Work and Economic Growth) and SDG 10 (Reduced Inequalities), the findings call for inclusive, fair, and psychologically safe workplace practices through anti-bullying policies, stress management programs, and proactive well-being strategies. This research offers crucial insights for both scholars and practitioners seeking to promote healthier, more resilient workplaces that empower employees and enhance organizational performance in an increasingly dynamic and uncertain global labor market.

Keywords: Workplace bullying, Stress, Well-being, Banking Staff, Smart-PLS

ASSESSING SERVICE QUALITY OF LAST-MILE DELIVERY SERVICES AND CUSTOMER SATISFACTION IN MALAYSIA

Hendrik Lamsali [1*], Tan Wei Bin[2], Darwina Arshad[3], Muhammad Zulqarnain Arshad[4]

[1,2]School of Technology Management and Logistics, [3,4]School of Business Management
Universiti Utara Malaysia 06010 UUM Sintok, Kedah, Malaysia

*Corresponding author e-mail: hendrik@uum.edu.my

Abstract: In the evolving realm of last-mile delivery services, customer satisfaction is a vital indicator of success. This study examines the diverse impacts of delivery, packaging, technology, accessibility, and trust on consumer satisfaction in last-mile delivery services. The Expectancy-Disconfirmation Theory and the SERVQUAL model constitute the foundational theories of this work. This study employs a quantitative research methodology to gather data via questionnaire surveys administered to customers of last-mile delivery services in the Kuala Lumpur setting. The employed sampling technique is convenience sampling, wherein respondents are chosen based on their availability, accessibility, or willingness to participate. This study involves 401 respondents, and the data has been analyzed using SPSS. The findings highlighted the crucial impact of delivery pricing, speed and accuracy, packaging, technical improvements, accessibility, and reliability on the perception of service quality and, consequently, customer satisfaction levels. Trust emerged as the paramount factor influencing consumer satisfaction in last-mile delivery services. Future research could explore how environmentally friendly practices, such as the use of electric vehicles, carbon-neutral deliveries, and sustainable packaging, influence customer satisfaction in last-mile delivery services. It would also be valuable to examine consumer willingness to pay a premium for eco-friendly delivery options and how sustainability initiatives impact brand loyalty and trust. With advancements in artificial intelligence (AI) and automation, future studies could also investigate how AI-driven route optimization, autonomous delivery vehicles, and robotic process automation enhance efficiency and customer satisfaction. Additionally, research could assess the impact of AI-powered customer support on last-mile service experiences.

Keywords: Last-mile delivery, customer satisfaction, sustainability, delivery, packaging, technology, accessibility, trust, logistics

THE IMPACT OF GREEN MARKET ORIENTATION AND GREEN ENTREPRENEURIAL ORIENTATION ON THE SUSTAINABLE PERFORMANCE OF SMES IN THAILAND

Muhammad Hassan Arshad,[1*] Yejin Kim[2], Md Ahbabur Rehman,[3] Witawin Siripoonsap,[4] Abdunfatah Masamae[5]

[1]Lecturer, International College, Thaksin University: Muhammad.a@tsu.ac.th
[2]Lecturer, International College, Thaksin University: ye.k@tsu.ac.th
[3]Lecturer, International College, Thaksin University: ahbabur.r@tsu.ac.th
[4]Lecturer, International College, Thaksin University: witawin.s@tsu.ac.th
[5]Lecturer, International College, Thaksin University: abdunfatah.m@tsu.ac.th

*Correspondence email: Muhammad.a@tsu.ac.th

Abstract: This conceptual paper explores the relationship between green market orientation (GMO), green entrepreneurial orientation (GEO), and the sustainable performance of small and medium-sized enterprises(SMEs) in Thailand. As environmental concerns and sustainability become critical for business success, SMEs are increasingly adopting green practices to remain competitive. This paper proposes a framework that integrates GMO and GEO as key drivers of sustainable performance, emphasizing the role of environmental awareness, innovation, and customer-centric strategies. The paper concludes with implications for SME managers, policymakers, and future research directions.

Keywords: Green Market Orientation, Entrepreneurial orientation, Sustainable performance, SMEs

FOSTERING SUSTAINABILITY IN HIGHER EDUCATION: INSIGHTS FROM ASEAN GRADUATE STUDENTS IN THESIS-ONLY PROGRAMS IN SOUTHERN THAILAND

Yejin Kim,[1*] Muhammad Hassan Arshad,[2] and Witawin Siripoonsap[3]

[1]Sustainable Development, International College, Thaksin University; ye.k@tsu.ac.th
[2]Business Administration, International College, Thaksin University; muhammad.a@tsu.ac.th
[3]Education in English, International College, Thaksin University; witawin.s@tsu.ac.th

*Correspondence: ye.k@tsu.ac.th

Abstract: The primary objective of this study was to explore the academic and cultural adjustment experiences of ASEAN graduate students in Southern Thailand and to identify effective strategies for stakeholders to enhance their academic success and social integration. Through purposive sampling, five ASEAN participants (Mage=33.6) who had either completed or were currently enrolled in graduate programs as of 2025 were recruited. Utilizing thematic analysis of the qualitative data collected through semi-structured interviews, the study identified four overarching themes reflecting the participants' experiences: (1) challenges, consisted of new to this field, requirements and time management; (2) advisors' roles, encompassed along-siders and effective skills; (3) academic support, including funds for research, proper facilities, and clear instruction; and (4) smooth adjustment, consisting of cultural difference and supportive people. The findings provide valuable insights for improving support systems that facilitate both academic achievement and cultural adaptation among ASEAN graduate students in Southern Thailand. Additionally, the study discusses its limitations and offers recommendations for future research and institutional improvements.

Keywords: academic adjustment, cultural adjustment, thesis-only program, ASEAN students, Southern Thailand