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Book of Abstract Conference Proceeding

2nd International Conference on Sustainable Research and Development

ICSRD-2025

Virtual Conference:
October 15, 2025

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http://doi.org/10.31098/ICSRD-25

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2nd International Conference on Sustainable Research and Development (ICSRD-25)

Theme: "Resilience through Integration: Interdisciplinary Approaches to Energy Sustainability, Food Security, and National Defence"

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FOREWORD

Supported by :

Research Synergy Foundation is a digital social enterprise platform that focuses on developing the Global Research Ecosystem towards outstanding global scholars. We build collaborative networks among researchers, lecturers, scholars, and practitioners globally for the realization of knowledge acceleration and to contribute more to society and humanity. As a social enterprise, our aim is to provide a good research ecosystem and platform for researchers to share, discuss, and disseminate their ideas. In addition, it helps you to improve your research and contribute to the knowledge. Therefore, creating social value and impact is our priority.

From 2017 to 2024, more than 35.000 scholars have participated in our programs from Asia, Australia, Africa, America, and Europe continents. With the average of the increasing number of members by more than 5.000 each year, we continuously strengthen the global research ecosystem by having five support systems that are ready to help members from across the world.

There are various agendas (work and program) that we have already done since 2017 up to present. The agendas are coming from all the support systems in the Global Research Ecosystem, named: Scholarvein, ReviewerTrack, Research Synergy Institute, Research Synergy Press, and Global Research Community. Research and publication cannot be seen as a separate part. Otherwise, we should take both as a comprehensive program. Moreover, the quality of the paper is the biggest concern for publication. To achieve the Organization/University/ Institution goal, we provide some agendas that can support you in research and publication enhancement. Some of the prominent agendas are:

1. International Conferences: It aims to create a "tipping point" of opportunities for participants to disseminate their research globally and have reputable scientific publication output.
2. Scientific and Academic Writing Coaching Clinics: It aims to provide a targeted and intensive learning strategy for publishing papers in high-impact Scopus/ WOS international journals.
3. Workshops: It aims to provide a vibrant learning forum to enhance the author's capability of scientific writing skills and the manuscript's quality.
4. Learning and Knowledge Sharing Programs: It aims to provide the best practice and guide from the experts, editors, and publishers' perspectives in research and publication enhancement.
5. Social Programs: It aims to empower and encourage society to share the value of creating an impactful program with us.

Research Synergy Foundation welcome all individuals, organizations/institutions (universities, governments, and private sectors) to be part of our Global Research Ecosystem.

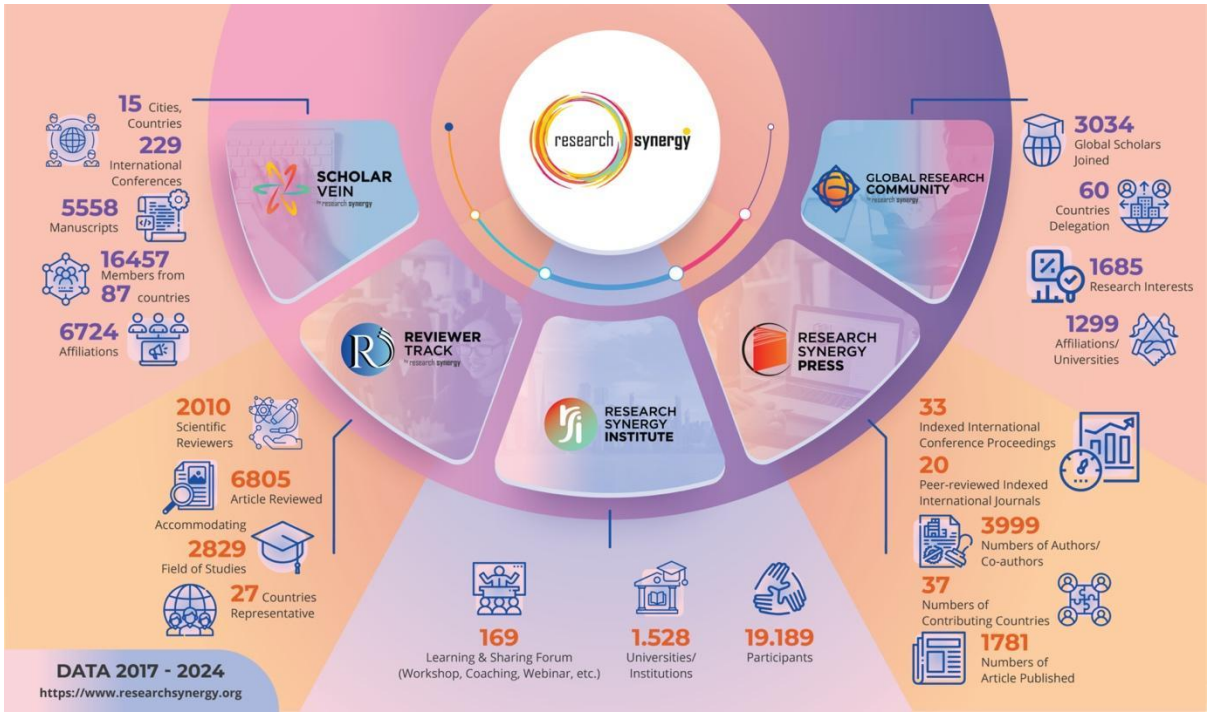

Figure: Global Research Ecosystem owned by Research Synergy Foundation (data from 2017 – 2024)

Please find other important links related to RSF profile:
- https://www.researchsynergy.org/
- http://globalresearchecosystem.com/
- https://f1000research.com/rsf
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https://www.researchsynergy.org/

Vision
"To Become a Pioneer University of Development Based on the national defense spirit in the Global Era."

Mission:

1. To produce globally competitive graduates with a spirit of State Defense through quality learning and the development of knowledge, technology, science, and humanity;
2. To improve the quality of research and community service through the strengthening of partnerships and well-planned, integrated, and sustainable programs; and
3. To develop good university governance through independent, modern, and sustainable management in the areas of human resources, finance, infrastructure, and integrated information and communication technology.

Objectives:

1. To enhance the quality of graduates who are globally competitive and uphold the spirit of State Defense through the development of quality learning under the Merdeka Belajar–Kampus Merdeka framework and the advancement of knowledge, technology, science, and humanity.
2. To improve the quality of collaboration and academic staff by increasing the quality of research and community service outcomes as well as the competence of lecturers.
3. To enhance the quality of curriculum, learning, and collaboration to strengthen institutional accreditation and achieve international accreditation for study programs.
4. To improve participatory, transparent, and accountable BLU (Public Service Agency) governance through the implementation of bureaucratic reform to realize Good University Governance.

Strategic Goals of UPN "Veteran" Yogyakarta:

1. Improved quality of higher education graduates.
2. Enhanced quality of higher education lecturers.
3. Strengthened quality of curriculum and learning.
4. Improved governance of work units within the Directorate General of Higher Education.

Core Values:

The core values developed as the foundation and direction for the attitudes and behavior of employees and the academic community include: **Discipline, Perseverance, Creativity, Excellence, State Defense, and Honesty.**

Supporting values that strengthen the institutional culture in line with those promoted by the Ministry of Education, Culture, Research, and Technology include **Integrity, Lifelong Learning, and Meritocracy.**

https://upnyk.ac.id/

Vision

To become a **leading comprehensive polytechnic university in Asia**, recognized for academic excellence, innovation, inclusivity, and its significant contribution to national and global development.

Mission

1. To provide **inclusive, equitable, and globally relevant polytechnic education** that empowers individuals and communities.
2. To advance **research, innovation, and creative works** that address societal challenges and support sustainable development.
3. To strengthen **industry and international collaborations** that enhance academic excellence and global competitiveness.
4. To cultivate **social responsibility and lifelong learning** among students, faculty, and alumni in the pursuit of national progress.

Core Values

PUP upholds values that guide its mission and educational philosophy:

- **Integrity**
- **Excellence**
- **Social Responsibility**
- **Innovation**
- **Patriotism**
- **Lifelong Learning**

https://www.pup.edu.ph/pulilan/

Vision:

To establish **Universiti Teknologi MARA** as a **globally renowned university** in the fields of **science, technology, humanities, and entrepreneurship**.

Mission:

1. To lead the development of **agile, professional Bumiputeras** through forward-thinking curricula and impactful research.
2. To promote **academic excellence, innovation, and entrepreneurship** that contribute to national and regional growth.
3. To nurture **graduates with integrity, leadership, and global competitiveness** who are capable of advancing knowledge and serving society.
4. To strengthen **strategic partnerships** and **community engagement** to foster inclusive and sustainable development.

Core Values:

UiTM Sabah embodies values that uphold its commitment to excellence and integrity:

- **Excellence**
- **Synergy**
- **Integrity**

https://www.uitm.edu.my/

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Universitas Pembangunan Nasional Veteran Yogyakarta

Co-Conference Chair
Assoc. Prof. Dr. Hendrati Dwi Mulyaningsi
Founder & CEO of Research Synergy Foundation

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Dr. Leong Choi Meng – Swinburne University of Technology, Sarawak Campus, Malaysia

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Prof. Salihu Abdulwaheed Adelabu – Ibrahim Badamasi Babangida University, Nigeria

Prof. Ts. Dr. Suraini Abd-Aziz – Universiti Putra Malaysia, Malaysia

CONFERENCE CHAIR MESSAGE

Distinguished Participants and Guest,
Excellencies, Ladies, and Gentlemen

Good morning, esteemed keynote speakers, respected presenters, valued participants, and dear members of our global academic community. It is with great pleasure and sincere appreciation that I welcome you all to **the 2nd International Conference on Sustainable Research and Development (ICSRD-25)** jointly organized by **LPPM Universitas Pembangunan Nasional "Veteran" Yogyakarta** and **Research Synergy Foundation**, and proudly co-hosted by **Polytechnic University of the Philippines (PUP)** and **Universiti Teknologi MARA (UiTM) Cawangan Sabah, Malaysia**.

This year's conference embraces the inspiring theme: **"Resilience through Integration: Interdisciplinary Approaches to Energy Sustainability, Food Security, and National Defence."** This theme captures our shared vision to build sustainable futures through interdisciplinary collaboration and integrated innovation—uniting researchers, educators, and practitioners to address pressing global challenges in energy, environment, and national resilience.

We are deeply honored to host our distinguished keynote speakers:

- **Prof. Dr. Mohamad Irhas Effendi, M.Si.** – Rector, Universitas Pembangunan Nasional Veteran Yogyakarta, Indonesia
- **Prof. Pascualito B. Gatan** – Vice President for Campuses, Polytechnic University of the Philippines
- **Prof. Madya Dr. Rozita @ Uji Mohammed** – Rector, Universiti Teknologi MARA, Cawangan Sabah, Malaysia

Your participation—as keynote speakers, paper presenters, discussants, or virtual attendees symbolizes the true essence of global collaboration. Through this virtual conference, we aspire to foster critical dialogue, spark innovative ideas, and strengthen cross-disciplinary research networks that contribute to global sustainability and societal advancement. Let us take this opportunity to learn from one another, exchange insights, and build meaningful partnerships that continue beyond this conference.

On behalf of the organizing committee, I express my deepest gratitude to all partners, speakers, and participants for their unwavering support and contribution to the success of ICSRD-25.

May this conference be an engaging, enlightening, and inspiring experience for all. I wish you great success in your presentations and collaborations.

Best regards,

Dr. Sri Dwi Ari Ambarwati, S.E., M.Si.
Conference Chair of ICSRD-25

CONFERENCE CHAIR

Dr. Sri Dwi Ari Ambarwati, S.E., M.Si.

Head of the Research Center, Institute for Research and Community Service UPN Veteran Yogyakarta

Dr. Sri Dwi Ari Ambarwati, S.E., M.Si is a lecturer at the Management Study Program, Faculty of Economics and Business, UPN "Veteran" Yogyakarta. She earned her Bachelor's degree in Management from UPN "Veteran" Yogyakarta and her Master of Science in Management from Gadjah Mada University (UGM). In 2021, she obtained her Doctoral degree from Sebelas Maret University with a concentration in Finance. Dr. Ambar previously served as the Coordinator of the Capital Market Laboratory from 2010 to 2015 and is currently the Head of the Research Center at the Institute for Research and Community Service (LPPM), UPN "Veteran" Yogyakarta for the 2024–2028 period. She is actively recognized as a researcher, author, BKD assessor, Internal Quality Audit (AMI) assessor, speaker in various community empowerment programs, and reviewer for national journals. To date, Dr. Ambar has published around 70 articles in both international and national journals.

CO-CONFERENCE CHAIR

Assoc. Prof. Dr. Hendrati Dwi Mulyaningsih, S.E., M.M.

Founder & CEO of Research Synergy Foundation

Associate Professor. Dr. Hendrati Dwi Mulyaningsih is the chairperson and founder of Research Synergy Foundation that has shown great commitment on creating Global Network and Research Ecosystem. This GNR ecosystem has been developing since 2017 up to the present and having increasing numbers of the member up to more than 35.000 from all around the globe. Her passion in how to create impact and co creation value among all the stake holder of RSF has made her focus on upholding integrity in the scientific process through enhancement of RSF's support- support system as like Reviewer track, Scholarvein, Research Synergy Institute and Research Synergy Press. Thus, her work in this area has made her as the Nominee of Impactful Leadership Awards from Tallberg Foundation Sweden 2019 and 2024

As lecturer, she has been working in the University since 2008 – at present in Indonesia as Associate Professor and she hold her Doctoral Science of Management graduated from School of Business and Management Institute of Technology Bandung (SBM-ITB) and she has strong interest to her research project as well as her research field in Social Entrepreneurship, Social Innovation and Knowledge Management.

As researcher, her work studies and research on this research field made her be invited as reviewer in many reputable Scopus and WOS indexed journals and as keynote speaker in many International Conferences in Philippines, Thailand, Malaysia, Indonesia, Australia, Japan, and US. She also has shown her great passion on writing her research study into some books chapter, papers and contemporary scientific articles that has already been published in Springer, Emerald, Taylor and Francis and in many reputable international publishers. The terrific association between her professional experiences as researcher, lecturer, the certified Trainer & Coach combined with her wider horizon on networking in the research area made her establish the strong commitment on having global learning platform to accelerate knowledge through many workshops and research coaching in Research Synergy Institute as one of RSF's support system.

OPENING SPEECH

Dr. Dyah Sugandini, SE., M.Si.

Chief of Institute for Research and Community Service UPN Veteran Yogyakarta

Dyah Sugandini is an Associate Professor in the field of marketing management. Graduated with a bachelor's degree in management at UPN "Veteran" Yogyakarta, a master's degree in management at UGM, and obtained a doctorate at Gadjah Mada University Yogyakarta in 2013 with a concentration in marketing. She has been a lecturer at UPN Veteran Yogyakarta since 1995. Her areas of expertise are consumer behavior and marketing management. Has experience as a reviewer in several international journals. Has 38 Scopus-indexed papers, with an h-index of 11. Various international scientific meetings have been held, including in Malaysia, Hong Kong, Japan, Switzerland, Korea, England, etc. Active in several scientific research activities and community service. Become an expert on several research projects. She was the chairman of the LPPM at UPN "Veteran" Yogyakarta from 2024 until now.

KEYNOTE SPEAKER

Prof. Dr. Mohamad Irhas Effendi, M.Si.

Rector, Universitas Pembangunan Nasional Veteran Yogyakarta, Indonesia

Prof. Dr. Mohamad Irhas Effendi is the Rector of Universitas Pembangunan Nasional "Veteran" Yogyakarta and a distinguished scholar in strategic management, where he earned his Doctorate with honors (Cum Laude). Throughout his career, he has held several key academic and administrative positions, including Head of the Management Department, Vice Rector for Academic Affairs, and Head of the Institution for Research and Community Services. He also lectures in postgraduate programs at UPN "Veteran" Yogyakarta and Universitas Islam Indonesia. Beyond academia, he contributes as a National Research Reviewer for the Ministry of Education, Culture, Research, and Technology, and serves as a member of ISEI and an Expert Council member of ICMI. Prof. Effendi has written over 200 scholarly articles and several management books. His dedication has been recognized through numerous awards, including Presidential Loyalty Awards for 20 and 30 years of service, the LVRI Star, and the WIMAYA Star.

Prof. Pascualito B. Gatan

Vice President for Campuses,
Polytechnic University of the Philippines

KEYNOTE SPEAKER

Prof. Madya Dr. Rozita @ Uji Mohammed

Rector of Universiti Teknologi MARA, Cawangan Sabah, Malaysia

Associate Professor Dr. Rozita @ Uji Mohammed, currently serves as the Rector of Universiti Teknologi MARA (UiTM) Sabah, Malaysia, becoming the first woman to hold this position in the university's 50-year history. She holds a Doctorate in Islamic Finance (UMS), with a strong foundation in Finance and Banking Studies. Formerly a banker and head of credit, Dr. Rozita is also a certified business counsellor with extensive experience in entrepreneurship development and academic leadership for more than 20 years. Her remarkable career has earned numerous awards, including the Anugerah Wanita Cemerlang Sabah (2024), Anugerah Alumni Tersohor UiTM (2024), Anugerah Ikon Wanita Gemilang Sabah (2025) and Anugerah Ikon Wanita Antarabangsa Singapore (2025). Dr. Rozita continues to champion women's empowerment, community innovation, and cross-border academic collaboration.

MASTER OF CEREMONY

Santi Rahmawati, S.T., M.S.M.

Founder & Director of Global Network and Operation
Reserch Synergy Foundation

Santi is a Founder and Chief of Operating Officer (COO) of the Research Synergy Foundation (RSF). She actively engaged with scholars around the world for strengthening the Global Research Ecosystem. As the Director of Scholarvein, she creates, maintains, and develops the integrated system for managing international scientific conference and forum since 2017 up to 2024 and already give benefit to more than 16.457 participants coming from >87 countries. With the combination of engineering and management science educational background, she has built the optimum workflow for scholars to contribute more to the society and humanities. Santi holds her bachelor's degree of industrial engineering from Universitas Indonesia (UI). Furthermore, she had received her Master of Science Management (focusing on Entrepreneurship and Technology Management) from Institut Teknologi Bandung (ITB) in 2015. Santi has appointed as a Gateway Advisor in F1000Research (Scopus Q1) and Taylor & Francis Open Access Advisor (Scopus Q1, Q2 & WOS). She has already been an editor of three published books (both published by Routledge, Taylor & Francis), a reviewer in many reputable international journals, an author and co-authored multiple international research articles and book chapters.

SESSION CHAIRS

Prof. Ts. Dr. Suraini Abd-Aziz

Universiti Putra Malaysia, Malaysia

Prof. Ts. Dr. Suraini Abd Aziz is a professor at the Faculty of Biotechnology and Biomolecular Sciences, Universiti Putra Malaysia. Her expertise lies in biochemical engineering, with a focus on enzyme technology and industrial biotechnology. She holds a Ph.D. and Master's degree in Biochemical Engineering from the University of Wales Swansea, United Kingdom, and a Bachelor's degree in Clinical Biochemistry from Universiti Kebangsaan Malaysia. Prof. Suraini's work bridges academia and industry, advancing research in enzyme applications and biotechnology.

Dr. Leong Choi Meng

Swinburne University of Technology, Sarawak Campus, Malaysia

Choi-Meng Leong is a Lecturer at the Swinburne University of Technology Sarawak, Malaysia. Leong graduated with a Ph.D. degree in financial economics from the Universiti Malaysia Sarawak, Malaysia. Her research interests are financial economics and sustainable finance/economics. She has been honored with awards from conferences, including the Outstanding Paper Award and the Best Paper Award. In addition to publication, Leong also received internal and external research grants in financial economics. She is currently the Managing Editor of Journal of Responsible Tourism Management (JRTM).

Dr. Ronilo V. Aponte

Iloilo State University of Fisheries, Science, and Technology (ISUFST), Philippines

Dr. Ronilo Villan Aponte is an Associate Professor IV at the Iloilo State University of Fisheries Science and Technology (ISUFST), Main Campus, Tiwi Site. He earned his Ph.D. in Science Education major in Biology from WVSU (A.Y. 2018–2019) under the prestigious DOST-SEI CBPSME scholarship. A highly accomplished science research advisor, Dr. Aponte has guided student teams to international recognition, including Finalist and Grand Award honors at the 2018 Intel International Science and Engineering Fair (ISEF) and a Finalist placement at the 2020 Regeneron ISEF. His research focuses on innovative pedagogical approaches in STEM and applied science. He received the Best Paper Presenter Award at the Sinag at Balag International Conference for his study on design thinking in STEM education, and additional recognitions at the 2024 NOSTE International Conference for his work on game-based learning effectiveness.

Dr. Seyfeddin Neslinebi

Yıldırım Beyazıt University, Turkey

Dr. Seyfeddin Neslinebi is a seasoned expert in political science, human rights, and project management, with extensive experience in both academia and field research. As an Assistant Lecturer at Yıldırım Beyazıt University, Dr. Neslinebi has taught courses on Islamic Political Thought, Turkish Political History, and Turkey-EU Relations. His background includes serving as Director of Human Resources and General Coordinator for a joint project between UNHCR and the General Directorate of Migration Administration of Turkey (GDMD), overseeing a large team of interpreters and coordinating with Turkish officials to support refugee communities. Dr. Neslinebi's research experience includes fieldwork for Navanti Group, covering topics like public perceptions in southeastern Turkey, illegal migration, and cross-border smuggling. He also contributed to TUBİTAK's Human Rights Project, supporting several prominent Turkish NGOs. With a Ph.D. from Yıldırım Beyazıt University, he has further education from Istanbul Bilgi University and London Kaplan Academy. His professional journey spans roles as Foreign Relations Coordinator at TUMSİAD, editor for Mostar Journal, and contributor to various news outlets. Dr. Neslinebi's scholarly contributions include co-authoring an anthology on Islamic Political Thought, reflecting his commitment to advancing Turkey's socio-political research and analysis.

Ts. Dr. Yeo Boon Chin

Multimedia University, Malaysia

Dr. Yeo Boon Chin is an assistant professor at Multimedia University, engaged in various research areas including machine vision, thermal imaging, machine learning, soft computing, condition monitoring, and robotics. Some of the key projects he has been involved in include traffic condition monitoring, fall detection for elderly care, sleep quality monitoring using pressure sensors, surround-based water wave detection, and a web-controlled robotic arm, among others. Dr. Yeo has successfully guided numerous undergraduate and postgraduate students to achieve international innovation project awards, as well as securing journal publications, copyrights, and patents. These achievements have strategically established a technological foundation at the university, particularly in the fields of water surface activity sensing, robot positioning, and pressure sensor grids, supported by several fundings over the years. These developed technological foundations are expected to create more opportunities for both internal and external research collaborations.

Prof. Salihu Abdulwaheed Adelabu

Ibrahim Badamasi Babangida University, Nigeria

Prof. Salihu Abdulwaheed Adelabu is a scholar and public servant dedicated to advancing education, finance and public management. He obtained his PhD in Management Science (Public Management) from the prestegious Universiti Utara Malaysia, alongside dual Master's degrees in Islamic Finance & Banking and Business Administration. Over two decades in academia, he rose to the rank of Professor at Ibrahim Badamasi Babangida University, Lapai in Niger State of Nigeria, serving as Head of Department, Dean, and Director of Research Commercialization. My scholarship spans Islamic Economics, Public Finance, and Educational Policy, with numerous international publications and books.

In public service, he was Commissioner for Education, Science and Technology in Oyo State (2023–2025), driving reforms in curriculum, STEM, and teacher development. In May 2025, he was appointed Commissioner for Establishment and Training, focusing on civil service capacity building. My lifelong commitment is to knowledge, governance, and the empowerment of future generations.

Ts. Jacqueline Joseph

Universiti Teknologi MARA, Malaysia

Ts. Jacqueline Joseph is a lecturer at the Faculty of Plantation and Agrotechnology, with field of expertise is in Agronomy and a researcher with the Special Interest Group (SiG TaNI – Pertanian Nikel) at Universiti Teknologi MARA (UiTM), Sabah Branch, Kota Kinabalu Campus, focuses on sustainable agriculture and metal farming (agromining) using hyperaccumulator plant species for nickel recovery and green innovation. She is currently pursuing a PhD in Forestry Science at Universiti Malaysia Sabah, specialising in wood density assessment and aboveground biomass estimation. Ts. Jacqueline is actively involved in innovation in research and teaching & learning, and has received numerous accolades at national and international levels, including the Pensyarah Harapan 2023 award by the Kesatuan Kakitangan Akademik Universiti Teknologi MARA (MITASA).

Prof. Brian Ben C. Coronel, MAAL.

PATTS College of Aeronautics, Philippines

Brian Ben C. Coronel has spent several years as a PATTS College of Aeronautics faculty member. He is the former head of the Languages Department and currently serves as the Research and Accreditation Affairs Director at PATTS College of Aeronautics. He obtained his degree in Bachelor of Arts in Mass Communication major in Journalism with 21 units of Education and Master of Arts in Applied Linguistics with Education units at the Centro Escolar University. He took up short-term courses in language and linguistics, research-based teaching and learning, strategies in teaching, and educational administration. He is currently pursuing his Doctorate degree in Curriculum and Supervision at the same university. He has co-authored books in Basic English, Business Communication, and Filipino. He has also been invited as a resource speaker and judge on creative writing, storytelling, and public speaking at the Polytechnic University of the Philippines-San Juan, FEATI University, Olivarez College Parañaque, Manila Tytana Colleges, Lyceum of the Philippines University-Manila, and San Beda College - Alabang. He is the Secretary of the Speech Communication Organization of the Philippines (SCOP); an active member of the Philippine Society for Educational Research and Evaluation, Inc. (PSERE); Philippine Association for Graduate Education – National Capital Region (PAGE-NCR); Co-organizer of the Philippine Aviation Research Conference (PARC) and the Consortium of the South (CotS) Research Committee, and Accreditor of the Philippine Association of Colleges and Universities Commission on Accreditation (PACUCOA).

Dr. Aragon A. Dechimo Jr.

Philippine Normal University Visayas, Philippines

Dr. Aragon A. Dechimo Jr. is the Director for Research, Extension, Quality Assurance, and Development (REQAD) at the Philippine Normal University Visayas. He holds a Ph.D. in Environmental Science from the University of the Philippines Los Baños, where he conducted pioneering research on plant bioresource use patterns in the Northern Negros Natural Park. He serves as an Associate Member of the National Research Council of the Philippines (NRCP) and a Board Director of the National Organization of Science Teachers and Educators (NOSTE). His research spans environmental science, teacher education, biodiversity, ecology, and resource valuation. Dr. Dechimo has authored peer-reviewed publications in Biodiversitas, Philippine Journal of Science, and Springer Nature. He is also a regular invited expert of the Provincial Environment Management Office of Negros Occidental, contributing to biodiversity conservation and sustainable governance initiatives.

Dr. Ajis Lepit

Universiti Teknologi MARA, Cawangan Sabah, Malaysia

Dr. Ajis Lepit is a Lecturer at the Faculty of Applied Sciences, Universiti Teknologi MARA (UiTM), Sabah Branch, Malaysia. He holds a PhD in Advanced Materials from UiTM Shah Alam, Selangor, Malaysia and has extensive experience in physics, applied radiation, and materials science. His research focuses on radiation-induced grafting, polymer electrolyte membranes for fuel cells, wastewater electric generator and activated carbon materials. Dr. Ajis has published widely in international journals and presented at global conferences in Japan, Germany, Poland, China, and Southeast Asia. He is also active in STEM education outreach, green campus initiatives, and community-based environmental projects, including mangrove ecosystem conservation. A recipient of multiple innovation and service excellence awards, Dr. Ajis continues to promote sustainable science education and applied materials research in Malaysia and beyond.

Asst. Prof. Marvin M. Espiritu

Polytechnic University of the Philippines, Philippines

Mr. Marvin M. Espiritu, a dedicated Faculty Member with the rank of Assistant Professor IV and Admission and Registration Officer at the Polytechnic University of the Philippines – Pulilan Campus, Philippines, with 17 years of loyal and committed service in higher education. Throughout his academic career, he demonstrated a strong passion for teaching, student development, and institutional service. As an educator, he takes pride in delivering quality instruction that integrates theoretical knowledge with practical applications in business and management. In his administrative capacity, he ensures that admission and registration processes are efficient, transparent, and aligned with the university's standards of excellence.

Dr. Saddam Hazaea

Arab Open University, Saudi Arabia

Dr. Saddam Hazaea is an Assistant Professor at Arab open University, Saudi Arabia. He was working as a postdoctoral position in ESG assurance at the Faculty of Accounting, Southwestern University of Finance and Economics (SWUFE), China. He has been awarded a Ph.D. in Accounting from Yunnan University of Finance and Economics in 2022. His exceptional work and dedication to the field also earned him many Awards. Throughout his academic career, he has conducted extensive research on various functional domains, including Auditing, Corporate Governance , and Sustainability Assurance. His articles are published in top-tier academic journals, including, Borsa Istanbul Review, Environmental Science and Pollution Research, Meditari Accountancy Research, Corporate Governance, Sage Open, Humanities and Social Sciences Communications, and Frontiers in Energy Research, among others.

Engr. Michael Rey Fabian

PATTS College of Aeronautics, Philippines

Engr. Michael Rey R. Fabian is a graduate from PATTS College of Aeronautics and is accomplishing his master's degree at Mapua University. He is a Licensed Aeronautical Engineer and currently a college lecturer at PATTS College of Aeronautics, where he teaches subjects in the aviation technical courses, including aircraft powerplant systems, aviation safety, and engineering management. He holds certifications in Safety Officer 2 (SO2), Lean Six Sigma Yellow Belt, and ISO management systems. Before teaching, he held operational jobs in the aviation industry providing him with solid experience in flight operations, maintenance coordination, and regulatory compliance. With a strong commitment to the progress of aviation education, he combines academic training with actual industrial applications to educate future aviation professionals with the skills required for success.

Dr. Amarjit Kene

SVERI's College of Engineering, Pandharpur, India

Dr. Amarjit Prakashrao Kene, with a Ph.D. in Mechanical Engineering from IIT Kanpur, is a distinguished academic and researcher with extensive expertise spanning both theoretical and practical aspects of engineering. He is the Dean of Research & Development and an Associate Professor in the Mechanical Engineering Department at SVERI's College of Engineering, Pandharpur. In his leadership role, Dr. Kene is instrumental in driving research initiatives, fostering innovation, and mentoring future engineers to become industry-ready professionals. During his career, Dr. Kene has worked on diverse projects that blend cutting-edge technology with practical applications. His early work during his master's focused on optimizing the build orientation of 3D-printed products, where he developed 21 unique codes to simplify the process of slicing and tool path generation—advancing the efficiency and precision of additive manufacturing.

In his Ph.D., Dr. Kene made significant contributions to sensor fusion in conventional machining processes, improving reliability and predictive accuracy. He developed an analytical model integrating sensor data from various inputs to predict tool wear and other machining parameters. His approach proved more accurate than traditional methods like regression and neural networks, setting new standards for precision in machining. Beyond his technical work, Dr. Kene actively collaborates with industry partners, contributes to academic conferences, and has published in leading journals. His commitment to bridging the gap between academia and industry continues to inspire innovation, while his leadership within the institution promotes a culture of research excellence and continuous learning.

Assoc. Prof. Ts. Dr. Mohamad Faizal Ibrahim

Universiti Putra Malaysia, Malaysia

Associate Professor Ts. Dr. Mohamad Faizal Ibrahim is the Deputy Director of the Research Grant Management Section at Universiti Putra Malaysia. His work spans both research and science policy, where he is actively involved in national and international initiatives, including the British Academy–funded project on strengthening research governance in Malaysia, the National Education Reform, and the Planetary Health study under the Academy of Sciences Malaysia. He also chairs UPM's Open Science Policy, serves as Vice-President of the AFOB Malaysia Chapter, Executive Board Member of AFOB, and holds leadership roles in science policy and governance committees under YSN-ASM. Dr. Mohamad Faizal's research focuses on the bioprocessing of biological wastes into value-added products, integrating fermentation, extraction, purification, carbonisation, and activation processes. His work has generated sustainable bioproducts such as biobutanol, biohydrogen, enzymes, antioxidants, fish feed, essential oils, and activated carbon. He has published over 70 indexed papers (mostly in Q1 and Q2 journals), 11 book chapters, and 3 edited books, with 3 patents, 2 copyrights, and 1 trademark filed. His current Scopus h-index is 24 with more than 1,600 citations. Dr. Mohamad Faizal also serves on the editorial boards of BMC Biotechnology and Discover Applied Sciences, and as Guest Editor for Processes and Energies. He has led and collaborated in over 20 research and consultation projects valued at more MYR 9 million, and presented his work in more than 30 international conferences as a plenary, keynote, and invited speaker.

Dr. Salem Bahmaid

Arab Open University, Saudi Arabia

Dr. Salem Bahmaid is an Assistant Professor at the Arab Open University, Kingdom of Saudi Arabia. He holds a Ph.D. in Information Technology from Bharathiar University, India, a Master's degree in Information Technology from the same university, and a Bachelor's degree in Computer Applications from the University of Mysore. His research interests include Computer Networking, the Internet of Things (IoT), and Artificial Intelligence (AI).

Dr Sharifah Nurafizah Syed Annuar

Universiti Teknologi MARA, Cawangan Sabah, Malaysia

Dr. Sharifah Nurafizah Syed Annuar is a Senior Lecturer at Universiti Teknologi MARA (UiTM) Sabah Branch, where she has served since 2009. Her academic and professional interests lie in marketing, social marketing, and entrepreneurship, with a strong focus on community empowerment and sustainability. She has collaborated extensively with local authorities, NGOs, and social enterprises in Sabah on initiatives related to environmental awareness, social innovation, and community-based tourism. Dr. Sharifah has also served as the Deputy Rector for Research, Industry Linkages, Community, and Alumni Network in UiTM Sabah in 2019 and is currently an Associate Member of the Academy of Sciences Malaysia and member in Sabah Science, Technology and Innovation Development Council

Dr. Foong Soon Seng

University of Malaya, Malaysia

Dr. Foong Soon Seng is currently a Senior Lecturer in the Department of English, Faculty of Arts and Social Sciences, University of Malaya. His research interests include Feminist Writings (Women's Studies), Colonial & Post-Colonial Literature, and Malaysian Literature in English.

Prof. Madya Ts. Dr. Hendry Joseph

Universiti Teknologi MARA, Cawangan Sabah, Malaysia

Prof. Madya Ts. Dr. Hendry Joseph is a recognized expert in tropical crop production and protection, holding a PhD in Plant Pathology. He plays a pivotal role at Universiti Teknologi MARA (UiTM) Sabah, where he has held several leadership positions and gained considerable recognition within both academic and industry circles. In addition to serving as a Technical Advisor, Professional Technologist, and Consultant, he is also the Chief Operating Officer of a UiTM Sabah start-up company.

Dr. Hendry's ongoing research focuses on critical areas such as early detection of beetle infestations, agromining, and the conservation of native flora. He actively supervises postgraduate students and has received multiple awards for his contributions to research and innovation. As a dedicated educator, he teaches a range of courses in agriculture, plant pathology, and crop management, continually advancing knowledge in the field.

Asst. Prof. Joana Marie G. Bernardo

Polytechnic University of the Philippines -
Pulilan Campus, Philippines

Asst. Prof. Joana Marie G. Bernardo is an accomplished educator and business professional currently serving as Assistant Professor I and Head of Academic Programs at the Polytechnic University of the Philippines (PUP) Pulilan Campus. She is pursuing her Doctor in Business Administration at PUP Graduate School, Manila, and holds a Master in Business Administration from La Consolacion University Philippines. A licensed professional teacher, she graduated Cum Laude in Entrepreneurial Management from PUP Pulilan.

Her expertise centers on teaching business and entrepreneurship at both secondary and tertiary levels, where she has earned outstanding teaching performance ratings. Dr. Bernardo has actively participated in numerous academic seminars, research conferences, and training programs, presenting studies on entrepreneurship education and employee motivation. She has also advised several first-place winners in university business plan competitions. Recognized for her dedication, she has received multiple Outstanding Teacher Awards and continues to mentor future business leaders with passion and excellence.

CONFERENCE PROGRAM

Wednesday | October 15, 2025

https://icsrd-upnyk.com/ Organized by : Co-Hosted by: Cawangan Sabah

CONFERENCE PROGRAM
2nd International Conference on Sustainable Research and Development
VIRTUAL CONFERENCE: 15 October 2025

Wednesday, 15 October 2025

Jakarta Time (UTC+7)			*Dur'*	*Activity*
Main Room: ****Please note that ALL conference TIME is in Jakarta Time/ WIB/ UTC+7.*** ***Please check your time zone.***				**Join Zoom Meeting:** https://us06web.zoom.us/j/87479510769?pwd=rTklAftr7XD52rsYxUeN2SO6agviUn.1 **OR** https://bit.ly/ICSRD-Zoom **Meeting ID: 874 7951 0769** **Passcode: icsrd**
7:50	-	8:00	0:10	**Participant Login and Join Virtual Conference**
8:00	-	8:10	0:10	Welcoming and Conference Agenda announcement by MC
8:10	-	8:20	0:10	**Listening the national anthem "Indonesia Raya" and Mars "Bela Negara"**
8:20	-	8:30	0:10	**Opening Speech of ICSRD-25** **Dr. Dyah Sugandini, SE., M.Si.** Chief of the Institute for Research and Community Service Universitas Pembangunan Nasional Veteran Yogyakarta, Indonesia
8:30	-	8:35	0:05	Token of Appreciation for Opening Speech by Associate Professor Dr. Hendrati Dwi Mulyaningsih, S.E., M.M. (Founder & CEO of Research Synergy Foundation)
8:35	-	8:50	0:15	**Global Research Ecosystem Introduction** **Associate Professor Dr. Hendrati Dwi Mulyaningsih, S.E., M.M.** Co-Conference Chair of ICSRD-25 Founder & CEO of Research Synergy Foundation
8:50	-	8:55	0:05	Token of Appreciation for Global Research Ecosystem Introduction by Dr. Dra. Machya Astuti Dewi, M.Si. (Deputy Rector for Academic Affairs and Information Systems at Universitas Pembangunan Nasional Veteran Yogyakarta, Indonesia)
8:55	-	9:10	0:15	**Token of Appreciation for Co-Host** by Dr. Hendro Widjanarko, MM. (Deputy rector for Student Affairs, Alumni, and Cooperation at Universitas Pembangunan Nasional Veteran Yogyakarta, Indonesia) **&** **Virtual IA, MOA signing cerempny between institutions for international partnership:** **LPPM Universitas Pembangunan Nasional Veteran Yogyakarta** **Polytechnic University of the Philippines (PUP), Pulilan, Bulacan Campus, Philippines** **Universiti Teknologi MARA (UiTM) Cawangan Sabah Malaysia**
9:10	-	9:15	0:05	**E-Group Photo**
9:15	-	9:40	0:25	**Keynote Speaker :** **Prof. Dr. Mohamad Irhas Effendi, M.Si.** Rector, Universitas Pembangunan Nasional Veteran Yogyakarta, Indonesia
9:40	-	9:45	0:05	Token of Appreciation for Keynote Speaker by Dr. Sri Dwi Ari Ambarwati, S.E., M.Si. (Conference Chair of ICSRD-25)
9:45	-	10:10	0:25	**Keynote Speaker :** **Prof. Pascualito B. Gatan** Vice President for Campuses, Polytechnic University of the Philippines
10:10	-	10:15	0:05	Token of Appreciation for Keynote Speaker by Dr. Ir. Sutarto, M.T. (Deputy Rector for Financial Planning and General Affairs at Universitas Pembangunan Nasional Veteran Yogyakarta, Indonesia)
10:15	-	10:40	0:25	**Keynote Speaker :** **Prof. Madya Dr. Rozita @ Uji Mohammed** Rector, Universiti Teknologi MARA, Cawangan Sabah, Malaysia
10:40	-	10:45	0:05	Token of Appreciation for Keynote Speaker by Dr. Avido Yuliestyan, ST (Secretary of the Institute for Research and Community Service at Universitas Pembangunan Nasional Veteran Yogyakarta, Indonesia)

10:45	-	10:50	0:05	**Session Chair Introduction at each parallel breakout rooms (Main Room and Breakout Rooms 1 to 9)** **Main Room: Dr. Leong Choi Meng - Swinburne University of Technology, Sarawak Campus, Malaysia** **Breakout Room 1: Dr. Ronilo V. Aponte - Iloilo State University of Fisheries, Science, and Technology (ISUFST), Philippines** **Breakout Room 2: Dr. Amarjit Kene - SVERI's College of Engineering, Pandharpur, India** **Breakout Room 3: Asst. Prof. Joana Marie G. Bernardo - Polytechnic University of the Philippines - Pulilan Campus, Philippines** **Breakout Room 4: Ts. Jacqueline Joseph - Universiti Teknologi MARA, Malaysia** **Breakout Room 5: Ts. Dr. Yeo Boon Chin - Multimedia University, Malaysia** **Breakout Room 6: Prof. Brian Ben C. Coronel, MAAL. - PATTS College of Aeronautics, Philippines** **Breakout Room 7: Dr. Aragon A. Dechimo Jr. - Philippine Normal University Visayas, Philippines** **Breakout Room 8: Dr Ajis Lepit - Universiti Teknologi MARA, Cawangan Sabah, Malaysia** **Breakout Room 9: Dr. Foong Soon Seng - University of Malaya, Malaysia**
10:50	-	12:05	1:15	**Academic Online Presentation Session 1 - maximum 5 presenters : 15 minutes/presenter** **Main Room** **Breakout Room 1-9**
12:05	-	12:15	0:10	**Awarding Certificate of Presentation, Testimonial, and Post-conference information announcement**
12:15	-	13:00	0:45	**Lunch Break** (Video played: ICSRD Program Highlight, LPPM Universitas Pembangunan Nasional Veteran Yogyakarta Profile, Research Synergy Foundation Profile, Polytechnic University of the Philippines (PUP), Pulilan, Bulacan Campus, Philippines, and Universiti Teknologi MARA (UiTM) Cawangan Sabah Malaysia Profile)
				Academic Online Parallel Presentation Session
13:00	-	13:10	0:10	**Announcement and preparation of Academic Online Parallel Presentation Session**
13:10	-	13:15	0:05	**Session Chair Introduction at each parallel breakout rooms (Main Room and Breakout Rooms 1 to 9)** **Main Room: Dr. Seyfeddin Neslinebi - Yıldırım Beyazıt University, Turkey** **Breakout Room 1: Prof. Madya Ts. Dr. Hendry Joseph - Universiti Teknologi MARA, Cawangan Sabah, Malaysia** **Breakout Room 2: Dr. Saddam Hazaea - Arab Open University, Saudi Arabia** **Breakout Room 3: Assoc. Prof. Ts. Dr. Mohamad Faizal Ibrahim - Universiti Putra Malaysia, Malaysia** **Breakout Room 4: Dr. Salem Bahmaid - Arab Open University, Saudi Arabia** **Breakout Room 5: Dr Sharifah Nurafizah Syed Annuar - Universiti Teknologi MARA, Cawangan Sabah, Malaysia** **Breakout Room 6: Engr. Michael Rey Fabian - PATTS College of Aeronautics, Philippines** **Breakout Room 7: Asst. Prof. Marvin M. Espiritu - Polytechnic University of the Philippines, Philippines** **Breakout Room 8: Prof. Salihu Abdulwaheed Adelabu - Ibrahim Badamasi Babangida University, Nigeria** **Breakout Room 9: : Prof. Ts. Dr. Suraini Abd-Aziz - Universiti Putra Malaysia, Malaysia**
13:15	-	15:45	2:30	**Academic Online Presentation Session 2 - maximum 10 presenters : 15 minutes/presenter** **Main Room** **Breakout Room 1-9**
15:45	-	16:00	0:15	**Awarding Certificate of Presentation, Testimonial, and Post-conference information announcement**
16:00	-	16:15	0:15	**Short Break** Score recapitulation Best Presenters
16:15	-	16:30	0:15	**Awarding Ceremony** **Best Presentations** **Best Papers** **Session Chairs Recognition** - given by UPNYK representative: Dhimas Arief Dharmawan, Ph.D
16:30	-	16:40	0:10	**Closing Speech of ICSRD-25** **Dr. Sri Dwi Ari Ambarwati, S.E., M.Si.** **Conference Chair of ICSRD-25** Head of the Research Center of the Institute for Research and Community Service, Universitas Pembangunan Nasional Veteran Yogyakarta, Indonesia
				Supported by: SCHOLAR VEIN · REVIEWER TRACK · RESEARCH SYNERGY INSTITUTE · RESEARCH SYNERGY PRESS · GLOBAL RESEARCH COMMUNITY

Wednesday, October 15, 2025

ICSRD-25, Academic Online Presentation Session 1 - MAIN ROOM

Join Zoom Meeting:
https://us06web.zoom.us/j/87479510769?pwd=rTkIAftr7XD52rsYxUeN2SO6agviUn.1
OR
https://bit.ly/ICSRD-Zoom

Meeting ID: 874 7951 0769
Passcode: icsrd

Time: 10:45 - 12:05 (UTC+7) *Please note that ALL conference TIME is in Jakarta time UTC+7. Please check your time zone.

Session Chair: Dr. Leong Choi Meng - Swinburne University of Technology, Sarawak Campus, Malaysia

Track Economics

Paper ID	Presenter	Paper Title
ICD25106	Alfistia Maradidya	Towards Resilient Sustainability: An Adaptive Model of Risk Management Integration in Sustainability Accounting for High-Risk Industries
ICD25142	Purwiyanta	The Nexus of Foreign Capital Flows and Stock Index: Evidence From Indonesia
ICD25126	Diah Lufti Wijayanti	Environmental Cost Evaluation of Food Industry Waste
ICD25151	Rodhiah Umaroh	Multidimensional Energy Poverty Deprivation Among Households in Yogyakarta, Indonesia
ICD25153	Jamzani Sodik	The Impact of Urbanization on Income Inequality in Indonesia

Wednesday, October 15, 2025

ICSRD-25, Academic Online Presentation Session 1 - BREAKOUT ROOM 1

Join Zoom Meeting:
https://us06web.zoom.us/j/87479510769?pwd=rTkIAftr7XD52rsYxUeN2SO6agviUn.1
OR
https://bit.ly/ICSRD-Zoom

Meeting ID: 874 7951 0769
Passcode: icsrd

Time: 10:45 - 12:05 (UTC+7) *Please note that ALL conference TIME is in Jakarta time UTC+7. Please check your time zone.

Session Chair: Dr. Ronilo V. Aponte - Iloilo State University of Fisheries, Science, and Technology (ISUFST), Philippines

Track Agricultural Engineering

Paper ID	Presenter	Paper Title
ICD25128	Didi Saidi	The Effect of a Mixture of Leaf Waste and Ash With a Bioactivator on Compost Characteristics and Corn Growth
501062	Bagus Muhammad Akbar	Design of Internet of Things (IoT) Based Indoor Hydroponic System for Pagoda Mustard (Brassica rapa subsp. narinosa)
827156	Bambang Supriyanta	Soil Quality Enhancement for Sustainable Shallot (Allium Ascalonicum L.) Cultivation in Central Kalimantan Province

Track Smart Agriculture

Paper ID	Presenter	Paper Title
ICD25216	Nurul Alam Mohd Yaakub	IoT Adoption in Agriculture: Linking Technology Readiness, Acceptance and Entrepreneurial Ambidexterity Among Small-scale Farmers in Sabah

Track Food Security

Paper ID	Presenter	Paper Title
ICD25104	Jacqueline Olivia Permata	Responsibility of PSB (Photosynthetic Bacteria) and Chitosan on the Growth of Banana Lase (Musa Acuminata L.)

Wednesday, October 15, 2025

ICSRD-25, Academic Online Presentation Session 1 - BREAKOUT ROOM 2

Join Zoom Meeting:
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Meeting ID: 874 7951 0769
Passcode: icsrd

Time: 10:45 - 12:05 (UTC+7) *Please note that ALL conference TIME is in Jakarta time UTC+7. Please check your time zone.

Session Chair: Dr. Amarjit Kene - SVERI's College of Engineering, Pandharpur, India

Track Mechanical Engineering

Paper ID	Presenter	Paper Title
ICD25101	Francisco Javier	Predictive Model of EV Purchased Among Caviteños Towards the Gaps and Policy Redirection in Philippine Energy Plan
368143	Andika Septian Niko	Shape Memory Alloys: Fundamental, Microstructure Property and Emerging Trends in Industrial Applications
624924	Muhammad Ichsanudin	Technical Feasibility Study of Resistance Spot Welding on Al 2024-T42 Sheet in Accordance With AWS D17.2
592201	Nafira Kartika	Analysis of the Carburizing Process Using a Batch Atmosphere Furnace

Track Industrial Engineering

Paper ID	Presenter	Paper Title
ICD25107	Yuni Siswanti	Increasing Dishwashing Soap Production Capacity Through the Implementation of Mixer Machines in Small and Medium Enterprises (Case Study on the Yogyakarta Clean SME)

Wednesday, October 15, 2025

ICSRD-25, Academic Online Presentation Session 1 - BREAKOUT ROOM 3

Join Zoom Meeting:
https://us06web.zoom.us/j/87479510769?pwd=rTkIAftr7XD52rsYxUeN2SO6agviUn.1
OR
https://bit.ly/ICSRD-Zoom

Meeting ID: 874 7951 0769
Passcode: icsrd

Time: 10:45 - 12:05 (UTC+7) *Please note that ALL conference TIME is in Jakarta time UTC+7. Please check your time zone.

Session Chair: Asst. Prof. Joana Marie G. Bernardo - Polytechnic University of the Philippines - Pulilan Campus, Philippines

Track Social Science

Paper ID	Presenter	Paper Title
ICD25103	Florence Robles - Tenorio	Student-Athlete Satisfaction in a Philippine Higher Education: Insights for Institutional Support and Sports Development
ICD25102	Iva Rachmawati	From Axis to Artifact: Materializing Yogyakarta's Cultural Philosophy in Souvenirs
ICD25135	Retno Hendariningrum	Cultural Literacy for Preserving the Cosmological Axis of Yogyakarta: A UNESCO World Heritage Site in Indonesia
ICD25140	Panji Dwi Ashrianto	A Media Ecology Study of Community Radio in Yogyakarta
760982	Krisolita Dwifa Santoso	The Communicative Role of Social Media Content Creators on Instagram in Advancing Sharia Investment Literacy

Wednesday, October 15, 2025

ICSRD-25, Academic Online Presentation Session 1 - BREAKOUT ROOM 4

Join Zoom Meeting:
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OR
https://bit.ly/ICSRD-Zoom

Meeting ID: 874 7951 0769
Passcode: icsrd

Time: 10:45 - 12:05 (UTC+7) *Please note that ALL conference TIME is in Jakarta time UTC+7. Please check your time zone.

Session Chair: Ts. Jacqueline Joseph - Universiti Teknologi MARA, Malaysia

Track Agricultural Economics

Paper ID	Presenter	Paper Title
ICD25176	Dino Danao	Geographical Indication and the Business Potential of Masbate Carmelado
ICD25131	Zulfa Nur Auliatun Nissa	Agricultural Performance and Its Potential Role Amid Manufacturing Industry Contraction and Employment Challenges in Solo Raya
ICD25125	Dwi Aulia Puspitaningrum	Downstreaming of Spirulina Derivative Products and Their Role in Reducing Stunting Incidence in the Special Region of Yogyakarta

Track Sustainable Agriculture

Paper ID	Presenter	Paper Title
ICD25227	Susila Herlambang	Coconut Shell Biochar and Sheep Manure for Food Security of Maize on Samas Coastal Sandy Land
ICD25188	Anjar Cahyaningtyas	Isolation and Propagation of Methomyl-Degrading Bacteria From Pesticide-Polluted Land

Wednesday, October 15, 2025

ICSRD-25, Academic Online Presentation Session 1 - BREAKOUT ROOM 5

Join Zoom Meeting:
https://us06web.zoom.us/j/87479510769?pwd=rTklAftr7XD52rsYxUeN2SO6agviUn.1
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https://bit.ly/ICSRD-Zoom

Meeting ID: 874 7951 0769
Passcode: icsrd

Time: 10:45 - 12:05 (UTC+7) *Please note that ALL conference TIME is in Jakarta time UTC+7. Please check your time zone.

Session Chair: Ts. Dr. Yeo Boon Chin - Multimedia University, Malaysia

Track Chemical Engineering

Paper ID	Presenter	Paper Title
900764	Putra Samuel Lande Nono Fono	Sustainable Utilization of K-Humate Coal Residue into Bead Adsorbents for Cu(II) Removal
ICD25219	Nina Anggita Wardani	Anaerobic Digestion Versus Composting: A Comprehensive Review on Waste Stabilization, Resource Recovery, and Sustainability
ICD25148	Renung Reningtyas	Photocatalytic Effect of Zinc Oxide on the Degradation of Crystal Violet Dye Wastewater Under Visible Light
ICD25182	Yulius Deddy Hermawan	Overcoming Dead Time in Thermal Processes: A Comparative Evaluation of PID-SP and PID-IMC Control Strategies

Wednesday, October 15, 2025

ICSRD-25, Academic Online Presentation Session 1 - BREAKOUT ROOM 6

Join Zoom Meeting:
https://us06web.zoom.us/j/87479510769?pwd=rTklAftr7XD52rsYxUeN2SO6agviUn.1
OR
https://bit.ly/ICSRD-Zoom

Meeting ID: 874 7951 0769
Passcode: icsrd

Time: 10:45 - 12:05 (UTC+7) *Please note that ALL conference TIME is in Jakarta time UTC+7. Please check your time zone.

Session Chair: Prof. Brian Ben C. Coronel, MAAL. - PATTS College of Aeronautics, Philippines

Track Education

Paper ID	Presenter	Paper Title
988658	Tedy Agung Cahyadi	Harmonization of the Internal and External Quality Assurance System Instruments at UPN 'Veteran' Yogyakarta Based on the Regulation of the Minister of Higher Education, Science, and Technology No. 39/2025
ICD25154	Ana Mariel Eve M. Abairo	Developing a Sustainable Community Extension Program in Teacher Education Through Longitudinal School-to-School Work Immersion
ICD25150	Adam Raka Ekasara	Developing a Learning Outcomes Assessment Model for Geological Engineering Education Based on OBE and CQI Framework

Wednesday, October 15, 2025

ICSRD-25, Academic Online Presentation Session 1 - BREAKOUT ROOM 7

Join Zoom Meeting:
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https://bit.ly/ICSRD-Zoom

Meeting ID: 874 7951 0769
Passcode: icsrd

Time: 10:45 - 12:05 (UTC+7) *Please note that ALL conference TIME is in Jakarta time UTC+7. Please check your time zone.

Session Chair: Dr. Aragon A. Dechimo Jr. - Philippine Normal University Visayas, Philippines

Track Agricultural Science

Paper ID	Presenter	Paper Title
ICD25121	Audrey Pramudhita Kamil	Effectiveness of Mixing Natural Attractants for Trapping Fruit Flies in Snake Fruits Plantations
ICD25197	Partoyo Partoyo	The Effect of Coal-Based Humic Acid Fertilizer on Soil Properties and Mustard Growth
ICD25186	Ali Munawar	Enhancing Regenerative Agriculture Systems in Karst Landscape Based on Biophysical Properties and Farmers' Practices
ICD25149	Aurelia Danadyaksa	Inventory of Cacao Diseases in Kulon Progo Regency
ICD25204	Heti Herastuti	Application of Organic Fertilizer and Coconut Water to Improve the Growth of Butterfly Tree (Bahunea purpurea L.) in Karst Land

Wednesday, October 15, 2025

ICSRD-25, Academic Online Presentation Session 1 - BREAKOUT ROOM 8

Join Zoom Meeting:
https://us06web.zoom.us/j/87479510769?pwd=rTklAftr7XD52rsYxUeN2SO6agviUn.1
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Meeting ID: 874 7951 0769
Passcode: icsrd

Time: 10:45 - 12:05 (UTC+7) *Please note that ALL conference TIME is in Jakarta time UTC+7. Please check your time zone.

Session Chair: Dr Ajis Lepit - Universiti Teknologi MARA, Cawangan Sabah, Malaysia

Track Mineral Technology

Paper ID	Presenter	Paper Title
ICD25105	Edy Nursanto	The Influence of Coal Characteristics on Coke Formation in Indonesia's Steel Industry
ICD25168	Anky Andra Widha Rezzatama	Groundwater Surface Contour Modeling Using Kriging Method Around JJLS, Purwosari District, Gunung Kidul
ICD25195	Ilham Firmansyah	Hydrogeochemical Modeling of Alteration and Precipitation Minerals in Hot Springs and Underground Mine Waters Using PHREEQC
ICD25165	Dhia Ul Faruq Shafarian	Copper Deportment in a VMS-Hosted Ore from Wetar via Diagnostic Sequential Leaching
ICD25226	Azhar Ramadhan	Recovery of Neodymium from Pelabuhan Ratu Coal Fired Power Plant: A Comparative Study of Acid Leaching Reagents on Coal Fly Ash

Wednesday, October 15, 2025

ICSRD-25, Academic Online Presentation Session 1 - BREAKOUT ROOM 9

Join Zoom Meeting:
https://us06web.zoom.us/j/87479510769?pwd=rTklAftr7XD52rsYxUeN2SO6agviUn.1
OR
https://bit.ly/ICSRD-Zoom

Meeting ID: 874 7951 0769
Passcode: icsrd

Time: 10:45 - 12:05 (UTC+7) *Please note that ALL conference TIME is in Jakarta time UTC+7. Please check your time zone.

Session Chair: Dr. Foong Soon Seng - University of Malaya, Malaysia

Track Communication Studies

Paper ID	Presenter	Paper Title
ICD25200	Khuswatun Hasanah	Hybrid Professionalism in Platformized Journalism: Personal Branding, Professional Identity, and Career Attractiveness
ICD25224	Susilastuti Dwi Nugraha Jati	Patterns of Repertoire Conflict in Indonesia (A Study of #Dark Indonesia News on Detik.com)
ICD25215	Revta Fariszy	Evaluation of Emotion Detection Using CNN VGG16 and Hybrid QCNN for Enhancing Digital Content Personalization
ICD25147	Prayudi Prayudi	Developing a Crisis Communication Model for the Mining Industry
ICD25190	Edwi Arief Sosiawan	Reframing Historical Communication for Digital-Native Youth: A Comparative Case Study of Adolescents in Yogyakarta and Global Implications for Civic Identity

Wednesday, October 15, 2025

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Session Chair: Dr. Seyfeddin Neslinebi - Yıldırım Beyazıt University, Turkey

Track Political Science

Paper ID	Presenter	Paper Title
ICD25141	Sri Issundari	Paradiplomacy and the Role of Local Actors: A Case Study of Bleberan Village in Collaboration With Gyeongsangbukdo, South Korea

Track Policy Studies

Paper ID	Presenter	Paper Title
ICD25173	Arika Bagus Perdana	Decentralization and the Transformation of Solid Waste Governance in Sleman Regency: A Preliminary Review
ICD25161	Eni Muryani	Development of the Massive Open Online Course (MOOC) KKN UPN "Veteran" Yogyakarta Student Preparation and Examination System Based on Participant Needs and Experiences

Track International Relations

Paper ID	Presenter	Paper Title
ICD25111	Agussalim Msi, Ph.D	Veto and the UN Security Council's Failure to Resolve the Israeli-Palestinian Conflict
ICD25134	Machya Astuti Dewi	International Migration and Terrorism in Indonesia: Security Challenges and Government Policy
ICD25163	Cahyo Nugroho	Mapping Indonesia Relation to BRICS: Two Level Game Theory Approach
ICD25192	Fathania Queen Genisa	Reflexive Governance: ASEAN in Energy Transition
ICD25223	Aryanta Nugraha	Indonesia's Potential Roles in BRICS

Track Communication studies

Paper ID	Presenter	Paper Title
ICD25235	Sika Nur Indah	The Role of Digital Media in Transforming the Communication Landscape and Its Implications for Communication Education in Indonesia

Wednesday, October 15, 2025

ICSRD-25, Academic Online Presentation Session 2 - BREAKOUT ROOM 1

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Session Chair: Prof. Madya Ts. Dr. Hendry Joseph - Universiti Teknologi MARA, Cawangan Sabah, Malaysia

Track Geology

Paper ID	Presenter	Paper Title
ICD25179	Baghaskara Hanintya Binar	Volcanic Facies of Sedringo Volcano Dieng Volcanic Complex, Indonesia
ICD25209	Nandra Eko Nugroho	Landslide Risk Reduction Through Early Warning System Development in Sambirejo Village, Jombang, Indonesia

Track Chemical Engineering

Paper ID	Presenter	Paper Title
ICD25108	Retno Dwi Nyamiati	Influence of Acetyl Content and Degree of Substitution on the Structural Properties of Cellulose Acetate for Pressure Retarded Osmosis
ICD25109	Renung Reningtyas	Fabrication and Performance Evaluation of CA–PEG–PVC/GO Nanocomposite Membranes Prepared by Phase Inversion for Desalination in Drinking Water Treatment
ICD25120	Muhammad Yaser Mufid; Ryan Keane Mahardika Pratama	Influence of pH and Pre-treatment on Biogas Production in Anaerobic Digestion: A Review

Track Electrical Engineering

Paper ID	Presenter	Paper Title
ICD25152	Michel Pierce Tahya	Deep Learning Approaches for Batak Script Recognition: A Literature Review
ICD25207	Muhammad Almas Farros Dhiyaulhaq	Web-Based ISBN Registration System Development at LPPM UPN "Veteran" Yogyakarta Using the RAD Method
ICD25208	Dhimas Arief Dharmawan	The Role of Generative AI in Agricultural Game Assets Prodiction: A Survey

Track Mineral Technology

Paper ID	Presenter	Paper Title
ICD25118	Ignasius Pratama	The Evolution of Mining Regulations in Indonesia: Legal Framework, Implementation, and Challenges
ICD25117	Ahmad Alfarizi	The Effect of HNO_3 Concentration Variations on the Recovery of REEs from Coal Fly Ash Through Hydrometallurgical Processes

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Track Management

Paper ID	Presenter	Paper Title
ICD25114	Asri Sekar Mawar Firdausi	Customer Relationship Management (CRM) Based Artificial Intellegent (AI): A Bibliometric Analysis
ICD25164	Agus Sukarno	Accuracy Test of Technical Analysis Using Ichimoku Kinko Hyo, Moving Average Convergence Divergence, and Relative Strength Index on Stock Price F Companies Listed in The Infobank15 Index
ICD25130	Sri Dwi Ari Ambarwati	The Impact of Bank Health on the Value of Banking Sector Companies Listed on the IDX 2020-2023
ICD25129	Sri Dwi Ari Ambarwati	Influence of Underwriter Reputation, Firm Size, Profitability, and offering Size on Indonesia IPO Underpricing
ICD25127	Septyo Uji Pratomo	Enhancing the Role of ISO/IEC 17025:2017 Accredited Laboratories in Supporting Tri Dharma Perguruan Tinggi at Geological Engineering Department of UPN "Veteran" Yogyakarta
ICD25198	Nina Fapari Arif	Tourism in Supporting Indonesia's Creative Industry: Ansoff Matrix Approach
ICD25144	Hadi Oetomo	Understanding Green Purchase Intention Through the Integration of TPB and NAT in Special Region of Yogyakarta (DIY)
ICD25115	R. Heru Kristanto Hc	The Influence of Future Time Perspective, Financial Risk Tolerance, and Knowledge of Financial Planning for Retirement on the Retirement Saving Behavior of SMEs Entrepreneurs in Sleman Regency
ICD25202	Alvian Alvin Mubarok	The Role of Lean Operations on Company Performance Mediated by Six Sigma at the Wonosobo Regional Public Service Agency (BLUD)
ICD25146	Rezky Saputra	Exploring the Role of Social Media Interaction in Linking Eco Destination Image and Visiting Motivation to Tourist Visiting Behavior

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Session Chair: Assoc. Prof. Ts. Dr. Mohamad Faizal Ibrahim - Universiti Putra Malaysia, Malaysia

Track Earth Science

Paper ID	Presenter	Paper Title
ICD25177	Dessy Apriyanti	Comparative Study Between Object-Based Image Analysis Using Mean Shift And Multiresolution Segmentation Algorithms For Green Open Space Identification: Case Study in Sleman Regency
ICD25132	Septyo Uji Pratomo	Geoecological-Based Strategy for Ecosystem Improvement in Volcanic Zones: A Preliminary Study from Jurang Jero Area, Merapi National Park
ICD25162	Rahmawati Fitrianingtyas	Subsurface Lithologi Modelling of Landslide-Prone Areas in Sriharjo, Imogiri, Bantul Using the Geoelectrical Method
ICD25210	Kharisma Idea	Petrographic Analysis and Facies Interpretation of the Mundu Formation Carbonates in Gunung Pegat, East Java Implications for Reservoir Potential
ICD25112	Azhar Faari Fatahillah	The Effect of Divalent Ion Addition to Rhamnolipids Solution Through Fluid-to-Fluid Testing for Enhanced Oil Recovery: A Review
ICD25113	Rahma Mustika	Effect of Rhamnolipid Biosurfactant on Enhanced Oil Recovery Through Imbibition Performance of Crude Oils: A Literature Review
267185	Fadhlan Barrul Azmi	Salinity Effects on Anionic AEC Surfactant With n-Decane: IFT, Phase Behavior, Solubilization, Microemulsion Viscosity
ICD25193	Naraya Ramadhani Padalas	Integrated Study of Geochemical, Geomechanical, and Mineralogy Leak Potential on Caprocks With Shale: A Review
ICD25201	Wahyu Hidayat	Aftershock Identification in Deep Underground Mines Using DBSCAN Clustering: A Synthetic Data Approach
ICD25137	M. Fachrul Rozi Kurniawan	Evaluation of Geoelectrical Data Stability: Manual Quadrupole vs. Multi-Electrode Switch Panel Prototype

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Session Chair: Dr. Salem Bahmaid - Arab Open University, Saudi Arabia

Track Computer Science

Paper ID	Presenter	Paper Title
ICD25175	Mangaras Yanu Florestiyanto	Hybrid-Quantum CNN for Enhanced Facial Emotion Recognition: A Comparative Study with VGG16 on the RAF-DB Dataset
ICD25211	Andi Nurkholis	Geographic Information System for Cocoa Land Suitability Based on Spatial ID3
ICD25167	Rochmat Husaini	Comparison of Semi-Supervised Learning Performance in Indonesian Sentiment Analysis: An Empirical Study Between Statistical Machine Learning and Deep Learning Approaches
ICD25138	Yuli Fauziah	Hybrid Sentiment Intelligence: A CNN-Based Analysis of Visitor Experience at the "History of Java" Museum in Yogyakarta
ICD25205	Ni Putu Atmelia Putri	YOLOv11-Based Object Detection for 3D City Modeling: A Study on Jatirejo Area, Sleman
ICD25170	Aldila Putri Linanzha	Automated Penetration Testing Using the Common 1000 Password Dataset and Deep Learning Method on Wireless Networks
ICD25119	Agus Sasmito Aribowo	Dynamic Hyperparameter Tuning in Deep Co-Training for Semi-Supervised Sentiment Analysis on Social Media
ICD25174	Awang Hendrianto Pratomo	Classification of Merapi Volcano Images Based On HSV Color Feature Extraction And Local Binary Pattern Texture Feature Extraction Using The K-Nearest Neighbors Method

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Session Chair: Dr Sharifah Nurafizah Syed Annuar - Universiti Teknologi MARA, Cawangan Sabah, Malaysia

Track Social Science

Paper ID	Presenter	Paper Title
ICD25225	Susanta Susanta	The Effect of e-Satisfaction on Customer Engagement and e-Loyalty: A Study in the E-Commerce Industry
ICD25157	Hani Subagio	Analysis of the Influence of Environmental Awareness, Subjective Norms and Basic Human Conditions on Green Purchase Behavior (Study on the Implementation of Paid Plastic Bag Policy)
410688	Satrio Tegar Gunung Koraag	Mediation of Audit Quality on the Effect of Capital Structure and Firm Size on Firm Value.
ICD25214	Rudi Wibowo	Foreign Cultural Literacy as a Strategy to Increase the Competitiveness of Tourist Villages
ICD25185	Hendro Widjanarko	The Effect of Networking Capacity on Social Capital and Its Implications for Ease of Access to Financial Capital
ICD25158	Humam Santosa Utomo	Implementation of Circular Economy in Nature Tourism Management: A Strategy Towards Sustainable Performance

Track Tourism Management

Paper ID	Presenter	Paper Title
ICD25172	Dinda Dewi Aisyah	Comparative Analysis of the Potential and Attractiveness of Tourism Villages for Sustainable Development
ICD25160	Rezky Saputra	Reframing MSME Competitiveness: Integrating Digital Transformation, Customer-Centric Value, and Green Innovation for Sustainable Advantage
ICD25145	Salsabila Lintang Nabila	Evaluating the Tourism Supply Chain Performance in Wukirsari Cultural Village, Yogyakarta: An Importance-Performance Analysis

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Session Chair: Engr. Michael Rey Fabian - PATTS College of Aeronautics, Philippines

Track Agroecology

Paper ID	Presenter	Paper Title
ICD25189	Vinni Lovita	Influence of Volcanic Lithology on Soil Physical Properties in the Watugede Sub-watershed

Track Fisheries And Aquatic Resources Management

Paper ID	Presenter	Paper Title
ICD25133	Aura Dhamira	Seasonal Dynamics and Production Risk of Hairtail at Sadeng Fishing Port, Indonesia (2019-2024)

Track Environment Studies

Paper ID	Presenter	Paper Title
ICD25136	Farida Afriani Astuti	Incentive Mechanisms Through Payments for Environmental Services in Sustainable Agriculture, Sleman, Indonesia
ICD25124	Ekha Yogafanny	Assessment of Groundwater Quality and Management Approaches for Iron-Rich Groundwater Using Aeration–Filtration Treatment at Universitas Pembangunan Nasional "Veteran" Yogyakarta
ICD25159	Yohana Noradika Maharani	Reducing Landslide Risk in Yogyakarta Through Three-Dimensional Gravity Modeling as a Proactive Disaster Risk Reduction Strategy

Track Earth Science

Paper ID	Presenter	Paper Title
ICD25171	Muhammad Faizal Zakaria	Analysis of Resistivity Data of Wenner Alpha Configuration on Granite Prospect in 'JT' Area, Central Kalimantan, Indonesia
ICD25139	Dwi Wahyuningrum	Spatial Analysis of Water Infiltration Areas and Flood Risk in Yogyakarta City
708445	Faizal Agung Riyadi	Study on the Mine Drainage System Design of The Pit Nusa in Lhoknga, Aceh Besar, Aceh.
ICD25206	Peter Pratistha Utama	Integrating Remote Sensing and Field Observations for Karst Morphological Analysis: Evidence from Rongkop, Gunung Kidul

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Session Chair: Asst. Prof. Marvin M. Espiritu - Polytechnic University of the Philippines, Philippines

Track Economics

Paper ID	Presenter	Paper Title
ICD25191	Rini Dwi Astuti	Financial Inclusion, Macroeconomic Conditions, and Their Role in Indonesia's Financial Stability
ICD25212	Isnu Angga Winata	The Impact and Implications of IDX Regulation (Kep-00027/BEI/03-2020) Concerning the Relaxation of Reporting Deadlines for Audit Delay: Before, During, and After the COVID-19 Pandemic
ICD25203	Didi Nuryadin	The Effectiveness of Government Policies in Reducing Poverty and Income Inequality in Indonesia: An Empirical Study Using the PSM Method
ICD25169	Kusharyanti	The Impact of ESG Performance on Financial Performance: A Study of Companies in the SRI-KEHATI Index
213208	Afni Sirait	Study on the Level of Fairness, Transparency, Accountability and Quality of Education in Public Service Institutions of Higher Education

Track Management

Paper ID	Presenter	Paper Title
ICD25122	Rezky Saputra	When Authenticity Meets Sustainability: The Role of Environmental Awareness in Shaping Tourist Visiting Behavior
ICD25156	Antik Suprihanti	Development of an Integrated Web-Based Information System for Enhancing External Collaboration Management at UPN "Veteran" Yogyakarta
110625	Sujatmika	An Innovative Model of Agricultural Supply Chain Distribution to Strengthen Vegetable Farmers' Income: An Analysis of the Tarubatang Village Farmers Group

Track Human Resources Management

Paper ID	Presenter	Paper Title
ICD25181	M Halim	Empowering Low-Carbon Behavior Through Sustainable Leadership and Green Intellectual Capital in Indonesia's Public Administration

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Session Chair: Prof. Salihu Abdulwaheed Adelabu - Ibrahim Badamasi Babangida University, Nigeria

Track Economic Development

Paper ID	Presenter	Paper Title
ICD25116	Januar Eko Prasetio	Green Business: A Path to Competitiveness and Sustainability Comparative Study on the Implementation of Green Business Strategy in Indonesia and Malaysia

Track Business Administration

Paper ID	Presenter	Paper Title
ICD25178	Khoirul Hikmah	Navigating Technostressor: A Systematic Literature Review of Millennial Entrepreneurs
ICD25110	Satrio Tegar Gunung Koraag	Unravelling the Entrepreneurial Ecosystem: Actors and Factors Shaping Agricultural MSMEs in Indonesia
ICD25199	John Laurence Manlapig	From Culture to Commitment: Unveiling the Employee Connection in Government to Private Organization
ICD25187	Sauptika Kancana	Leveraging Digital Marketing for Sustainable Fundraising in Zakat Institutions: A Case of Badan Amil Zakat Nasional (BAZNAS) Yogyakarta City
ICD25155	Raden Achmad Chairdino Leuvano	Understanding Pain Points in Halal Chicken Supply Chains: The Type D Slaughterhouse Experience
122427	Jersey Gabriel	Level of Perception and Satisfaction on Consumer Trust in Selected New Food Ventures

Track Public Administration

Paper ID	Presenter	Paper Title
ICD25143	Wahyu Hidayat	Strategy and Implementation of Enhancing Scientific Publications Towards International Accreditation: A Case Study of the Geophysical Engineering Study Program

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Session Chair: Prof. Ts. Dr. Suraini Abd-Aziz - Universiti Putra Malaysia, Malaysia

Track Agricultural Science

Paper ID	Presenter	Paper Title
ICD25196	Amalia Nurul Huda	Evaluation of Quantitative Floral Traits in Eleven Melon (Cucumis melo L.) Genotypes
409239	Bambang Supriyanta	Resistance of Eight Premium Melon Varieties to Viral Diseases in a Commercial Greenhouse in Palangka Raya, Central Kalimantan
ICD25123	Meisha Hero	Comparison of Intensive And Non-Intensive Cocoa Cultivation On Cocoa Pod Diseases In Nglanggeran Village
ICD25194	Umi Munawaroh	Robustness of Soil Phosphorus Availability, Nutrient Dynamics, and Shallot Vegetative Growth Through Arbuscular Mycorrhizal Fungi (AMF) Inoculation

Track Food Engineering

Paper ID	Presenter	Paper Title
255584	Avido Yuliestyan	Valorisation of Rice Straw as Thickening Agent of Supplements for Dysphagia Patients

Track Agribusiness

Paper ID	Presenter	Paper Title
ICD25180	Ratih Setyowati	Socio-Ecological Approaches for Sustainable Cocoa Agroecosystems in Kulon Progo Yogyakarta
ICD25166	Ahmad Zaki	Digital Entrepreneurship Expansion in Indonesian Agritech Startups
ICD25213	Maisarah Samsudin	Bridging Youth Technology Readiness and Internet of Things (IoT) Adoption in Agriculture: Perceived Benefits and Risks as Mediators in the TRI Framework

Track Food Science And Technology

Paper ID	Presenter	Paper Title
ICD25184	Nova Wahyu Pratiwi	Effect of Glycerol Dosage on Antifungal Performance of Black Cumin Oil–Fortified Edible Coatings on Red Chili (Capsicum Annuum)

Track: Social Science

Supported by :

From Axis to Artifact: Materializing Yogyakarta's Cultural Philosophy in Souvenirs

Iva Rachmawati[1], Kartika Ayu Ardhanariswari[1], Krisnandini Wahyu Pratiwi[1]
[1]Universitas Pembangunan Nasional "Veteran" Yogyakarta, Indonesia

Abstract

Souvenirs play a crucial role in shaping the tourist experience—not merely as mementos, but as a medium for transmitting cultural values and local identity. This study explores the potential of modular miniature-based design to embody the cultural philosophy represented by the Yogyakarta Cosmological Axis within souvenir artifacts. Employing a qualitative-descriptive approach, the study uncovers challenges in representing local culture through souvenirs, often dominated by mass-produced items lacking educational value. Data were collected through field observations of the Cosmological Axis of the Yogyakarta area, in-depth interviews with local artisans and cultural experts, and document analysis of relevant cultural heritage materials, ensuring a comprehensive understanding of production practices and cultural narratives. The findings suggest that modular design offers flexibility in both form and production, and using technologies such as QR codes can enrich the storytelling embedded in the souvenirs. This narrative-based approach is essential to ensure that the cultural values embedded in the Yogyakarta Cosmological Axis are conveyed accurately and meaningfully, preventing potential distortion or misrepresentation. Overall, this study highlights the role of souvenirs as agents of cultural preservation and practical educational tools that contribute to sustainable destination branding strategies.

Keywords: Cultural souvenirs, cultural heritage preservation, Yogyakarta Cosmological Axis modular design, QR Code.

Student-Athlete Satisfaction in a Philippine Higher Education: Insights for Institutional Support and Sports Development

Florence Robles-Tenorio[1], Emily T. Babasa[1], John Renzo V. Barit[1], Farisse P. Macam[1], Alexis M. Zarraga[1], Jerrylyn B. Magbuo[1]

[1]First Asia Institute of Technology and Humanities, Philippines

Abstract

Collegiate athletics play a vital role in supporting student-athletes' academic, athletic, and personal growth, yet disparities in institutional support often affect satisfaction, retention, and program sustainability. While athlete satisfaction has been extensively studied internationally, empirical research in the Philippine context remains limited. This study examined student-athletes' perceived satisfaction across six domains: self-perception, coaches and trainers, team and teammates, administration, facilities and budget, and support and recognition, at a higher education institution in the Philippines, as these encompass psychological well-being, interpersonal relationships, and institutional support factors that consistently shape student-athlete experiences. An explanatory sequential mixed-methods design was employed. Quantitative data were gathered from 50 varsity athletes across five sports through a validated Likert-scale survey, followed by focus group discussions with 15 athletes selected through maximum variation sampling. Descriptive statistics summarized satisfaction levels, while thematic analysis provided qualitative insights into areas for improvement. Results showed Highly Satisfactory ratings in self-perception (M = 3.45), team and teammates (M = 3.48), administration (M = 3.38), and support and recognition (M = 3.39). Coaches and trainers (M = 3.23) and facilities and budget (M = 2.82) were rated Satisfactory, with qualitative insights citing inconsistent coaching quality, outdated facilities, and inequitable budgets for non-priority sports. Recommendations include standardized coach training, facility upgrades, equitable resource allocation, expanded housing, and enhanced recognition systems. This study provides context-specific evidence to inform policy and program development in Philippine collegiate sports. Keywords: student-athletes, athlete satisfaction, institutional support, collegiate sports, sports development, higher education

Keywords: student-athletes, athlete satisfaction, collegiate sports, sports development, higher education

Cultural Literacy for Preserving the Cosmological Axis of Yogyakarta: A UNESCO World Heritage Site in Indonesia

Retno Hendariningrum[1], Kartika Ayu Ardhanariswari[1], Iva Rachmawati[2], Krisnandini Wahyu Pratiwi[3]

[1]Communication Department, Universitas Pembangunan Nasional "Veteran" Yogyakarta, Indonesia [2]International Relations Department, Universitas Pembangunan Nasional "Veteran" Yogyakarta, Indonesia [3]Management Department, Universitas Pembangunan Nasional "Veteran" Yogyakarta, Indonesia

Abstract

This study examines the role of cultural literacy in preserving the Cosmological Axis of Yogyakarta, which was designated as a UNESCO World Heritage Site in 2023. A qualitative case study design was employed, combining semi-structured interviews, focus group discussions (FGDs), field observations, and document analysis, including digital content from the official Instagram account @sumbufilosofi. The findings show that the initial top-down strategy effectively introduced the designation of the Cosmological Axis along with its underlying Javanese philosophical values. However, this approach proved insufficient to sustain long-term community engagement and often generated tensions in urban governance. Dialogical forums such as rembukan and Jagongan Kampung can foster trust, build consensus, and strengthen community ownership. At the same time, social media functions as a tool of cultural literacy by translating cosmological concepts into accessible narratives, engaging younger generations, and reinforcing collective pride. Integrating cultural literacy into heritage governance can mitigate resistance to policy, enhance local stewardship, and transform heritage from static monuments into a living cultural identity.

Keywords: cultural literacy, preservation, UNESCO World Heritage Site, cosmological axis of Yogyakarta

A Media Ecology Study of Community Radio in Yogyakarta | Panji Dwi Ashrianto[1], Arika Bagus Perdana[1], Mochammad Fauzul Haq[1]

[1]Universitas Pembangunan Nasional "Veteran" Yogyakarta, Indonesia

Abstract

Indonesia's media sector has evolved rapidly amid social, economic, political, and technological change. Community radio expanded after Broadcasting Law No. 32/2002 but declined sharply as 2020 approached, threatening the citizen-run alternative public sphere. Despite Yogyakarta's historical centrality, adaptation within its community-radio ecology remains underexplored. This study traces transformations in Yogyakarta from the post-Reformasi period through 2024 and analyzes how regulation and technology have shaped them. Using a qualitative design, we examine Angkringan FM, Saka FM, Swaka FM, and BBM FM through in-depth interviews with managers, presenters, and local stakeholders; participant observation of on-air practice, content production, and community relations; and analysis of policy documents and organizational archives. Guided by media-ecology theory, we map interactions among actors, technologies, regulations, and social environments across three phases: pre-2002, post-2002, and the internet/social-media era. Findings indicate that the 2002 law reconfigured organizational structures and practices, but, in implementation, constrained innovation in funding, licensing, and reach, yielding a relatively stagnant ecosystem. Concurrently, the rise of the internet and social media expanded capacities for production and distribution, shifted audiences to digital platforms, and demanded multimodal formats. To persist, many stations interpret regulatory limits flexibly, generating tensions between legal compliance and sustainability. We propose revisiting definitions, licensing regimes, and success indicators so that community radio aligns with today's digital ecology while supporting citizen-based information democracy. The study advances Indonesian media-ecology scholarship and offers policy foundations for inclusive, sustainable revitalization of Yogyakarta's community radio.

Keywords: Media Ecology, Community Radio, Broadcasting Regulation, Digital Technology, Yogyakarta

Analysis of the Influence of Environmental Awareness, Subjective Norms and Basic Human Conditions on Green Purchase Behavior (Study on the Implementation of Paid Plastic Bag Policy)

Hani Subagio[1], Shinta Heru Satoto[1], Wahyu Wibowo Eko[1], Hasa Nurrohim K.P.[1]
[1]Universitas Pembangunan Nasional "Veteran" Yogyakarta, Indonesia

Abstract

This study aims to examine the factors influencing green purchase behavior after the implementation of the paid plastic bag policy. The factors tested included environmental awareness, subjective norms, and basic human conditions, such as gender, age, income level, and education level. The study was conducted using a questionnaire distributed to consumers shopping at Alfamart, Indomaret, and Superindo in the Special Region of Yogyakarta. The respondents used were 392 respondents from five districts in the Special Region of Yogyakarta. The results showed that gender and age influenced environmental awareness and subjective norms, while education and income did not. Environmental awareness influenced green purchase behavior, and subjective norms were able to mediate the influence of environmental awareness on green purchase behavior.

Keywords: Environmental awareness, subjective norms, basic human conditions, green purchase behavior

The Effect of Networking Capacity on Social Capital and Its Implications for Ease of Access to Financial Capital

Hendro Widjanarko[1], Humam Santosa Utomo[1], Rosalia Dwi Fadma Tjahjanti[1], Suratna[1], Fadli Hasan Muqaddas[1]

[1]Universitas Pembangunan Nasional "Veteran" Yogyakarta, Indonesia

Abstract

This study examines how the networking capabilities of processed food micro-enterprise owners influence the formation of social capital and how this social capital, in turn, influences ease of access to financial capital. The focus of the study was processed food micro-enterprises in Bantul Regency, Yogyakarta. Using a questionnaire distributed to 100 micro-enterprise owners selected through purposive sampling, this study examined the direct relationship between networking and social capital and the mediating relationship between social capital and access to financial capital. Data analysis used SEM-PLS. The results showed that networking significantly influenced business owners' social capital and access to financial capital. This study also found that social capital significantly influenced access to financial capital. These findings reinforce the literature demonstrating the central role of social networks in expanding financing opportunities for small and medium enterprises.

Keywords: networking, social capital, access to financial capital, micro-enterprises, Yogyakarta

Impact of e-Satisfaction on Customer Engagement and Loyalty in e-Commerce

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Abstract

The purpose of this study is to investigate how consumer engagement and e-loyalty are affected by e-satisfaction. Customers in the Yogyakarta Special Region who use the Shopee online platform were the target of this study. Closed questionnaires were used to gather information from Shopee patrons residing in Yogyakarta's Special Region. 200 Shopee consumers who were chosen according to specific criteria made up the sample size for this study. The tool for analysis makes use of WarpPLS. The study's findings indicate that e-satisfaction significantly influences both consumer engagement and e-loyalty, that e-loyalty is significantly impacted by customer engagement, and that e-satisfaction significantly influences e-loyalty through customer engagement. These results demonstrate how important e-satisfaction and consumer engagement are in promoting loyalty.

Keywords: e-satisfaction, customer engagement, e-loyalty, shopee customers, e-commerce industry

Foreign Cultural Literacy as a Strategy to Increase the Competitiveness of Tourist Villages

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Abstract

This study aims to identify the role of foreign cultural literacy as a strategy to strengthen the competitiveness of tourist villages. This study uses a qualitative case study approach, collecting data through in-depth interviews with managers and stakeholders, observation, and documentation. Data analysis employed a thematic analysis model (inductive-deductive coding) to explore foreign cultural literacy practices. The study concludes that foreign cultural literacy is a key strategy for enhancing the competitiveness of tourist villages through strengthening service quality, cross-cultural adaptation, and expanding international market appeal. The study's findings recommend that stakeholders implement foreign language training programs, sustainable foreign cultural literacy, community participation mechanisms, and the integration of foreign cultural literacy into destination marketing strategies.

Keywords: oreign cultural literacy, destination competitiveness, tourist villages, community-based tourism, Yogyakarta

Implementation of Circular Economy in Nature Tourism Management: A Strategy Towards Sustainable Performance

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Abstract

Waste management at natural tourism destinations is a pressing environmental issue in Bantul Regency, Yogyakarta. The increase in tourist visits has resulted in the accumulation of solid waste, particularly single-use plastics, which poses challenges to environmental sustainability. This study aims to analyze the implementation of the circular economy (CE) in the management of natural tourism destinations, specifically through waste reduction, reuse, and recycling strategies in Tourism Villages and natural tourism areas in Bantul. The research method used a qualitative approach through in-depth interviews with tourism village managers, tourism object managers, and the Tourism Office. The results show that the CE concept has been implemented through the tourism waste bank program, the management of organic waste into compost, and plastic reduction campaigns. However, challenges such as limited resources, low environmental literacy among tourists, and weak regulatory support remain major obstacles. In-depth discussions emphasized that strategies towards sustainable performance require multi-stakeholder collaboration, strengthening management capacity, and the integration of environmentally-based policies. This research contributes to the development of circular economy theory in the tourism sector and provides practical implications for sustainable destination management in developing regions.

Keywords: circular economy, sustainable tourism, waste management, natural tourism destinations, Bantul

Audit Quality as a Mediator in the Relationship between Capital Structure, Firm Size, and Firm Value.

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Abstract

This study examines the moderating effect of audit quality on the relationship between capital structure, firm size, and firm value. This analysis is based on a sample of 70 manufacturing companies listed on the Indonesia Stock Exchange for the 2018–2024 period, resulting in a total of 490 data. To achieve the research objectives, an explanatory research design was employed. The data analysis involved financial ratio measurement, descriptive evaluation, and inferential statistics, with the latter conducted using Warp Partial Least Squares (WarpPLS). The results indicate that both capital structure and firm size significantly affect audit quality. In addition, firm size and audit quality demonstrate a significant influence on firm value, while capital structure does not show a meaningful relationship with firm value. The study also finds that audit quality does not operate as a mediating factor between capital structure, firm size, and firm value. Overall, these results provide empirical evidence supporting both signaling theory and agency theory, highlighting the importance of audit quality in strengthening public trust in firms. High-quality audits contribute to enhancing corporate reputation and sustaining firm value in the long run. While audit quality is influenced by debt policy and firm size, it does not act as a mediating mechanism in the link between capital structure, firm size, and firm value. Stakeholders need to select professional and independent auditors and ensure transparency to improve reporting quality and market confidence.

Keywords: Capital Structure, Firm Size, Audit Quality, Firm Value

The Communicative Role of Social Media Content Creators on Instagram in Advancing Sharia Investment Literacy

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Abstract

The Islamic finance industry in Indonesia continues to grow and contributes significantly to the country's economic development. However, this progress still faces challenges due to the low level of public literacy regarding Islamic investment. Although sharia-compliant products such as sustainable sukuk, halal mutual funds, and Islamic stocks are increasingly accessible, many people—especially millennials and Generation Z—still have limited understanding. Digital media has therefore become an essential medium, not only for disseminating information but also for shaping public trust and perceptions of Islamic finance. This study aims to examine the communicative role of social media content creators in strengthening Islamic investment literacy. Drawing on Media Ecology Theory, the research investigates how digital platforms function as learning environments that influence public awareness and engagement with Islamic financial products. A qualitative netnographic approach was employed by observing eight Instagram accounts that consistently produced educational content on sharia finance from April to September 2025. Data—including posts, captions, comments, and interactive features—were analyzed using thematic analysis to identify communication patterns and literacy strategies. The findings indicate that each content creator contributes differently to a complementary digital ecosystem that enhances the reach and understanding of Islamic investment literacy. The study concludes that social media serves not only as a promotional space but also as an educational platform fostering financial literacy through adaptive, dynamic, and inclusive interactions.

Keywords: Social Media Content Creator, Instagram, Sharia Investment, Literacy

Track: Food Security

Supported by :

Responsibility of Psb (Photosynthetic Bacteria) and Chitosan on the Growth of Banana Lase (Musa acuminata L.)

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Abstract

Banana (Musa spp.) is an important tropical fruit crop, but its cultivation faces major challenges related to seedling availability and reliance on chemical fertilizers. Tissue culture provides a solution for large-scale seedling production. However, post-acclimatization remains a critical stage due to plant sensitivity to environmental stress. Sustainable alternatives such as photosythetic bacteria (PSB) and chitosan have been suggested to improve growth and reduce chemical input dependency, but their combined effects on banana remain underexplored. This study aimed to evaluate the influence of PSB and chitosan applications on the post-acclimatization growth of tissue-cultured Lase banana seedlings. A field experiment was conducted using a split-plot design with PSB concentrations (10, 20, 30 ml/L) as the main plots and chitosan concentrations (10, 15, 20 ml/L) as subplots. Growth parameters were measured and analyzed using ANOVA at the 5% significance level, followed by DMRT for mean separation. The results revealed a significant interaction between PSB at 10 ml/L and chitosan at 10 ml/L, which produced the highest values for plant height and leaf number. This indicates that the synergistic application of PSB and chitosan enhances the early establishment of Lase banana seedlings after acclimatization. The findings contribute both practically and academically, they demonstrate an effective strategy for reducing dependence on chemical fertilizers while improving seedling vigor, and they provide new insights into the integration of microbial inoculants and biopolymers in sustainable banana micropropagation.

Keywords: Banana, Photosynthetic Bacteria, Chitosan.

Track: Mineral Technology

Supported by :

The Influence of Coal Characteristics on Coke Formation in Indonesia's Steel Industry

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Abstract

Indonesia possesses abundant coal resources with diverse characteristics, which directly influence their potential in the steel industry, particularly in metallurgical coke production. Coke serves as both a reducing agent and a crucial fuel in the blast furnace process, requiring specific coal qualities such as high fixed carbon content, low sulfur content, good caking ability, and sufficient thermoplastic properties. However, Indonesian coal is predominantly sub-bituminous and lignite, which are limited for coking purposes. This paper examines the influence of coal characteristics on coke formation, evaluates the potential of Indonesian coal—including coking coal prospects in Muara Teweh, Central Kalimantan—for metallurgical applications, and reviews strategies for strengthening coal utilization toward competitive coke. Furthermore, the role of Environmental, Social, and Governance (ESG) principles in developing a sustainable coke industry is also discussed. Findings indicate that improvements in beneficiation processes, coal blending strategies, and ESG integration can enhance domestic coke self-sufficiency while maintaining sustainable development. Keywords: Coal characteristics, coal qualities, ESG, metallurgical coke, steel industry

Keywords: Coal characteristics, coal qualities, ESG, metallurgical coke, steel industry

The Evolution of Mining Regulations in Indonesia: Legal Framework, Implementation, and Challenges

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Abstract

Mining regulations in Indonesia have undergone significant transformations in response to political, economic, and environmental dynamics. Beginning with Law No. 11 of 1967, which introduced a framework for foreign investment in the mining sector, the regulatory landscape has evolved through various reforms, including Law No. 4 of 2009, Law No. 3 of 2020, and Law No. 2 of 2025. These laws reflect the state's effort to strengthen control over mineral resources, promote downstream processing, and ensure environmental protection. Despite normative improvements, implementation remains challenging due to overlapping authorities, weak enforcement, and infrastructural constraints. This paper examines the historical development, key provisions, and implications of Indonesia's mining regulations, highlighting both progress achieved and persistent issues.

Keywords: Indonesia Mining Regulation, Mineral and Coal, Environmental Governance, Centralization, Good Mining Practice

The Effect of HNO_3 Concentration Variations on the Recovery of REEs from Coal Fly Ash Through Hydrometallurgical Processes | Tri Wahyuningsih[1], Yasmina Amalia[1], Mahendra Ivan Fahrezi[1], Farhan Putra[1], Zikra Fitri Kasih[1], Ahmad Alfarizi[1], Rinaldi Zainun Syah[1]

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Abstract

In this study, coal fly ash was used as the main material for analysis and extraction of REEs contained therein. Coal fly ash is a waste product from coal combustion, commonly used in the power generation sector, which is typically disposed of without further processing. Therefore, this study was conducted to utilize this waste, which contains a significant amount of REEs, for use in the metallurgy industry as strategic additives in material engineering. The rare earth metal recovery process involved leaching with strong acid HNO_3 at concentrations of 0.6 M; 0.8 M; and 1 M. Analysis using the ICP-OES method on the three variations only resulted in very low dissolution of REEs. Characterization with XRD of the leaching results showed that the leaching process effectively mobilized and reformed REEs into various new crystalline phases.

Keywords: Fly Ash, REEs, HNO3

Groundwater Surface Contour Modeling Using Kriging Method Around JJLS, Purwosari District, Gunung Kidul

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Abstract

Kapanewon Purwosari, Gunungkidul Regency, Special Region of Yogyakarta is one of the areas that still uses groundwater to meet water needs such as household and agricultural needs. Over time, the expansion of development areas such as JJLS has resulted in changes in spatial patterns, including the groundwater conditions within them. Direct data collection in the field, such as data on rivers and residents' wells, can be used as parameters in modeling groundwater conditions in the area. Limited data can be supplemented by using the krigging method with software such as ArcGis to help in groundwater modeling. Based on 36 observation points, including 24 community wells and 12 rivers, interpolation was performed using the krigging method to produce groundwater contour lines in the area around the observation points.

Keywords: Groundwater Level, Krigging

Hydrogeochemical Modeling of Mineral Processes in Hot Springs and Mine Waters

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Abstract

Understanding hydrogeochemical processes is essential for predicting mineral alteration and carbonate scaling in geothermal and mining environments. However, such studies remain limited in Malifut, North Maluku, where geothermal manifestations and mining activities coexist. This study aims to classify hydrochemical facies and evaluate mineral stability in various thermal waters, including underground mine waters, a hot spring, and borehole thermal waters. Field measurements of temperature, pH, electrical conductivity, and total dissolved solids were conducted, while major ions were analyzed using ion chromatography. Hydrochemical facies were identified using the Cl–SO_4–HCO_3 ternary diagram, and mineral saturation indices were modeled with PHREEQC. The classification revealed that borehole waters belong to the peripheral type, while Shallut and Kencana mine waters are steam-heated, and Toguraci, together with Akesahu hot spring, are volcanic waters. PHREEQC modeling revealed that volcanic and steam-heated waters are oversaturated with calcite and aragonite, indicating a strong potential for carbonate precipitation due to CO_2 degassing and elevated temperatures. Borehole waters were mostly near equilibrium or undersaturated, except PZ-8, which exhibited dolomite oversaturation and a clear geothermal signature. All samples were undersaturated with gypsum and anhydrite, indicating carbonate equilibria as the dominant control. This integrated approach enhances the understanding of water–rock interaction, fluid origin, and scaling risk in geothermal–mining systems, and provides practical insights for water management and scaling mitigation strategies in Malifut.

Keywords: hydrogeochemistry, geothermal, phreeqc, water–rock interaction

Copper Deportment in a VMS-Hosted Ore from Wetar via Diagnostic Sequential Leaching

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Abstract

Copper (Cu) is predominantly sourced from chalcopyrite ($CuFeS_2$), which accounts for about 70% of the world's copper reserves. However, chalcopyrite is notoriously refractory to leaching under standard acidic conditions, leading to slow dissolution kinetics and low extraction efficiency. This study investigates the copper deportment in a volcanogenic massive sulfide (VMS)-hosted ore from Wetar Island, Maluku, Indonesia, by employing diagnostic sequential leaching (DSL). The DSL method sequentially leaches the ore with specific reagents to dissolve different copper-bearing mineral fractions. The Wetar ore sample (~2% Cu) was subjected to a water wash, dilute sulfuric acid leach, and a sodium cyanide leach, sequentially, followed by analysis of the residual solid. Results show that only ~2% of the total copper was water-soluble , ~10% was acid-soluble (as oxides/carbonates) , and ~43% was extracted by cyanide (as secondary Cu-sulfides). The largest fraction, ~45%, was left as residual copper. This indicates that while more than half of the copper in this ore exists in easily leachable secondary sulfides and oxides , nearly half remains as refractory primary sulfide (chalcopyrite). These findings inform the design of an optimal extraction strategy, suggesting that conventional leaching could recover a majority of the copper, but that additional measures (e.g., oxidants) would be required to liberate the remaining chalcopyrite-hosted copper.

Keywords: chalcopyrite, diagnostic sequential leaching, copper deportment, Volcanogenic Massive Sulfide (VMS), hydrometallurgy

Recovery of Neodymium from Pelabuhan Ratu Coal Fired Power Plant: A Comparative Study of Acid Leaching Reagents on Coal Fly Ash

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Abstract

Rare earth elements (REEs) are strategic materials that play a crucial role in high-technology, renewable energy, and defense industries. This study aims to evaluate the neodymium (Nd) potential in fly ash and the effectiveness of leaching using 0.2 M solutions of HCl, H_2SO_4, and HNO_3. Fly ash samples were collected from the Pelabuhan Ratu CFPP, analyzed for Nd content using ICP-MS, and subjected to leaching tests to determine recovery rates. The analysis revealed an Nd content of 7,920.725 ppb in the solid feed, with a relative standard deviation (RSD) of 3.7%. Leaching experiments showed the highest recovery with HNO_3 (21.366%), followed by HCl (1.819%) and H_2SO_4 (0.315%). The low recovery is likely due to Nd being entrapped within silicate and aluminosilicate matrices, which are resistant to dissolution under dilute acid conditions. The recovery of REEs from fly ash not only has the potential to support the supply chain for high-technology industries but also offers an environmentally aligned solution for waste management.

Keywords: Acid leaching, fly ash, neodymium, recovery, Pelabuhan Ratu CFPP

Track: Earth Science

Supported by :

Geoecological-Based Strategy for Ecosystem Improvement in Volcanic Zones: A Preliminary Study from Jurang Jero Area, Merapi National Park

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Abstract

Mount Merapi, one of Indonesia's most active volcanoes, has repeatedly altered surrounding river ecosystems through frequent eruptions, with the 2010 event producing more than 140 million m^3 of pyroclastic material. This preliminary study aims to analyze the geoecological dynamics of the Jurang Jero sector, Merapi National Park, which experienced severe impacts on river morphology, sedimentation, water quality, and riparian vegetation. A desk study approach was applied, synthesizing secondary data including geological and hazard maps, remote sensing imagery, hydrological records, and published scientific reports. Findings show that lahar-induced sedimentation after 2010 caused aggradation, channel widening, and river capacity reduction, with some sabo dams quickly reaching their limit. Water quality deteriorated due to extremely high suspended solids, increased turbidity, and elevated heavy metals, although these effects were partly temporary. Riparian vegetation suffered extensive damage, followed by natural succession dominated by invasive species such as Acacia decurrens, which hinders native regeneration. Nevertheless, signs of ecological recovery have emerged through pioneer species and rehabilitation programs. This study highlights the need for a geoecology-based adaptive conservation strategy that integrates river morphology rehabilitation, sediment management, water quality improvement, and riparian vegetation restoration while involving local communities. The proposed framework provides a conceptual basis for future field research and practical river ecosystem management in volcanic landscapes.

Keywords: Mount Merapi, Jurang Jero, lahar sedimentation, riparian vegetation, geoecological restoration

The Effect of Divalent Ion Addition to Rhamnolipids Solution Through Fluid-To-Fluid Testing for Enhanced Oil Recovery: A Review

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Abstract

Enhanced oil recovery (EOR) continues to be developed to optimize oil production from mature oil fields. One promising EOR method is the use of biosurfactant solutions, which are environmentally friendly and can reduce oil-water interfacial tension, enhancing the mobility of trapped oil in reservoir rocks. However, the effectiveness of rhamnolipid biosurfactants is strongly influenced by geochemical conditions, particularly the presence of divalent ions such as calcium (Ca^{2+}) and magnesium (Mg^{2+}) in formation water. This study aims to investigate fluid-to-fluid interactions between rhamnolipid solutions and divalent ions to improve oil recovery efficiency. Experiments were conducted to examine changes in the physicochemical properties of rhamnolipid solutions caused by the addition of calcium and magnesium ions, including changes in interfacial tension and rheological properties. Imbibition and precipitation tests were also carried out at the laboratory scale to assess the effectiveness of rhamnolipid biosurfactants in enhancing oil recovery. The results showed that, in terms of both interfacial tension reduction efficiency and viscosity emulsion forming, the presence of divalent ions can have a significant impact on biosurfactant performance. Under certain conditions, divalent ions can reduce oil mobilization efficiency. However, by optimizing the rhamnolipid biosurfactant formulation with the appropriate concentration of divalent ions, recovery efficiency can be improved. This study provides valuable insights into the development of biosurfactant-based EOR technologies, particularly for reservoir environments with high divalent ion content. The results are expected to serve as a foundation for developing more stable and efficient biosurfactant solutions for applications in the oil and gas industry.

Keywords: biosurfactant, divalent ions, fluid-to-fluid interaction, interfacial tension, oil mobility

Effect of Rhamnolipid Biosurfactant on Enhanced Oil Recovery Through Imbibition Performance of Crude Oils: A Literature Review

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Abstract

Biosurfactants applied in enhanced oil recovery (EOR) have attracted significant attention due to their biodegradability, low toxicity, and ability to modify the interactions between oil, rock, and brine. Rhamnolipids—glycolipid biosurfactants synthesized by bacterial species—have a unique amphipathic structure that can alter the characteristics of crude oil at the molecular and macroscopic levels. This study examines the impact of rhamnolipid biosurfactant on the imbibition performance of crude oils, exploring it as a potential green alternative to conventional surfactants. Laboratory experiments were designed to evaluate the reduction of interfacial tension and oil displacement efficiency under various reservoir conditions. The results demonstrate that rhamnolipid significantly enhances oil recovery by promoting water-wet conditions and improving spontaneous imbibition rates, with recovery increments surpassing those observed in conventional systems. The novelty of this work lies in the direct integration of rhamnolipid biosurfactants into imbibition-driven recovery processes, which has rarely been addressed in previous EOR studies. While prior works have primarily focused on the performance of coreflooding and micellar flooding, this study offers mechanisms that explain how rhamnolipids modulate capillary forces and rock–fluid interactions during imbibition. By coupling environmental sustainability with improved oil recovery efficiency, the findings highlight rhamnolipid as a dual-function agent—both as an effective surfactant and as a sustainable alternative for next-generation EOR strategies.

Keywords: rhamnolipids, biosurfactant, chemical composition, imbibition, enhanced oil recovery

Evaluation of Geoelectrical Data Stability: Manual Quadrupole vs. Multi-Electrode Switch Panel Prototype

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Abstract

A contructed multi-electrodes switch for geoelectric-resistivity method was designed and built. The instrument was built to perform data acquitition that coverage the line survey and increase the optimation of data acqutition. The data field test was conducted by comparing by using single-electrode moving manually each datum point and multi-electrodes fixed electrodes coverage all point data. Sounding profiling was used to perform the instrument by using Wenner configuration. The resisvity of medium at shallow (depth factor, n=1) used single-electrode and multi-electrodes are 460 Ω.m and 463 Ω.m with the standard deviation 0,60 % and 0,87 %, respectively. At more deeper depth (depth factor, n=2) used single-electrode and multi-electrodes are 51 Ω.m and 26 Ω.m with the standard deviation 9,80 % and 24,47 %, respectively. Eventhough the development of multi-electrodes instrument will continue in quality control od data quality and its system build in automatic perform.

Keywords: single-electrode, multi-electrode, Instrument, resistivity

Comparative Study Between Object-Based Image Analysis Using Mean Shift and Multiresolution Segmentation Algorithms for Green Open Space Identification: Case Study in Sleman Regency

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Abstract

We elaborate on the critical importance of green open spaces in the context of urban sustainability. Public health is inextricably linked to the green open spaces in urban regions as green spaces contribute to the ecological balance. In Indonesia, Green Open Space (GOS) is guided by Law No. 26 of 2007, which designates at least 30% of urban areas as GOS. However, tracking GOS is difficult because of urbanization and a lack of ground surveys. Remote sensing techniques and Object Based Image Analysis (OBIA) may help solve this problem. We used high-resolution SPOT-7 imagery to determine GOS in Sleman Regency, Indonesia. The study also compares two OBIA segmentation algorithms, Mean Shift and Multiresolution Segmentation. The classification included city parks, rice fields, gardens, buildings, water bodies, and areas labeled as unclassified. Mean Shift segmentation together with SVM achieved 81.25% accuracy and Kappa index of 0.739. On the other hand, Multiresolution Segmentation with Nearest Neighbour attained 91.25% accuracy and Kappa index of 0.878. Although these results indicate the superiority of Multiresolution Segmentation over Mean Shift in heterogeneous urban settings, there is a potential for the latter in fine scale feature detection.

Keywords: Green Open Space, OBIA, Mean Shift, Multiresolustion Segmentation, Remote Sensing

Subsurface Lithologi Modelling of Landslide-Prone Areas in Sriharjo, Imogiri, Bantul Using the Geoelectrical Method

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Abstract

Lithology modeling in a landslide-prone area using the geoelectrical method with the Wenner configuration. The research aims to determine resistivity values, subsurface lithology, and slip surfaces in Sriharjo Village, Bantul Regency, which frequently experiences landslides. This area is identified as one of the most vulnerable zones due to its steep slopes and geological conditions. Sriharjo Village, located along the Opak Fault, is a critical area where landslides have repeatedly caused significant losses. Data were collected along four 225-meter survey lines with 15-meter electrode spacing and an expansion factor up to n = 5. The data were processed with Res2Dinv to obtain resistivity values and two-dimensional subsurface profiles. Results show resistivity values ranging from 0.0397 Ωm to 1046 Ωm. The subsurface is divided into aquifer, clay, and breccia layers, with slip surfaces occurring in the clay and breccia layers, which display both curved and flat geometries. By identifying the slip surface and the thickness of the weathered layer above it, the landslide potential in this area can be assessed, helping to reduce casualties and minimize material losses.

Keywords: Landslide, Slip Surface, Geoelectrical, Wenner

Integrated Study of Geochemical, Geomechanical, and Mineralogy Leak Potential on Caprocks with Shale: A Review

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Abstract

This study presents an integrated analysis of the geochemical, geomechanical, and mineralogical properties of shale caprocks in Asian sedimentary basins to evaluate their potential for leakage in carbon sequestration and petroleum extraction applications. Caprocks play a critical role in trapping subsurface fluids, ensuring both environmental protection and operational efficiency. The geochemical analysis involved detailed mineralogical characterization using X-ray diffraction (XRD) and evaluation of formation water chemistry, highlighting interactions with injected CO_2-rich fluids. Variations in mineral content—such as clay, quartz, and carbonate—significantly influence the sealing capabilities and chemical stability of shale formations. Geomechanical properties were thoroughly investigated, focusing on strength, porosity, permeability, elastic and acoustic characteristics, and reactive surface area. Laboratory experiments and numerical modeling have demonstrated that shales exhibit remarkably low permeability, generally less than that of microfacies to nanodevices, paired with limited porosity, typically below 10%. Elastic parameters indicated significant variability related to mineralogical differences; quartz- and carbonate-rich shales were stiffer and more brittle, increasing fracture risks, whereas clay-rich shales were more ductile, better accommodating deformation without fracturing. Furthermore, the reactive surface area of clays, especially smectite and illite, significantly impacted geochemical reactions, influencing long-term caprock integrity. The novelty of this study lies in its comprehensive integration of multiple disciplinary analyses, specifically targeting shale caprocks, where diverse geological conditions prevail. Findings reveal critical correlations between mineralogical composition, geomechanical behavior, and sealing capacity, enabling more reliable prediction of leak risks associated with carbon sequestration and petroleum extraction. The outcomes provide essential guidance for reservoir management practices, significantly contributing to the safe and sustainable development of energy and supporting regional and global efforts to reduce greenhouse gas emissions.

Keywords: shale caprocks, geochemical, geomechanical, mineralogy, leak potential

Analysis of Resistivity Data of Wenner Alpha Configuration on Granite Prospect in 'JT' area, Central Kalimantan, Indonesia

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Abstract

The need for igneous rock as a support for development is increasing in line with the rapid development of infrastructure in Kalimantan. Exploration activities are imperative and must be undertaken as soon as possible. Geological and geophysical investigations, including the resistivity method, are conducted as the initial step in exploration activities. In this study, exploration at the 'JT' area using the Resistivity method with the Wenner Alpha configuration is supported by drill hole data. There are 17 lines oriented Northwest-Southeast and North-South, with a line length of 320 meters and 6 points drill hole crossed by a Resistivity path. The processing of the Resistivity data uses the Res2Dinv software and the drill hole by the Strater4 to produce subsurface profiles. The cross-section is correlated with the drill hole profile results using CorelDRAW software. Next is 3D modeling using the Oasis Montaj software. The results obtained from this study are lithology that is interpreted based on resistivity value are soil with resistivity < 20 Ohm-m, under soil layers there are interlocutors between sandstones with claystone with resistivity of 20 - 60 Ohm-m, below that there are sandstones originating from Formation Tanjung with a resistivity of 60 - 300 Ohm-m, and below that there is granite with resistivity > 300 Ohm-m. The distribution of granite in this area has very good quality in the northern region as a prospect area. The granite in the southern part has a lower resistivity value, which is thought to be weathered granite

Keywords: Wenner Alpha, Resistivity, Granite

Spatial Analysis of Water Infiltration Areas and Flood Risk in Yogyakarta City

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Abstract

Yogyakarta City faces environmental problems due to reducing water catchment areas due to urbanisation and land use change. This reduction can disrupt the hydrological cycle, causing groundwater depletion and increasing the risk of flooding and inundation. Using a Geographic Information System (GIS) approach, this research will map the water catchment potential. The data analysed included soil type, rainfall, land slope, land use, and soil infiltration rate. Scoring and overlay methods were used to create a thematic map depicting the condition of water infiltration in Yogyakarta City. The results show that Yogyakarta City is dominated by regosol soil type (99.87%), residential land (61.08%), and slope <8% (45.16%). The highest infiltration zone is classified as "Very Large" (24.55%), while the lowest is "Very Small" (0.06%). Most areas have a "natural normal" condition (16.23%). Further analysis showed a relationship between infiltration ability and flood risk. This research is expected to serve as a basis for BPBD Yogyakarta City in formulating groundwater conservation and flood mitigation policies to support more adaptive decision-making to climate change and urban growth

Keywords: infiltration, land use, water infiltration, spatial analysis, flood risk

Petrographic Analysis and Facies Interpretation of the Mundu Formation Carbonates in Gunung Pegat, East Java Implications for Reservoir Potential

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Abstract

TCarbonate reservoirs account for more than half of the world's hydrocarbon reserves; however, their quality is highly heterogeneous and is influenced by petrographic characteristics. The Mundu Formation in East Java represents one of the important carbonate units in the East Java Basin petroleum system. This study investigates the petrographic characteristics of limestone from the Mundu Formation in Gunung Pegat, East Java, to evaluate its carbonate reservoir quality. Fieldwork included geological mapping, stratigraphic profiling, and rock sampling, followed by petrographic analysis of seven thin sections (LP5, LP7, LP11, LP14, LP16, LP17, LP19). Thin sections were stained with Methylene Blue and examined under Plane Polarized Light (PPL), Cross Polarized Light (XPL), and a λ-530 gypsum plate compensator. The results reveal three main lithological types—wackestone, packstone, and grainstone —with porosity values ranging from 12% (fair) to 47% (excellent), according to Koesoemadinata (1980). Facies interpretation indicates deposition in inner and outer back-reef lagoon environments, with the highest reservoir quality observed in high-porosity grainstone. Additional petrophysical analysis on 14 samples reveals permeability values ranging from 42.119 to 361.086 mD, categorized as good to very good. These findings emphasize that lithological variability, depositional facies, and diagenetic processes are the key controls on carbonate reservoir quality in the Mundu Formation. The study provides valuable insights for carbonate reservoir modeling and hydrocarbon exploration in East Java.

Keywords: Petrography; Limestone; Porosity; Carbonate Facies

Aftershock Identification in Deep Underground Mines Using DBSCAN Clustering: A Synthetic Data Approach

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Abstract

Mining induced seismicity has become a major concern in deep underground mining due to increasing extraction depths and complex stress conditions. Large seismic events are often followed by aftershock sequences that pose significant risks to worker safety and mine infrastructure, highlighting the importance of reliable aftershock identification and exclusion zone determination for re-entry protocols. This study applies the Density-Based Spatial Clustering of Applications with Noise (DBSCAN) algorithm to a syntetics microseismic catalog of 1471 events with momen magnitudes ranging from −1.6 Mw to 2.5 Mw. After magnitude of completeness (Mc) filtering, DBSCAN was used to spatially cluster aftershocks, effectively distinguishing them from background seismicity and noise. Results show that large sequences, such as the momen magnitude event 2.5 Mw with 1,471 aftershocks, were reduced to 1,015 clustered events. The clustered events show a more precise spatial concentration than the original distribution, which makes it simpler to tell which aftershocks are related to the mainshock and which are not. Before clustering, the catalog had 1,471 aftershocks for each mainshock with a maximum magnitude of 2.5 Mw. After clustering, 1,015 aftershocks were correctly identified as part of the sequence cluster. This shows that DBSCAN was able to cut down on noise and identify groups that were seismically coherent.

Keywords: Seismicity, aftershock, DB-SCAN

Integrating Remote Sensing and Field Observations for Karst Morphological Analysis: Evidence from Rongkop, Gunung Kidul | Peter Pratistha Utama[1], Ikhwannur Adha[1], Ni Kadek Ema Sustia Dewi[1], Herdiana Anggrasari[1], Mahatvavirya Shukma Ajie[1], Zshelda Tiara Zelvany[1], Jihan Granita Adelina[1], Lawwina Margaretta Br Ginting[1]

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Abstract

Karst landscapes in tropical regions like Gunung Kidul, Indonesia, are ecologically vital yet notoriously difficult to map at scale due to their complex morphology and widespread anthropogenic interference. While remote sensing offers scalable tools for identifying karst features, its accuracy remains questionable without rigorous ground validation—especially where quarries, terraces, and vegetation mask true geological signals. This study bridges this gap by integrating Sentinel-2 imagery and DEM-NAS with field-verified observations to evaluate the reliability of remotely detected karst morphologies in Rongkop Subdistrict. We employed a dual-method approach: first, geomorphometric analysis (slope, curvature, TRI, doline density) derived from DEMs was used to classify landforms via decision tree classification; second, 142 landform units were validated in situ using geological mapping, lithological checks, and structured ground checking across 28 sites. Vegetation stress patterns (NDVI/EVI) and UAV-derived DSMs further refined interpretation. Results show that while remote sensing successfully identifies cockpit-style isolated hills and multibasinal drainage (accuracy: 87.3%, $\kappa = 0.82$), over 30% of automated detections were false positives—primarily quarries misclassified as dolines. Field data revealed that karst topography is fundamentally controlled by lithological heterogeneity: resistant reef limestone (10%) forms elevated, vegetated residuals, whereas pervasive calcarenite (90%) facilitates subsurface dissolution and depression formation. A modified Karstification Index, calibrated against field dissolution rates, spatially correlates with observed morphological intensity. Our framework demonstrates that accurate karst mapping in data-scarce tropics requires not better algorithms—but deliberate, iterative dialogue between pixels and pebbles. This protocol provides a replicable, low-cost methodology for regional-scale karst assessment, directly supporting groundwater management and geoconservation planning.

Keywords: karst morphology, remote sensing, DEM, ground checking, Rongkop

Salinity Effects on Anionic AEC Surfactant with n-Decane: IFT, Phase Behavior, Solubilization, Microemulsion Viscosity

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Abstract

n-Decane is a common model oil for isolating salinity effects in surfactant systems. In anionic AEC formulations, salinity influences IFT reduction, microemulsion topology, solubilization capacity, and flow behavior. The objectives of this study were to evaluate the effect of NaCl salinity (0–32,000 ppm) on IFT, Winsor transitions, solubilization ratio, and microemulsion viscosity in n-decane/AEC systems, and to determine working concentrations using a CMC test derived from IFT. In this study, the method used was to determine the CMC from the breakpoint of the IFT curve versus the log concentration of AEC in the reference brine. Working concentrations of 2 percent w/w. were selected above the CMC. IFT was measured with a spinning-drop tensiometer at a controlled temperature. Phase behavior was mapped through a salinity scan to identify Winsor I–III–II. The solubilization ratio was calculated from the volume of the middle phase at equilibrium composition. The viscosity of the microemulsion was characterized using a Brookfield DV3T (C40 spindle) with a stepwise shear protocol. In n-decane model systems, salinity governs interfacial properties and phase structure that, in turn, modulate rheology. CMC-by-IFT selection of working dose and tuning salinity near HLD 0 provide a reliable framework for AEC formulation design and for calibrating process parameters ahead of controlled core-flood studies.

Keywords: salinity, phase behavior, solubilization ratio, microemulsion viscosity, EOR

Study on the Mine Drainage System Design of The Pit Nusa in Lhoknga, Aceh Besar, Aceh.

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Abstract

Mine drainage management is an essential aspect of mining operations to ensure safety, efficiency, and sustainability. Poor water control may lead to operational disturbances, slope instability, and long-term environmental risks. Although studies on mine drainage exist, research focusing on integrated hydrological and hydrogeological analysis for both operational and post-mining conditions in the Lhoknga mining area, Aceh, remains limited. This study aims to design an effective mine drainage system that supports mining safety and minimizes environmental impacts. The research employed a combination of primary and secondary data, including rainfall records, groundwater measurements, hydraulic conductivity tests, infiltration rates, and topographic data. Hydrological analysis was conducted to calculate design rainfall, rainfall intensity, and runoff using the Gumbel distribution, Mononobe equation, and Rational method. Hydrogeological modeling applied Darcy's Law with finite-difference numerical simulation to evaluate groundwater flow and pit inflow. Water balance components were also analyzed, covering rainfall, evapotranspiration (Thornthwaite method), infiltration, runoff, and groundwater contribution. The results established a 30-year return period design rainfall of 57.5 mm/day, yielding an intensity of 7.91 mm/hour. The water balance analysis revealed that surface runoff is the dominant component, accounting for 70.33% of total precipitation. The hydrogeological model (R2=0,8) accurately predicted the formation of a cone of depression post-mining, with an estimated groundwater table drawdown of 5-15 meters. The primary contribution is a detailed technical drainage plan specifying designs for open channels and sumps for the mine drainage system. The plan necessitates combinations of open channel drainage and a pumping system the Northern Pit, while the Southern Pit can initially rely on gravity drainage.

Keywords: hydrology, hydrogeology, mining, mine drainage system, water resources management

Track: Industrial Engineering

Supported by :

Increasing Dishwashing Soap Production Capacity through the Implementation of Mixer Machines in Small and Medium Enterprises (Case Study on the Yogyakarta Clean SME)

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Abstract

Small and Medium Enterprises (SMEs) play a vital role in supporting the national economy, yet many still rely on manual processes that limit efficiency and product consistency. This study investigates the implementation of a low-cost mixer machine to improve dishwashing soap production capacity in SMEs. A comparative case study was conducted at Sahabat Bersih SME by analyzing production performance before and after the adoption of the mixer. Data were collected through time studies, production records, and quality tests. The findings show that the mixer machine increased production capacity by 700%, reduced mixing time by 33%, and improved product homogeneity. The study confirms that the application of Appropriate Technology (TTG) not only enhances productivity and product quality but also strengthens SME competitiveness. These results provide practical insights for SME owners and contribute to the literature on small-scale technology adoption in the household chemical sector.

Keywords: Dishwashing soap, Production capacity, Small and medium Enterprises, Mixer machines, Appropriate technology

Track: Economics

Supported by :

Towards Resilient Sustainability: An Adaptive Model of Risk Management Integration in Sustainability Accounting for High-Risk Industries

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Abstract

High-risk industries in Indonesia, particularly in the energy, mining, and manufacturing sectors, face significant pressures in maintaining sustainability performance due to high exposure to environmental, social, and governance (ESG) risks. This study aims to develop an adaptive model that integrates risk management and sustainability accounting to strengthen corporate resilience. Panel data consists of 30 companies with 150 firm-year observations during the 2020–2024 period. The variables include Risk Disclosure Score as a proxy for risk management, ESG Score as a representation of sustainability accounting, and both financial (ROA) and non-financial performance (NF Index). Descriptive results show ROA ranging from 2.5% to 15.2%, ESG Scores between 57–73, Risk Disclosure Scores between 60–76, and NF Index between 55–71. These findings indicate a positive trend in risk and sustainability disclosure over the past five years. Preliminary analysis supports the hypothesis that risk disclosure is positively related to sustainability accounting practices, which in turn improves financial and non-financial performance. The study contributes theoretically by reinforcing the integration of COSO ERM and global ESG standards (GRI, SASB, IFRS S1 & S2), and practically by offering an adaptive framework that companies and regulators can use to enhance transparency, accountability, and competitiveness in high-risk industries.

Keywords: risk management, sustainability accounting, ESG, adaptive model, high-risk industries

Environmental Cost Evaluation of Food Industry Waste

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Abstract

Referring to environmental economic theory, production activities can have impacts (costs or benefits) for third parties not directly involved. Food industry waste that pollutes the environment is a form of negative externality. This study aims to conduct a comprehensive evaluation of the environmental costs caused by food industry waste and assess the effectiveness and economic efficiency of various waste management alternatives. The results of this study are expected to contribute to the development of more economically just environmental policies and encourage the food industry to be more responsible in maintaining environmental sustainability through a measurable and data-driven approach. The estimated environmental costs of food industry waste can reach tens of millions of rupiah per year, depending on the scale of the industry, the type of waste, the location, and the management method. By internalizing these costs, the industry can be more encouraged to adopt more responsible waste management technologies. Keywords: environment, cost, food, waste, sustainable

Keywords: environment, cost, food, waste, sustainable

Financial Inclusion, Macroeconomic Conditions, and Their Role in Indonesia's Financial Stability

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Abstract

Financial inclusion improves financial stability by strengthening the bank funding base through savings, encouraging broader credit distribution, especially for SMEs, and reducing the risk of default. By providing access to financial products and services for the public and businesses, financial inclusion creates a more resilient, efficient, and resilient system that can withstand economic shocks. This study aims to analyze the influence of financial inclusion and macroeconomic conditions on financial stability in Indonesia, from January 2021 to May 2025. In this period, Covid-19 has affected the ability of businesses to survive in the midst of the crisis. The ARDL dynamic model was chosen to accommodate the economic dynamics during and after the pandemic The main advantages of ARDL are its ability to analyze long-run and short-run relationships simultaneously, handle variables with varying degrees of integration (even non-stationary ones), and be efficient for small data samples. Based on the ARDL model regression results, financial inclusion and price stability influence financial stability in Indonesia, where higher credit access and rising inflation can increase the risk of bank bankruptcy through increased non-performing loans. Financial inclusion and inflation can impact financial stability through complex mechanisms. Increasing credit access without strong risk management and adequate regulation can increase the risk of non-performing loans, while uncontrolled inflation can exacerbate the situation by affecting borrowers' repayment capacity. However, with appropriate policies, financial inclusion can strengthen the stability of the financial system in the long term.

Keywords: financial stability, financial inclusion, macroeconomics, ARDL

The Nexus of Foreign Capital Flows and Stock Index: Evidence from Indonesia

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Abstract

The relationship between foreign capital flows and the stock index is mutually influential and creates a cycle. Economic growth and market stability, indicated by rising stock indexes, attract foreign capital inflows, which in turn strengthens the stock index. This study aims to explore the relationship between foreign capital flows and the Jakarta Composite Index (JCI) in Indonesia from 2010 to 2024. Based on Granger causality, foreign capital flows influence the Jakarta Composite Index (JCI), but not vice versa. This finding is supported by the VECM model analysis, using impulse response function analysis and variant decomposition. Maintaining the stability of foreign capital flows in Indonesia is crucial, as large foreign capital inflows or outflows from a country can trigger or exacerbate stock market volatility. Significant capital outflows, often driven by global sentiment such as rising US interest rates or geopolitical uncertainty, can cause foreign investors to withdraw funds from the stock market, causing stock prices to weaken and impacting the Jakarta Composite Index (JCI). Conversely, capital inflows can support the stock market and indicate investor optimism about a country

Keywords: foreign direct investment, portfolio investment, capital market, stock index

The Impact of ESG Performance on Financial Performance: A Study of Companies in the SRI-KEHATI Index

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Abstract

The research investigates how Environmental, Social, and Governance (ESG) performance affects the financial performance of corporations represented in Indonesia's SRI-KEHATI Index. Using a quantitative approach with regression analysis, the research examines ESG scores sourced from Morningstar Sustainalytics, alongside financial metrics such as Return on Assets (ROA), and control variables including debt-to-asset ratio and institutional ownership. The findings reveal that ESG performance, comprising environmental, social, and governance dimensions, does not have a significant direct effect on financial performance in this sample. Conversely, the debt-to-asset ratio significantly influences profitability, whereas institutional ownership shows no measurable impact. The results suggest that the relationship between sustainability efforts and financial outcomes might be more long-term or context-dependent, warranting further research into sectoral and regional variations.

Keywords: ESG performance, financial performance, SRI-KEHATI, institutional ownership

The Impact and Implications of IDX Regulation (Kep-00027/BEI/03-2020) Concerning the Relaxation of Reporting Deadlines for Audit Delay: Before, During, and After the COVID-19 Pandemic

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Abstract

Audits play a crucial role in ensuring the reliability of financial statements for stakeholders. However, audit delay may undermine information quality, reduce market confidence, and disrupt decision-making. To address these challenges, the Indonesia Stock Exchange (IDX) issued Regulation Kep-00027/BEI/03-2020, which relaxed reporting deadlines. Nevertheless, limited studies have examined the effectiveness of this regulation across the periods before, during, and after the COVID-19 pandemic. This study aims to analyze the impact of IDX regulation on audit delay by considering auditee characteristics, auditor characteristics, and external factors, with audit tenure as a moderating variable and COVID-19 as a control variable. However, the study focuses specifically on manufacturing companies listed on the IDX during the period from 2016 to 2024. The research sample is drawn from this population, consisting of manufacturing companies listed on the IDX between 2016 and 2024. This research uses Regression Analysis for 135 observations and is divided into 3 periods: before (2016-2019), during (2020-2022), and after (2023-2024). The findings reveal that the relaxation policy helped reduce audit delay during the pandemic, although its effectiveness varied depending on firm size, profitability, ownership, and operational complexity. Audit tenure demonstrated a dual role: facilitating faster audits for complex firms due to accumulated auditor knowledge, yet potentially compromising independence when the relationship extended excessively.

Keywords: audit delay, IDX regulation, audit tenure, COVID-19, financial reporting

The Effectiveness of Government Policies in Reducing Poverty and Income Inequality in Indonesia: An Empirical Study Using the PSM Method

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Abstract

Despite economic growth, Indonesia faces ongoing poverty and inequality issues. Social assistance programs have been implemented, but there is limited evidence of their long-term effectiveness. This study assesses the impact of these programs on four household outcomes related to sustainable income: Training Accessibility, SMSE Accessibility, Information Accessibility, and Financial Inclusion. Using propensity score matching with the SUSENAS 2022 data, the research estimates the effects through logistic regression based on pre-treatment factors, including demographics, assets, and infrastructure. Kernel matching calculates the Average Treatment Effect on the Treated (ATT), tested across urban and rural groups. Findings show that social programs have a positive relationship with SMSE Accessibility (ATT = +0.025, $p < 0.01$), thereby improving small enterprise and market access. No effects are found on Training and Information Accessibility, indicating pre-existing differences rather than program impacts. Surprisingly, a negative effect is observed for Financial Inclusion (ATT = -0.053, $p < 0.01$), where treated households exhibit lower formal financial inclusion, suggesting that further investigation is warranted. These findings offer critical insights for policymakers: while current social assistance programs effectively enhance micro-enterprise development, they should be complemented with targeted financial literacy initiatives and improved access to formal banking services to maximize long-term poverty reduction and economic empowerment outcomes.

Keywords: Income Inequality, Poverty, Propensity Score Matching

Multidimensional Energy Poverty Deprivation among Households in Yogyakarta, Indonesia

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Abstract

Energy poverty is increasingly viewed as a multidimensional challenge that extends beyond electricity connections to include clean cooking, appliance ownership, and digital access. Although Indonesia has achieved near-universal electrification, little is known about how energy poverty evolves at the provincial level, particularly in Yogyakarta where rural–urban inequalities persist. This study applies the Multidimensional Energy Poverty Index (MEPI), based on the Alkire–Foster method, to Survei Sosial Ekonomi Nasional (SUSENAS) data for 2021–2023, covering about 4,000 households per year. Five equally weighted indicators namely cooking fuel, electricity access, appliances, entertainment/education devices, and communication facilities were used, with a cutoff of 0.30 to identify energy-poor households. The results show that the incidence of energy poverty declined from 19.8 percent in 2021 to 14.4 percent in 2023, while the intensity of deprivation remained stable at about 44 percent. Gunung Kidul consistently exhibited the highest deprivation, while Bantul and Yogyakarta City recorded the lowest. Cooking fuel and communication were the largest contributors, with communication deprivation rising to affect more than half of households by 2023. The findings highlight that energy poverty in Yogyakarta is no longer primarily about electricity access but about the ability to use energy effectively, underscoring the need for policies promoting clean cooking, appliance affordability, and digital inclusion to achieve Sustainable Development Goal 7.

Keywords: energy poverty, MEPI, Yogyakarta, SUSENAS, multidimensional deprivation

The Impact of Urbanization on Income Inequality in Indonesia

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Abstract

Urbanization is often assumed to increase inequality in the early stages of development, but the evidence for Indonesia is inconsistent due to interprovincial heterogeneity and spatial fragmentation. A major gap is the lack of studies that combine the dynamics of the cross-time panel with explicit spatial diagnostics. This study reassesses the impact of urbanization on income inequality in Indonesia by highlighting variations between regions and their spatial grouping patterns. We used 33 provincial balanced panel data from 2010–2023 (462 observations), Hausman test-based estimator selection, cross-dependency tests (Pesaran, Frees, Friedman), and descriptive spatial diagnostics: Moran's I annual, Moran scatterplot, and thematic maps. Concise statistics (mean Gini ~0.36; range ~0.23–0.45) were examined to uncover hidden heterogeneities, while distance-based weight matrices were critically evaluated against the archipelago context. The main results show that urbanization has no significant effect nationally on inequality, indicating that national urbanization masks local variations. Cross-dependencies appear unevenly: Frees indicates a strong correlation across sub-clusters, while global sizes are weaker, reflecting fragmented economic integration. Moran's I increased to a peak around 2018 and remained significant into 2023, signaling persistent spatial polarization. Moran scatterplots reveal High–High clusters (e.g. DKI–West Java–DIY), Low–Low (e.g. North Maluku–NTT–West Papua), as well as High–Low outliers (e.g. Aceh, Papua) which is in harmony with the symptoms of resource curse. The contribution of this study is a panel–spatial integrated reading framework that revises the illusion of urbanization homogeneity, and guides regional-based policy recommendations: strengthening inter-island connectivity, medium-sized urban development, and cluster-sensitive intervention design

Keywords: Income Inequality, Urbanization

Study on the Level of Fairness, Transparency, Accountability and Quality of Education in Public Service Institutions of Higher Education

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Abstract

The purpose of this research is to examine how students view the application of the values of accountability, openness, and justice in higher education as well as how these views affect educational quality. Using a descriptive quantitative technique and descriptive analysis, the study includes 122 students from UPN "Veteran" Yogyakarta's Faculty of Economics and Business. The mean is used as a measure of central tendency in the data analysis technique. Fairness, accountability, transparency, and educational quality are among the variables examined. According to the findings, fairness received the greatest rating from students (mean score of 4.24), followed by accountability (mean score of 3.95), and transparency (4.18). Fairness, which encompasses equity in academic treatment, learning opportunities, and assessment, significantly influences perceptions of the quality of education. Openness is reflected in transparency. Transparency reflects openness in financial and academic data, but more work is still required to fully comprehend how tuition fees are determined. Although accountability has been established, there is still a need for improvements in the reporting and evaluation systems for fund utilisation. In summary, improving the quality of higher education requires the combination of these three governance principles. As part of ongoing initiatives to raise the standard of education, this study offers insightful advice to university administrators on how to promote accountability, openness, and justice.

Keywords: Good Governance University, Higher Education, Public Sector, Service Quality, Sustainability Improvement

Track: Management

Supported by :

Customer Relationship Management (CRM) Based Artificial Intellegent (AI): A Bibliometric Analysis

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Abstract

In an increasingly digital business environment, companies must continuously meet evolving customer expectations. Customer Relationship Management (CRM) has long served as a strategic tool to build and maintain customer relationships, but its integration with Artificial Intelligence (AI) is transforming the depth and quality of these interactions. This study aims to map and critically assess the current state of research on AI-driven CRM, providing a comprehensive foundation for future scholarly inquiry and managerial practice. Employing bibliometric analysis of 987 publications published in 2024 using PoP and VOSviewer, this study identifies emerging themes, research trends, and significant knowledge gaps. Key underexplored areas include organizational efficiency, CRM platforms, customer personalization, PRISMA-based methodologies, big data applications, e-banking innovations, and implementation within higher education institutions (HEIs). By consolidating fragmented insights and highlighting research frontiers, this study contributes to both academia and practice by offering a structured roadmap for advancing the theory and application of AI-enabled CRM.

Keywords: Publish or Perish, VOSviewer, Google Scholar

The Impact of Bank Health on the Value of Banking Sector Companies Listed on the IDX 2020-2023

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Abstract

This study analyzes the impact of bank health on firm value using the RGEC framework, which includes Risk Profile, Good Corporate Governance (GCG), Earnings, and Capital. Bank health is widely recognized as a crucial determinant of investor confidence and overall financial stability, making its relationship with firm value particularly relevant for the banking sector. The research focuses on banking companies listed on the Indonesia Stock Exchange (IDX) during 2020–2023, a period marked by post-pandemic recovery and increased market uncertainty. An explanatory quantitative method was applied, utilizing financial report data from 47 banks. Based on purposive sampling, 36 firms were selected as the final sample. Multiple linear regression analysis was conducted with the support of SPSS 25 software. The findings reveal that Risk Profile and Capital do not significantly affect firm value, while GCG and Earnings demonstrate a significant positive influence. These results suggest that strong governance practices and profitability are key drivers of investor perception and firm valuation. In contrast, capital adequacy and risk exposure appear to play a less decisive role in market assessments. The regression model is statistically significant ($F = 4.603$, $p = 0.002$) but explains only 11.7% of the variance in firm value, indicating that additional factors beyond RGEC contribute to valuation outcomes. Overall, the study underscores the importance of GCG and Earnings in enhancing firm value, while also highlighting the need for further research into other financial and non-financial variables that shape investor decision-making in the banking sector.

Keywords: Risk Profile, Good Corporate Governance (GCG), Earnings, Capital, Firm Value

Influence of Underwriter Reputation, Firm Size, Profitability, and Offering Size on Indonesia IPO Underpricing

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Abstract

This study examines the effect of underwriter reputation, firm size, profitability, and share offering percentage on IPO underpricing in the Indonesia Stock Exchange from 2021 to 2024. Underpricing, where the initial stock price is lower than the secondary market price, remains a frequent phenomenon in Indonesia, attracting attention from investors and issuers. This study addresses the question: How do underwriter reputation, firm size, profitability, and share offering percentage influence IPO underpricing. A quantitative approach is applied using multiple regression analysis on secondary data from companies conducting IPOs during the period. The results indicate that underwriter reputation has no significant effect on underpricing, while firm size, profitability, and share offering percentage negatively impact underpricing. These findings provide insights for investors in evaluating IPO stock prospects and for companies in designing offering strategies to minimize underpricing. This research contributes to the financial literature and serves as a reference for academics, practitioners, and issuers in understanding IPO market dynamics in Indonesia.

Keywords: Underwriter Reputation, Firm Size, Profitability, Share Offering Percentage, Underpricing

Enhancing the Role of ISO/IEC 17025:2017 Accredited Laboratories in Supporting Tri Dharma Perguruan Tinggi at Geological Engineering Department of UPN "Veteran" Yogyakarta

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Abstract

Laboratories play a crucial role in supporting the Tri Dharma Perguruan Tinggi—education, research, and community service—in Indonesian higher education institutions. Accreditation under ISO/IEC 17025:2017 provides international recognition of laboratory competence, impartiality, and operational consistency. However, accreditation status alone does not automatically ensure optimal utilization of laboratory resources. This study examines the case of two accredited laboratories—the Optical Mineralogy and Petrology Laboratory and the Micropaleontology Laboratory—at the Department of Geological Engineering, Universitas Pembangunan Nasional "Veteran" Yogyakarta. Using a mixed-methods approach, the research relied on primary data from direct observations, training and certification records, and internal quality audits, complemented by secondary documentation such as standard operating procedures, calibration certificates, and utilization reports. Data were analyzed through thematic analysis, descriptive statistics, and gap and SWOT frameworks to evaluate laboratory performance. Findings reveal that accreditation has strengthened organizational structures, enhanced staff competencies, and improved technical reliability. Nevertheless, several challenges remain, including overlapping responsibilities in quality and administrative management, the need for regular refresher training, insufficiently consistent calibration schedules, and overly layered organizational structures. To address these issues, the study proposes strategies such as targeted recruitment, annual calibration programs with digital monitoring, organizational streamlining, and enhanced internal audits. The study concludes that ISO/IEC 17025:2017 accreditation, when combined with systematic optimization, can significantly enhance the role of laboratories in higher education by ensuring credible teaching, research, and community services. Further research should include comparative and longitudinal studies, as well as exploration of digital quality management systems and industry partnerships to maximize the long-term impact of accredited laboratories.

Keywords: accredited laboratories, ISO/IEC 17025:2017, Tri Dharma Perguruan Tinggi, quality assurance

The Influence of Future Time Perspective, Financial Risk Tolerance, and Knowledge of Financial Planning for Retirement on the Retirement Saving Behavior of SMEs Entrepreneurs in Sleman Regency

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Abstract

Saving is a method effective in supporting future life, especially for SMEs that do not have pension insurance. This study analyzes the influence of future time perspective, financial risk tolerance, and knowledge of financial planning for retirement on retirement saving behavior, with gender as a moderating variable. The population is MSMEs in Sleman Regency. A total of 102 SMEs in Sleman Regency were selected using a specific sampling technique. The analysis technique with regression Moderation using Partial Least Squares-Structural Equation Modeling (PLS-SEM). The results of the study indicate that future time perspective and knowledge of financial planning for retirement have a positive effect on retirement saving behavior. Financial risk tolerance does not affect retirement saving behavior. Gender moderates the relationship between future time perspective, financial risk tolerance, and knowledge of financial planning for retirement on retirement saving behavior. Results study. This emphasizes the importance of future awareness, financial risk tolerance, and understanding of financial planning in shaping savings behavior. Providing policy recommendations to improve the financial readiness of SME entrepreneurs. Keywords: Future time perspective, financial risk tolerance, knowledge of financial planning for retirement, retirement saving behavior.

Keywords: Future time perspective, financial risk tolerance, knowledge of financial planning for retirement, retirement saving behavior

When Authenticity Meets Sustainability: The Role of Environmental Awareness in Shaping Tourist Visiting Behavior | Dyah Sugandini[1], Hendro Widjanarko[1], Hai-Dung Do[2], Jau-Rong Chen[2], Rezky Saputra[3], Rahajeng Arundati[4], Rava Fernanda Purnama[4], Ernisa Rahma Wahyuni[1]

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Abstract

This study aims to analyze the effect of perceived authenticity on environmental awareness and its implications on tourist visit behavior by considering the role of destination attachment and sustainability motivation. Data were obtained through a survey of respondents who had travel experience, then analyzed using a structural model approach. The results showed that perceived authenticity had a positive and significant effect on environmental awareness. Furthermore, environmental awareness was found to be a major predictor in shaping responsible tourist visit behavior. The structural model also showed a high R^2 value, confirming that the environmental awareness variable was able to act as a mediating mechanism that bridged the influence of authenticity on tourist visit behavior. These findings indicate that the integration of cultural authenticity and environmental education is very important in promoting sustainable tourism.

Keywords: Perceived Authenticity, Environmental Awareness, Sustainability Motivation, Destination Attachment, Tourist Visit Behavior

Accuracy Test Of Technical Analysis Using Ichimoku Kinko Hyo, Moving Average Convergence Divergence, And Relative Strength Index On Stock Price Of Companies Listed In The Infobank15 Index

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Abstract

Technical analysis indicators are widely used by investors to support investment decisions. This study aims to evaluate the accuracy of Ichimoku, MACD, and RSI as guidelines for predicting stock price movements and identifying buy–sell signals. Beyond relying on indicators, traders are also advised to maintain discipline, money management, and trading psychology. The research focuses on Infobank15 index stocks observed from August to December 2023, using secondary data from the TradingView platform. Predictive signals and actual prices were collected from daily (D1) closing prices and analyzed using the documentation method. To test the accuracy of each indicator, the Mann-Whitney non-parametric test was employed to statistically compare predictive signals against actual prices. The results indicate that there is no significant difference between the predictive signals of Ichimoku Kinko Hyo and MACD indicators compared to actual prices. Ichimoku and MACD are declared accurate. However, the study reveals a disparity between the predicted prices generated by the RSI and actual prices. Therefore, RSI are declared inaccurate. Based on the analysis and comparison of the three indicators in terms of the number of signals, percentage accuracy of signals, and average return rates, it can be concluded that the MACD indicator delivers a more favorable return rate compared to the other two indicators. The Ichimoku Kinko Hyo is more effective at minimizing risks, while the RSI is the only indicator in this study that proved to be inaccurate.

Keywords: Technical Analysis, Ichimoku Kinko Hyo, Moving Average Convergence Divergence, Relative Strength Index, Infobank15

Understanding Green Purchase Intention through the Integration of TPB and NAT in Special Region of Yogyakarta (DIY)

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Abstract

The rapid growth of global consumption has intensified environmental challenges, with individual activities contributing substantially to greenhouse gas emissions and ecological degradation. This condition highlights the urgency of examining the psychological and social factors that influence green purchase intention, particularly in developing countries such as Indonesia where awareness and practices of sustainable consumption are still developing. The Theory of Planned Behavior (TPB) and the Norm Activation Theory (NAT) have been widely employed to investigate pro-environmental actions. However, only a few attempts have been made to integrate both theoretical frameworks, despite their potential complementarity in providing a more holistic understanding of consumer decision-making processes. Survey data were collected from 200 respondents. The research model was tested using Structural Equation Modeling with Partial Least Squares (PLS-SEM). The results reveal that awareness of consequences (AOC), subjective norms (SN), and perceived behavioural control (PBC) significantly influence green purchase intention, while attitudes exert no significant effect on personal norms. Furthermore, personal norms emerge as a central mechanism that strongly drives the actual purchase of environmentally friendly products, bridging intention and behaviour. The integration of this two theories provide a stronger explanatory model compared to using either theory alone. Theoretically, this study extends the literature on green purchase intention by combining two theories into a single integrative framework. Practically, the findings provide actionable insights for businesses, marketers, and policymakers to design campaigns, strategies, and policy initiatives that can encourage sustainable consumption, enhance environmental responsibility, and foster long-term ecological balance in the Special Region of Yogyakarta.

Keywords: TPB, NAT, Green Product, Green Purchase Intention.

Tourism in Supporting Indonesia's Creative Industry: Ansoff Matrix Approach

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Abstract

The creative industry plays a strategic role in driving economic growth, creating jobs, strengthening cultural identity, and enhancing Indonesia's global competitiveness. However, its development still faces challenges such as limited infrastructure, low digital literacy, uneven human resource skills, and limited access to financing. This study aims to analyze the growth strategies of the creative industry and tourism in Indonesia through the Ansoff Matrix framework using quantitative and qualitative approaches. Data were obtained from a BPS survey and in-depth interviews with 48 creative SMEs, then analyzed using NVivo. The results show that growth strategies can be realized through collaboration (co-creation) between creative industry SMEs and tourism destination managers, as well as the use of digital technology and social media. Collaboration between the creative industry and tourism can increase tourist appeal while empowering the local economy. This study emphasizes the importance of synergy between the government, the private sector, communities, and academics in strengthening sustainable creative tourism, improving international service standards, and expanding access to financing for product innovation. These findings provide an empirical contribution and offer a strategic framework for the development of the creative economy and tourism, particularly in developing countries.

Keywords: Creative Industry, Tourism, Ansoff Matrix, SMEs

The Role of Lean Operations on Company Performance Mediated by Six Sigma at the Wonosobo Regional Public Service Agency (BLUD)

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Abstract

Rapid development and intense competition demand that organizations, including those in the public sector, improve service quality and efficiency. Methodologies like Lean Operations and Six Sigma have proven effective in the private sector, yet their application and synergistic effect, particularly in public service entities like Regional Public Service Agencies (BLUD), remain underexplored. Purpose: This study aims to analyze the effect of Lean Operations on the corporate performance of the Wonosobo BLUD, with Six Sigma tested as a mediating variable. Methodology: This quantitative study employs a survey method, collecting data via a Likert-scale questionnaire from 89 respondents within the Wonosobo BLUD. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the direct and mediating effect hypotheses. Results: The findings confirm that Lean Operations has a significant positive effect on corporate performance. Furthermore, Six Sigma not only has a direct positive effect on performance but also significantly mediates the relationship between Lean Operations and corporate performance, indicating that Six Sigma's data-driven methodology is a crucial mechanism for translating Lean's efficiency gains into sustained performance improvements. The model demonstrates strong predictive power, explaining 70% of the variance in corporate performance. Contribution: This research provides both theoretical and practical contributions by validating the integrated role of Lean and Six Sigma in a public sector context, offering BLUD management a strategic roadmap for enhancing performance by first establishing Lean principles and then leveraging Six Sigma for controlled, high-quality outcomes.

Keywords: Lean Operations, Six Sigma, Corporate Performance, Public Sector, PLS-SEM.

Development of an Integrated Web-Based Information System for Enhancing External Collaboration Management at UPN "Veteran" Yogyakarta

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Abstract

Higher education institutions increasingly depend on external collaborations to expand their impact. At UPN "Veteran" Yogyakarta, however, the management of Memorandum of Agreement (MoA) within the Institute for Research and Community Service (LPPM) has long relied on manual procedures, leading to inefficiencies, communication delays, and difficulty in monitoring agreements. This study aims to design and implement an integrated web-based information system that streamlines collaboration management and enhances institutional governance. The research adopts a Research and Development (R&D) approach combined with the Software Development Life Cycle (SDLC) using the Waterfall model. Requirements were gathered through interviews, focus group discussions, and document analysis with key stakeholders. The system was designed using Unified Modeling Language (UML) and implemented with Node.js, Express, and MongoDB to provide flexibility in managing document-based data. Testing involved black-box verification and User Acceptance Testing (UAT), followed by pre- and post-implementation evaluation of processing time, error rates, and user satisfaction. Results show that the average verification time for MoA decreased from five to two working days, while administrative errors fell by 60%. Users rated the system highly for usability and particularly valued automated notifications for expiring agreements. The study contributes a practical tool that improves efficiency, accountability, and transparency in managing external collaborations. Although current limitations include the absence of integration with other campus systems and lacks of a mobile application, the system establishes a solid foundation for future enhancements.

Keywords: Information System, Collaboration Management, Web-Based System, Research and Community Service, MoA

An Innovative Model of Agricultural Supply Chain Distribution to Strengthen Vegetable Farmers' Income: An Analysis of the Tarubatang Village Farmers Group

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Abstract

The agricultural supply chain plays an important role in determining farmers' income, particularly in the horticultural subsector, which is highly sensitive to distribution speed and market dynamics. However, farmers Vegetables in Tarubatang Village, Selo District, Boyolali, still face chain distribution dominated length middlemen so that price sell low and position bid weak. Research This aim analyze influence Efficiency Distribution to Income farmer as well as formulate innovative models more distribution fair and sustainable. Research use approach quantitative with method survey against 30 farmers, equipped with interview in-depth and observational. Interview results analyzed use technique analysis for identify pattern perception farmer to distribution and constraints faced in chain supply. Quantitative data analysis done with statistics descriptive and simple linear regression. Research results show that efficiency distribution influential positive and significant to income farmers ($p < 0.05$), with contribution of 46% of variation income explained by factors distribution. Average income farmer increased by 37% after application of distribution models based institutional group farming and digitalization marketing. Findings This confirm that integration group farmer with digital platforms can shorten chain distribution, increase transparency price, and strengthen position bid farmers. Implications practical from study This is the need support government area in strengthen institutional farmers and access digital technology for realize distribution efficient and sustainable agriculture.

Keywords: chain supply, distribution, income farmers, innovative.

Track: Environment Studies

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Incentive Mechanisms through Payments for Environmental Services in Sustainable Agriculture, Sleman, Indonesia

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Abstract

Food security is a strategic issue heavily influenced by the sustainability of agricultural land. In this context, Sleman Regency has established a Sustainable Food Agriculture Area (KP2B) through Regional Regulation Number 6 of 2020 on the Protection of Sustainable Food Agricultural Land (LP2B). This regulation mandates the provision of incentives to farmers of LP2B, although the Regent Draft Regulation (Raperbup) governing the technical mechanisms of incentives has not been ratified. Therefore, this research aimed to identify key parameters in calculating LP2B incentives as a form of implementing Payments for Environmental Services (PES). The method adopted was Interpretive Structural Modeling (ISM), which included seven experts from academia, government, farmers, and the private sector. The results showed that soil fertility, irrigation availability, and agricultural productivity were key parameters complementing each other. Soil fertility was the basic potential, irrigation was the main supporting factor, and productivity was the tangible output. These results confirmed that the LP2B incentive scheme was an effort to internalize the value of environmental services into public policy. Furthermore, PES-based incentives served as a strategic mechanism based on regulations to maintain regional food security and environmental quality.

Keywords: Payments for Environmental Services (PES), Incentives, Sustainable Agriculture, Ecosystem Services, Food Security.

Assessment of Groundwater Quality and Management Approaches for Iron-Rich Groundwater Using Aeration–Filtration Treatment at Universitas Pembangunan Nasional "Veteran" Yogyakarta

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Abstract

Groundwater quality often does not meet the standards as a result of geological factors and human activities. This study was conducted at the University of Pembangunan Nasional "Veteran" Yogyakarta (UPNVY), Condongcatur Campus, to evaluate groundwater quality and provide appropriate management recommendations. Groundwater samples were taken from three bore wells: Rectorate Building (SR), Nyi Ageng Serang Lecture Hall (SNAS), and Prof. Bambang Soeroto Lecture Hall (SAL). Sampling followed SNI 6989.57:2008, while laboratory tests were performed on physical parameters (turbidity and TDS) and chemical parameters (pH and Fe). The results showed that turbidity, pH, and iron concentration at most sampling did not meet the quality standards. Water turbidity reached 39.89 NTU at the SAL, far above the threshold of <3 NTU. Iron content was recorded at 5.85 mg/L in the SNAS, exceeding the 0.2 mg/L standard. The pH values at all three sites were also below the standard, ranging from 6.1 to 6.4, indicating acidic conditions. Geological analysis indicated that the high Fe content is associated with the weathering of volcanic minerals such as augite, hornblende, and biotite, which are abundant in Merapi Muda deposits. As a follow-up, a water treatment system was designed using an aeration–filtration combination with shell sand media. This method proved effective to reduce iron concentration by up to 99.9%, decrease turbidity by more than 90%, and raise pH to a more neutral level. In the treatment scenario for SAL, Fe concentration decreased from 2.74 mg/L to 0.002 mg/L.

Keywords: Groundwater, Water quality, Iron content (Fe), Aeration–filtration, Water treatment

Reducing Landslide Risk in Yogyakarta Through Three-Dimensional Gravity Modeling as A Proactive Disaster Risk Reduction Strategy

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Abstract

Landslides in the Special Region of Yogyakarta, Indonesia, are widely recognized as being triggered by steep topography, active tectonics, and seasonal monsoon rainfall. however, conventional hazard assessments frequently overlook critical subsurface geological controls such as fault zones, weathered bedrock interfaces, and fractured basement rocks—that mayr serve as primary sliding surfaces. This study directly addresses this limitation by developing a novel three-dimensional gravity-based model to enhance landslide susceptibility mapping and support regional mitigation strategies. High-resolution (~200 m) GGMplus gravity data were processed using Oasis Montaj™ software, with regional-residual anomaly separation performed through upward continuation to 5 km and second-order polynomial surface fitting. Subsequently, three-dimensional density inversion was applied to delineate shallow subsurface structures influencing slope stability. The total Bouguer anomaly ranges from –18.6 to +181.4 mGal: strong positive anomalies (>+100 mGal) are concentrated over Mount Merapi, reflecting dense, unweathered volcanic intrusions and lava flows, while pronounced negative anomalies (<–10 mGal) dominate central and eastern sectors, correlating with thick colluvium, weathered volcaniclastic deposits, and fractured basement rocks. The residual anomaly map (–2.5 to +2.6 mGal) effectively isolates shallow density contrasts, revealing that 82% of recorded landslides (n=142 events, 2010–2022) spatially coincide with low-density zones (<–1.0 mGal), particularly clustered along the NW–SE-trending Opak Fault interpreted as a zone of fault gouge, brecciation, or fluid-saturated fractures that critically control slope failure mechanics. Conversely, positive residual anomalies (>+1.0 mGal) correspond to geologically stable domains underlain by dense intrusions or compacted layers. This study demonstrates that 3D gravity modeling provides a powerful, non-invasive tool for identifying landslide-prone zones governed by hidden subsurface architecture, offering significant practical value for land-use planning and disaster risk reduction in complex volcanic terrains.

Keywords: 3D gravity modeling, landslide, GGMplus, residual Bouguer anomaly, Yogyakarta

Track: Chemical Engineering

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Influence of Acetyl Content and Degree of Substitution on the Structural Properties of Cellulose Acetate for Pressure Retarded Osmosis

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Abstract

Cellulose acetate (CA) has been extensively utilized as a membrane material in pressure retarded osmosis (PRO) owing to its adjustable hydrophilicity, mechanical robustness, and chemical stability. Although earlier research has highlighted the role of acetylation in modifying the properties of CA, the specific impact of acetyl content and degree of substitution (DS) on structural features pertinent to PRO applications is still not well understood. The present study aims to fill this gap by systematically investigating CA derived from different lignocellulosic feedstocks. The purpose is to assess the relationship between acetyl content, DS, and the resulting structural properties of CA, and to determine the most appropriate biomass precursor for the development of PRO membranes. Cellulose was isolated from oil palm empty fruit bunches (EFB), rice straw, and waste paper, followed by acetylation. The obtained CA was characterized using Fourier-transform infrared spectroscopy (FTIR) to confirm esterification, while acetyl content and DS were quantitatively determined. Commercial CA served as the reference standard. The results demonstrated marked differences among the feedstocks. Waste paper yielded cellulose monoacetate (DS = 1.37; acetyl 26.9%), exhibiting incomplete acetylation with weak ester absorption. EFB produced cellulose diacetate (DS = 2.80; acetyl 43.0%), displaying spectral features comparable to commercial CA. Rice straw resulted in cellulose triacetate (DS = 3.91; acetyl 51.6%), indicating the most extensive substitution and superior structural quality. Higher DS was positively associated with enhanced thermal stability, reduced hydrophilicity, and improved mechanical performance, all of which are critical for PRO operation.

Keywords: cellulose acetate, biomass, degree of substitution, acetyl content, pressure retarded osmosis (PRO)

Fabrication and performance evaluation of CA–PEG–PVC/GO nanocomposite membranes prepared by phase inversion for desalination in drinking water treatment

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Abstract

The global clean water shortage has driven the development of more efficient desalination technology, particularly reverse osmosis (RO) membrane-based. However, conventional CA membranes still exhibit low permeability, fouling vulnerability, and weak mechanical properties. This study aims at the preparation and the performance characterization of CA–PEG–PVC composite membranes with incorporated graphene oxide (GO) nanoparticles through the phase inversion method. The major materials utilized were cellulose acetate (CA), polyvinyl chloride (PVC), polyethylene glycol (PEG) as a pore former, N-methyl-2-pyrrolidone (NMP) as a solvent, and GO at various concentrations. The membrane was characterized through salt rejection and permeate flux measurements in cross-flow mode using feed water of 241 ppm total dissolved solids (TDS). The results show that membranes without PVC registered 2.07% salt rejection with high flux of 825.33 $L \cdot m^{-2} \cdot h^{-1}$, while the addition of 0.01 g PVC increased salt rejection to 4.15% but decreased flux to 300.12 $L \cdot m^{-2} \cdot h^{-1}$. The results draw the conclusion that PVC adds structural stability and ion rejection but decreases water permeability as it is hydrophobic. Overall, this study demonstrates the compromise between permeability and selectivity in CA–PEG–PVC/GO membranes and suggests that it is necessary to further balance the composition of PVC and GO in order to achieve more balanced RO membrane performance in drinking water treatment application.

Keywords: Cellulose acetate (CA), Phase inversion, Reverse osmosis (RO)

Influence of pH and Pre-treatment on Biogas Production in Anaerobic Digestion: A Review

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Abstract

Anaerobic Digestion (AD) offers a potential solution to global challenges in renewable energy production and waste management. It is also a promising low-carbon emission technology. However, its efficiency can be limited by various technical factors. This review article addresses these limitations by investigating the main effects of pH and pre-treatment on biogas production and COD removal efficiency. The research methodology involves a comprehensive review of the literature on the effects of different pH ranges and various pre-treatment methods, including thermal, chemical, and enzymatic techniques. The findings revealed that a neutral to slightly alkaline pH range (6.8–8.3) provides optimal conditions because it can balance acidogenesis and methanogenesis, leading to high biogas yield and a COD removal rate of up to 86.34%. In addition, pre-treatment can significantly increase the efficiency of the AD process. For example, thermal alkaline pre-treatment of algal biomass increased methane yield by 229%, and shock wave pre-treatment of algae increased dissolved COD by approximately 70% compared to the control group. This study contributes by presenting a comprehensive overview of the optimal conditions and effective strategies to enhance AD performance, offering insights that can serve as a foundation for designing more efficient and stable AD systems for sustainable energy production and waste management.

Keywords: Anaerobic Digestion, Biogas, COD, pH, Pre-Treatment

Photocatalytic Effect of Zinc Oxide on The Degradation of Crystal Violet Dye Waste Water under Visible Light

| Renung Reningtyas[1], Retno Ringgani[2], Mahreni[2], Raden Rara Dina Asrifah[2], Hafiz Muhammad Ghulam Akbar[2], Alifia Faza Adzkia Praptomo[2]

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Abstract

The textile industry is a major contributor to water pollution. Crystal Violet (CV) are widely used cationic dyes, but it is toxic, difficult to degrade, and potentially carcinogenic, posing a threat to aquatic ecosystems and human health. Zinc oxide (ZnO) is a semiconductor with a wide band gap, high chemical stability, and the ability to generate oxidative radicals capable of degrading complex organic compounds. This study aimed to examine the photocatalytic effect of ZnO on the photodegradation of Crystal Violet in a visible light-based reactor system. ZnO were synthesized using the sol-gel precipitation method, characterized using BET and a Particle Size Analyzer (PSA), and then tested for their photocatalytic activity. The test results showed that ZnO synthesized by a simple process has the potential to be an effective photocatalyst for sustainable textile wastewater treatment. Degradation CV using ZnO under 6 hours visible light conditions could reach up to 70%.

Keywords: Zinc oxide, Photocatalytic, Crystal Violet, Textile Waste Water

Overcoming Dead Time in Thermal Processes: A Comparative Evaluation of PID-SP and PID-IMC Control Strategies | Yulius Deddy Hermawan[1], Yusmardhany Yusuf[1], Joko Pamungkas[1], Brian Rizky Fardhiansyah[1], Alifya Dinda Aditya[1], Hanum Mizati[1], Hasabneya Primaputra Artahsasta[1]

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Abstract

Dead time is a critical factor that often causes instability in process systems, so appropriate control strategies are needed to address it. This study focuses on the outlet temperature control of a stirred-tank heater that exhibits dead time. A 10 L laboratory-scale tank equipped with an electric heater was constructed, and the long outlet pipeline introduces a measurable delay in the temperature response. The outlet temperature is maintained by adjusting the electrical heating input, while PID parameters are tuned using the Process Reaction Curve (PRC) method. Two control strategies are examined: PID with Smith Predictor (PID-SP) and PID with Internal Model Control (PID-IMC). System models were implemented and tested using XCOS/Scilab. Closed-loop simulation results indicate that PID-IMC performs better than PID-SP, as indicated by a lower integral absolute error (IAE). These results provide evidence of the practical advantages of PID-IMC in compensating dead time in thermal process systems and offer useful guidance for improving process control design in industrial applications.

Keywords: dead time, IMC, PID, Smith-predictor, thermal system

Sustainable Utilization of K-Humate Coal Residue into Bead Adsorbents for Cu(II) Removal

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Abstract

The increasing discharge of heavy metals, particularly copper (Cu), into soil and water systems poses significant environmental and health risks due to their toxicity, persistence, and potential for bioaccumulation. In this study, coal residue derived as a solid byproduct from potassium humate (K-humate) production was sustainably converted into composite chitosan beads and evaluated as an adsorbent for Cu(II) removal from aqueous solutions. The coal residue was pretreated with HCl, sieved, and incorporated into chitosan gel, followed by crosslinking with sodium tripolyphosphate to form stable beads. Batch adsorption experiments were performed to investigate the effects of pH (4–7), adsorbent dosage (0.1–0.4 g in 25 mL solution), and temperature (30–50 °C) on Cu(II) removal efficiency at an initial concentration of 67.46 mg L^{-1}. The results demonstrated consistently high removal efficiencies (>92%) under all tested conditions, with optimal performance observed at slightly acidic pH (4), higher adsorbent dosages, and elevated temperatures, indicating an endothermic adsorption process. The coal–chitosan composite beads showed stable performance across varying conditions, highlighting the synergistic role of chitosan as a matrix for residue immobilization and improved reusability. This work not only presents a low-cost and sustainable route for valorizing coal residue but also introduces an effective adsorbent for Cu(II) remediation in wastewater treatment applications.

Keywords: Chitosan beads, Coal residue valorization, Copper removal (Cu(II)), Sustainable wastewater treatment

Anaerobic Digestion Versus Composting: A Comprehensive Review on Waste Stabilization, Resource Recovery, and Sustainability

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Abstract

The rapid growth of organic waste from agricultural, industrial, and municipal activities has raised serious environmental concerns. Anaerobic digestion (AD) and composting (COM) are two widely applied biological technologies developed to stabilize organic waste and recover valuable resources. This review compares their performance, products, environmental impacts, and operational challenges, and discusses the potential benefits of integrating both processes. AD degrades organic matter under anaerobic conditions into biogas and digestate which can be used as an organic fertilizer due to its high nutrient content. COM is an aerobic self heating process that transforms organic residues into stable compost suitable for soil improvement. Comparative data show that AD achieves higher degradation rates in shorter residence times, while COM produces a stable product with lower investment and operational complexity. Life cycle assessments indicate that COM has higher energy related environmental burdens, whereas AD offers better energy recovery but requires higher capital costs and digestate post treatment. The integration of AD and COM enables the complementary use of both processes, where AD contributes to methane generation and nutrient retention, while COM enhances pathogen inactivation and moisture reduction, thereby improving the overall efficiency and sustainability of organic waste management.

Keywords: fertilizer, nutrient, green house gas, digestate, compost

Track: Economic Development

Supported by :

Green Business: A Path to Competitiveness and Sustainability Comparative Study on the Implementation of Green Business Strategy in Indonesia and Malaysia

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Abstract

Research Background: The urgency of climate change has driven businesses worldwide to adopt sustainable practices aimed at minimizing environmental impact and ensuring long-term competitiveness. The Green Business Strategy has emerged as an effective framework by integrating environmental considerations into corporate policies and operations.. Purpose: This study sets out three main objectives: first, to examine the theoretical foundations of the Green Business Strategy and related concepts such as environmental orientation, environmental performance, and managerial awareness; second, to evaluate the extent of government policy support and SME adoption in Indonesia and Malaysia; and third, to propose strategic recommendations for enhancing the competitiveness of SMEs through sustainable business practices. Methodology: This study presents a comparative analysis of Green Business Strategy implementation among SMEs in Indonesia and Malaysia. By examining policy frameworks, institutional support, environmental orientation, environmental performance, and managerial awareness, the study identifies the opportunities and barriers faced by SMEs. A comparative literature-based approach is employed, utilizing sources from 2019 to 2025. Findings: The findings indicate that Indonesia has a very large SME sector and is gradually strengthening its sustainability regulations—such as the Carbon Economic Value regulation and the IDX carbon trading platform. However, implementation remains fragmented due to weak institutional coordination and financial constraints. In contrast, Malaysia benefits from more established institutional support, including the National Green Economy Policy and the Green Technology Financing Scheme, which provide SMEs with clearer pathways for adopting green business practices. The study reveals that Green Business Strategy adoption enhances operational efficiency, stakeholder trust, and competitive advantage. Policy recommendations include the need for stronger financial instruments and more streamlined regulatory processes, while managerial implications highlight the importance of leadership and environmental awareness. Ultimately, adopting green business strategies is not only a social responsibility but also a strategic imperative for SMEs to remain competitive in an increasingly sustainability-driven global market

Keywords: Green Business Strategy, SMEs, Environmental Orientation, Environmental Performance, Managerial Awareness

Track: Agricultural Science

Supported by :

Comparison of Intensive and Non-Intensive Cocoa Cultivation on Cocoa Pod Diseases in Nglanggeran Village

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Abstract

The cacao tree (Theobroma Cacao L.) is a perennial crop grown in Indonesia and is one of the country's main industrial commodities. The demand for high-quality of cacao beans is not matched by the productivity of cacao plantations, with declines in productivity and quality caused by diseases. Diseases affecting cacao pods pre-harvest include black pods disease, caused by the pathogen Phytophthora palmivora, and anthracnose caused by Colletotrichum gloeosporioides. This study aims to identify disease symptoms that arise in cocoa pods in Nglanggeran Village, evaluate the level of damage caused by the diseases, and determine the impact of cultivation practices on disease severity. The study was conducted in the village of Nglanggeran Patuk. This study used 20 samples trees using a purposive random sampling method. The incidence and severity of anthracnose tended to be higher than those of black pod under both cultivation systems. The results show that implementing Good Agricultural Practices (GAP) is essential to reduce yield losses and increase cocoa productivity.

Keywords: Anthracnose disease, black pod diseases, cocoa cultivation,Nglanggeran

Effectiveness of Mixing Natural Attractants for Trapping Fruit Flies in Snake Fruits Plantations

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Abstract

Snake fruit (Salacca zalacca) is an important Indonesian fruit commodity, yet its productivity has been declining due to infestations of fruit flies. This study evaluated the effectiveness of natural attractants, including methyl eugenol–containing fragrant leaf essential oil and fermented fruit juices, either applied singly or in combination, in trapping fruit flies. The experiment was conducted in Girikerto Village, Sleman, from March to May 2024 using a Completely Randomized Design (CRD) with eight treatments: fragrant leaf essential oil (2 mL), fermented snake fruit juice (2 mL), fermented pineapple juice (2 mL), fermented mango juice (2 mL), mixtures of 1 mL essential oil with 1 mL of each fermented fruit juice, and control. Data were analyzed using ANOVA followed by LSD test at 5%. Results showed that the combination of fragrant leaf essential oil and fermented mango juice (1 mL + 1 mL) was effective in trapping Bactrocera spp., and its performance was not significantly different from 2 mL essential oil. Three species of fruit flies were identified: Bactrocera papayae, B. carambolae, and B. umbrosa. These findings highlight the potential of combining natural attractants for sustainable fruit fly management in snake fruit plantations.

Keywords: Bactrocera spp., attractants, methyl eugenol, fermented fruit, snake fruits

Enhancing Regenerative Agriculture Systems in Karst Landscape Based on Biophysical Properties and Farmers' Practices

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Abstract

Conventional farming practices can lead to soil degradation and a decline in productivity. In the era of climate change scenario, a regenerative agriculture (RA) is considered as one of solutions to these issues. This research was intended to investigate potential of RA implementation in areas in Karst in Pacarejo, Semanu, Gunungkidul, Yogyakarta based on the existing land characteristrics and farmers' practices in the area. Some investigations were conducted by characterisation and observation of biophysical aspects, including soil, vegetation, and water resource as well as social-economical conditions. Some soil physical and chemical properties, vegetative growth of teak tress, and litter accumulation at three different locations in variably slopping lands in the Teak Plantation Station UPN "Veteran" Yogyakarta were investigated. The social and economic conditions of the local farmers were described based on direct discussions and questioners handed to 10 farmers. Collected data showed most soils were generally thin with similar physical and chemically properties and low fertililty, especially N, P, and K nutrients, relatively low growth of the teak trees. However the living teak plantation and terraces supports soil conservation. Farming activities mostly are occuring during rainy season and with limited number crops to grow. Currently farmers have been well aware of the need balance of both organic and inorganic fertilizers. In conclusions, these areas can be potentially used for developing regenerative agriculture systems.

Keywords: renegerative agrciculture, karst ecosystems, thin soils, low nutrient soil, annual crops.

Evaluation of Quantitative Floral Traits in Eleven Melon (Cucumis melo L.) Genotypes

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Abstract

Floral trait evaluations in melon are still limited, despite their importance in breeding programs. This study aimed to assess the performance of melon genotypes and to determine their clustering based on floral traits. The experiment was conducted from June to August 2025 in a greenhouse at the Wedomartani Experimental Station, UPN Veteran Yogyakarta, using eleven melon genotypes arranged in a randomized complete block design (RCBD) with three replications. Significant differences were detected for hermaphrodite flower petal length (HFPL) and hermaphrodite flower petal width (HFPW). Genotypes G11 (3.3 cm and 2.3 cm) and G9 (3.2 cm and 2.2 cm) exhibited the highest HFPL and HFPW values, respectively. Based on the traits of HFPL and HFPW, genotypes G9 and G11 were selected as sources of genetic material to be continued in the next planting season. Cluster analysis using Ward's method grouped the genotypes into three major clusters, G1 and G3 formed the first cluster, the second cluster of genotypes G2, G7, G14, G10, G13, and G15, and the third cluster of genotypes G5, G9, and G11. The first group consisted of genotypes derived from the offspring of the Makuwa group. The genotypes in the second group were mostly from the Cantalupensis melon group, while those in the third group belonged to the Inodorus melon group. This indicates that the clustering analysis effectively distinguished the genotypes according to their group. The relationships among the eleven genotypes based on floral traits provide valuable insights for melon breeding and the development of improved cultivars.

Keywords: cluster analysis, diversity floral traits, melon

Robustness of soil phosphorus availability, nutrient dynamics, and shallot vegetative growth through arbuscular mycorrhizal fungi (AMF) inoculation

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Abstract

Phosphorus (P) is an essential plant nutrient and one of the most limiting in natural habitats as well as in agricultural production world-wide. Here, we present the experimental between shallot crops, AMF inoculated and without inoculated m to examine the impacts of the AMF symbiosis on on soil phosphorus availability, nutrients dynamics, growth and biomass. We used Randomized Completed Block Design (RCBD) with 5 (Five) replicates. The findings shows that AMF enhances Phosphorus availability, total Potassium, and C-organic, while not affected on Nitrogen total on soil. The application of mycorrhiza significantly enhanced soil phosphorus availability, increasing from 30.56 ppm in non-inoculated soils to 40.81 ppm with mycorrhizal treatment, equivalent to an improvement of approximately 33%. Furthermore, AMF inoculation has been affected on growth and biomass of shallot in vegetative stage. The results revealed a significant growth-promoting effect of mycorrhizal fungi, with plant height rising by ~23.7% (38.60 to 47.70 cm) and biomass nearly doubling, showing an increase of ~75.2% (18.15 g to 31.78 g). Therefore, the utilization of AMF in Shallot cultivation is important on nutrient dynamics and vegetative growth.

Keywords: Phosphorus availability, nutrient dynamics, arbuscular mychorrizal, Shallot growth

Coal-Based Humic Acid Fertilizer Effects on Soil Properties and Mustard Growth

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Abstract

Humic acid is an essential organic substance that improves soil quality and enhances plant growth. This study investigates the novel application of low-rank coal waste as a source of humic acid for agricultural purposes. Humic acid was extracted from coal and applied as a soil amendment to two contrasting soil types under greenhouse conditions. The application of coal-derived humic acid significantly improved soil pH, electrical conductivity, and organic carbon content, leading to enhanced mustard crop performance. Higher concentrations of humic acid promoted stronger plant growth and increased leaf greenness. The results highlight the potential of converting low-rank coal waste into humic-based fertilizers as an effective strategy for improving soil fertility and supporting sustainable agricultural practices

Keywords: humic acid, ameliorant, fertilizer, low-rank coal, mustard

Inventory of Cacao Diseases in Kulon Progo Regency | Aurelia Danadyaksa[1], Azizah Ridha Ulilalbab[1], Mofit Eko Poerwanto[1], Danar Wicaksono[1], Miftahul Ajri[1]

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Abstract

Cocoa (Theobroma cacao L.) is a strategic plantation commodity that significantly contributes to Indonesia's national economy. However, national cocoa productivity has declined in recent years, largely due to inadequate management of plant diseases. This study aims to profile and characterize the pathogenic microorganisms associated with disease symptoms and determine the effect of cultivation methods on the incidence of disease in cocoa plants in Kulon Progo Regency, Special Region of Yogyakarta. The research employed a field survey method with purposive sampling and a diagonal pattern to collect symptomatic plant samples. The result is the disease that appear in cacao plantations in Kulon Progo include vascular strike dieback, black pod rot, and cocoa swollen shoot virus (CSSV) with a tendency for lower damage intensity on intensively managed plantations.

Keywords: cacao, Oncobasidium theobromae, fungi, Kulon Progo, plant disease

Application of Organic Fertilizer and Coconut Water to Improve the Growth of Butterfly Tree (Bahunea purpurea L.) in Karst Land

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Abstract

Butterfly tree (Bauhinia purpurea L.) is known to possess high adaptability and can be cultivated in karst regions of Indonesia. In this context, organic fertilization combined with coconut water as a natural growth hormone is applied to enhance the plant growth. Therefore, this research aims to determine the interaction between various organic fertilizers and coconut water in increasing the growth of butterfly tree in the experimental garden of the Faculty of Agriculture, UPN Veteran Yogyakarta. Completely Randomized Design (CRD) was used with a Factorial method between August and September 2025. The first factor was the type of organic fertilizer, consisting of cow and goat manure, as well as vermicompost. The second factor was the 25%, 50%, and 75% concentration of coconut water. The results showed that there was no interaction between organic fertilizers and coconut water. Organic goat manure and vermicompost more produced percentage of live, plant height and number of leaves than cow manure. Meanwhile, vermicompost showed the longest root length and the largest number of roots compared to cow and goat manure. The 50% coconut water concentration produced the largest percentage of live and number of roots.

Keywords: organic fertilizer, coconut water, butterfly tree, karst land

Resistance of Eight Premium Melon Varieties to Viral Diseases in a Commercial Greenhouse in Central Kalimantan

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Abstract

Melon (Cucumis melo L.) is one of the most important horticultural commodities in Indonesia, especially premium varieties with high market value. However, viral diseases such as Cucumber mosaic virus (CMV), Zucchini yellow mosaic virus (ZYMV), Papaya ringspot virus (PRSV), and Watermelon mosaic virus (WMV) remain a major constraint, causing mosaic, chlorosis, deformation, and yield reduction. This study aimed to evaluate the resistance of eight premium melon varieties against viral diseases under commercial greenhouse conditions in Palangka Raya, Central Kalimantan. The experiment was conducted in a hydroponic production system under natural infection pressure without artificial inoculation. Disease incidence was assessed visually at vegetative and reproductive stages, and disease progression was quantified using the Area Under the Disease Progress Curve (AUDPC). Results showed clear variation among varieties in their response to viral infection. Inthanon exhibited the highest disease incidence (up to 45%) and the highest AUDPC value (12.36), indicating high susceptibility. Kirin and Sweet D25 also displayed relatively high incidence and AUDPC values (7.6–7.7). Conversely, Alisha and Meldo UPNVY No. 1 consistently showed the lowest incidence (<15% and <5%, respectively) and the lowest AUDPC values (0.83 and 3.24), demonstrating strong resistance. The remaining varieties (Apollo, Sweet D25, Meldo UPNVY No. 2, and Sweet Hami) showed intermediate resistance. These findings highlight the importance of varietal selection in integrated management of viral diseases in melon. Resistant varieties such as Alisha and Meldo UPNVY No. 1 may serve as promising candidates for commercial production and future breeding programs to reduce yield losses and minimize reliance on chemical or vector control strategies

Keywords: melon, viral disease, resistance, AUDPC, greenhouse

Track: Computer Science

Supported by :

Hybrid Sentiment Intelligence: A CNN-Based Analysis of Visitor Experience at the "History of Java" Museum in Yogyakarta

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Abstract

Visitor feedback is a critical yet underutilized resource for optimizing cultural heritage experiences. This study introduces a novel hybrid sentiment analysis framework that integrates digital reviews (Google, TripAdvisor, Traveloka) with digitized physical guestbook entries — capturing both reactive online sentiment and reflective on-site feedback. Leveraging a Convolutional Neural Network (CNN) with custom-trained Word2Vec embeddings, our model classifies visitor sentiment into Positive, Neutral, and Negative categories with 94.7% accuracy and 0.93 F1-score — significantly outperforming traditional models (SVM, Naïve Bayes). Analysis reveals a striking sentiment divergence: physical guestbooks exhibit 71.2% positivity, compared to 58.9% on Google Reviews, highlighting a systematic negativity bias in digital platforms. We further prototype a real-time dashboard for museum staff, enabling data-driven interventions based on sentiment drift and keyword trends. This work pioneers the fusion of analog and digital visitor voices in Indonesian cultural analytics, offering museums a scalable, explainable, and context-aware tool for experience optimization.

Keywords: sentiment analysis, cultural heritage, museum experience, Word2Vec, Convolutional Neural Network

Dynamic Hyperparameter Tuning in Deep Co-Training for Semi-Supervised Sentiment Analysis on Social Media

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Abstract

Abstract The exponential growth of social media has generated vast volumes of emotionally expressive text, making sentiment analysis crucial for public opinion monitoring, marketing, and crisis detection. However, supervised deep learning models are severely constrained by the scarcity of labeled data. Semi-supervised learning via Co-Training offers a promising solution by leveraging unlabeled data through collaborative learning between multiple classifiers. While recent studies integrate deep architectures (CNN, LSTM) into Co-Training, most rely on static hyperparameters—leading to error propagation, suboptimal convergence, and performance degradation under noisy, real-world data. This paper introduces Co-TuneDL, a novel framework that embeds iterative, joint hyperparameter tuning directly into the Co-Training loop. We dynamically optimize three critical parameters—(1) confidence threshold (τ) for pseudo-label selection, (2) learning rate (η) for model adaptation, and (3) batch size (b) for training stability—using Bayesian Optimization (BO) based on validation set performance after each iteration. Unlike prior approaches that tune hyperparameters once or independently, our method treats them as interdependent variables that evolve with the learning process. Evaluated on three benchmark datasets—including Indonesian Twitter, SemEval-2017, and a custom political sentiment corpus—Co-TuneDL achieves an average F1-score of 92.4%, outperforming static Co-Training baselines (87.1%) and conventional supervised CNN-LSTM models (89.3%). Statistical tests confirm significance ($p < 0.01$). Crucially, dynamic tuning reduces error propagation by 41%, accelerates convergence by 28%, and enables robust learning even with <2k labeled samples. This work establishes that hyperparameter tuning is not a preprocessing step but a core mechanism for enabling scalable, adaptive semi-supervised learning in Big Data environments.

Keywords: Sentiment Analysis, Semi-Supervised Learning, Co-Training, Deep Learning, Hyperparameter Tuning

Hybrid-Quantum CNN for Enhanced Facial Emotion Recognition: A Comparative Study with VGG16 on the RAF-DB Dataset

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Abstract

Facial expression recognition (FER) underpins applications in affective computing but remains challenged by computational cost and the ambiguity of compound emotions. We introduce a Hybrid-Quantum Convolutional Neural Network (HQ-CNN) that integrates quantum principles (superposition, entanglement) into a classical CNN pipeline to enhance representational power and efficiency. Evaluated on the Real-World Affective Faces Database (RAF-DB), the HQ-CNN improves accuracy by 4.60% on basic emotions and 4.47% on compound emotions, while reducing computation time by up to 22.11% and 6.20%, respectively, relative to a VGG16 baseline. Confusion-matrix analysis shows fewer misclassifications on challenging compound categories, indicating better separation of overlapping affective cues. These results support the use of quantum-enhanced architectures as a viable path toward robust, real-time FER systems.

Keywords: facial expression recognition, quantum machine learning, hybrid-quantum CNN, VGG16, compound emotions

Comparison of Semi-Supervised Learning Performance in Indonesian Sentiment Analysis: An Empirical Study between Statistical Machine Learning and Deep Learning Approaches

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Abstract

The limited availability of labeled data is a major challenge in developing sentiment analysis models, especially for Indonesian, which still has minimal annotated resources. Semi-supervised learning (SSL) offers a solution by utilizing large amounts of unlabeled data. This study aims to compare the performance of two main paradigms in SSL—Statistical Machine Learning (SML) and Deep Learning (DL)—in the context of Indonesian text sentiment classification. Four SML models (KNN, Naïve Bayes, Random Forest, SVM) with TF-IDF, Word2Vec, and FastText feature representations were compared with a FastText embedding-based Bi-LSTM architecture that was fine-tuned. Experiments were conducted on two datasets: product reviews (14,000 instances) and social media (22,000 instances), each with only 10% of the initial labeled data. The self-training approach was applied with a confidence threshold of 0.8 and a maximum of 3 iterations. The results show that DL consistently outperforms in accuracy (achieving 89.7% vs. 84.2% on large datasets), F1-score (89.4% vs. 83.6%), and efficiency in utilizing unlabeled data (95.6% accepted pseudo-labels vs. 90.2%). However, this advantage comes at the cost of 4x higher computational costs and lower interpretability. SML remains relevant for scenarios with limited resources or when model transparency is a priority. This study recommends using DL if the infrastructure is adequate, and SML if interpretability and computational efficiency are prioritized. These findings provide empirical guidance for practitioners and academics in choosing the optimal SSL approach for Indonesian language sentiment analysis.

Keywords: semi-supervised learning, sentiment analysis, statistical machine learning, Bi-LSTM, pseudo-labeling

Automated Penetration Testing Using the Common 1000 Password Dataset and Deep Learning method on Wireless Networks

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Abstract

Wireless network security is an important aspect of protecting organizational information systems; therefore, penetration testing is necessary to evaluate potential vulnerabilities in network configurations and password policies. This study focuses on conducting penetration testing using Kali Linux with the Aircrack-ng toolset to assess the strength of WPA/WPA2 passwords. One of the main challenges in the password cracking process is the limitation of static wordlists such as common_password.csv, which often fail to capture diverse and contextual password patterns. To address this issue, this research proposes a generative deep learning-based approach utilizing a Long Short-Term Memory (LSTM) architecture. The LSTM model is trained using the common_password.csv dataset to learn character patterns and password structures. The training process includes character tokenization, char-to-index mapping, sequence formation, and training the LSTM network to predict the next character. Once the model is trained, a probabilistic sampling mechanism is applied to generate new password variations that resemble the original dataset distribution while being more diverse. The dynamically generated wordlist is then integrated into penetration testing scenarios using Aircrack-ng to increase the success rate of dictionary-based attacks. The experimental results show that penetration testing using Aircrack-ng with a dataset generated through the LSTM method was able to accurately identify the SSID password, as demonstrated by a testing time ranging between 9-12 minutes.

Keywords: LSTM, Kali Linux, Aircrack-ng, Penetration Testing

GIS-Based Spatial ID3 Analysis for Cocoa Land Suitability | Andi Nurkholis[1], Andrey Ferriyan[1], Ririn Wuri Rahayu[1], Alifah Chairul Munawar[1]

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Abstract

The decline in suitable cocoa land in Indonesia has led to reduced productivity and increased reliance on imports. This study addresses the gap for cocoa land suitability analysis by utilizing the Spatial ID3 algorithm, a method not previously applied in this region, to assess cocoa cultivation potential. A key contribution of this paper is the development of an interactive, web-based geographic information system tool that integrates spatial ID3 classification with mapping capabilities, providing decision-makers with a valuable tool for sustainable cocoa production and land management. The model used eight predictor variables, including soil, topography, and environmental factors, to generate 53 rules, which were then converted into interactive graphics. The tool consists of three main elements: an interactive Leaflet map for cocoa land suitability, detailed suitability classifications at the village level, and recommendations for five cocoa genotypes best suited to local conditions. Results indicate that the largest area (231,018 ha) is classified as S3 (marginally suitable), followed by S2 (moderately suitable) with 16,443 ha. The not suitable (N) land covers 49,253 ha, and unclassified land accounts for 1,363 ha. No S1 (highly suitable) land was found, suggesting that ideal conditions may be absent in the region. This system equips decision-makers with evidence-based tools to prioritize sustainable cocoa production strategies, optimize land management in S2 zones, and implement adaptive interventions in S3 areas. Ultimately, this methodology supports sustainable agricultural development and aids Indonesia in its goal of cocoa self-sufficiency.

Keywords: cocoa, geographic information system, land suitability, spatial ID3

You Only Look Once Version 11 (YOLOv11) Based Object Detection for 3D City Modeling: A Study in the Jatirejo Area

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Abstract

Digital three-dimensional (3D) modeling has become an important requirement in modern spatial mapping and a crucial requirement in modern spatial mapping and visualization because it can provide a more realistic and detailed representation of objects or areas. This study uses image segmentation techniques using YOLO v11, which automatically recognizes and separates objects, thereby increasing the accuracy of image extraction and accelerating the modeling process. With the help of software and the web, namely Roboflow, Google Colab, and QGIS. The results of this study show that the integration of image extraction algorithms, deep learning, and image segmentation based on YOLO v11 produces a more precise, efficient, and realistic 3D model. The Confusion Matrix shows that the segmentation results are perfectly detected at more than 85.64%, with the remaining segmentation not being perfectly detected at 9.23% and 5.13% being the undetected part. With the calculation of the precision value of 95.94% indicates that the model rarely makes mistakes in predicting objects. The resulting Recall value is 87.58% and the F1 score is 91.57%. Thus, the use of AI-based technology and computer vision offers an innovative solution in accelerating the development of effective, accurate and cost-effective digital 3D city models that can be used as local government data.

Keywords: Segmentasi, Yolov11, Kota 3D, Ekstraksi.

Classification of Merapi Volcano Images Based on Hsv Color Feature Extraction and Local Binary Pattern Texture Feature Extraction Using the K-Nearest Neighbors Method

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Abstract

The BPPTKG (Center for Volcanology and Geological Hazard Mitigation) routinely monitors Merapi Volcano's activity through visual imagery captured with DSLR lenses at several observation posts. However, not all recorded imagery can be used for analysis due to frequent cloud or fog cover. This not only makes it difficult for experts to accurately monitor Merapi's condition but also reduces the efficiency of data storage capacity. To examine the application of HSV color feature extraction, LBP texture feature extraction, and the K-Nearest Neighbor method for classifying Merapi Volcano images based on appearance. The dataset used consists of Merapi Volcano images captured from the Tunggularum observation post between October 1st and 10th, 2023, categorized into six classes based on the volcano's appearance. Preprocessing steps include cropping, masking, and image sharpening. Classification was performed using the K-Nearest Neighbor method to obtain the classification results of Mount Merapi images. Based our result the classification method using HSV and LBP using the K-Nearest Neighbor method was successfully performed. The optimal value of k was 1, achieving an accuracy of 95%, while the worst value of k was 9, with an accuracy of 87%.

Keywords: Image Processing; K-Nearest Neighbor; HSV; LBP; Mount Merapi

Track: Business Administration

Supported by :

Unravelling the Entrepreneurial Ecosystem: Actors and Factors Shaping Agricultural MSMEs in Indonesia

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Abstract

Agricultural micro, small, and medium enterprises (MSMEs) play a vital role in Indonesia's rural economy and food security, yet they face persistent structural challenges, including limited access to finance, weak infrastructure, and fragmented policy support. These constraints hinder their growth and resilience, particularly in rural areas. This study aims to examine the key actors and contextual factors shaping the entrepreneurial ecosystem (EE) of agricultural MSMEs in Indonesia, in order to identify strategic interventions that support sustainable and inclusive development. Using a qualitative approach, this research synthesizes data from peer-reviewed literature, official reports, and credible digital sources. The analysis is guided by the entrepreneurial ecosystem framework and network theory, applying thematic analysis to uncover actor-factor dynamics. The findings reveal a vibrant but uneven ecosystem, where strong local networks and community-market linkages are offset by low digital adoption, weak government engagement, and insufficient financial access. Infrastructure gaps and limited entrepreneurial literacy further constrain innovation and competitiveness. The study contributes conceptually by contextualizing EE frameworks within Indonesian agriculture and integrating sustainability and inclusivity dimensions. Practically, it proposes policy reform, targeted digital inclusion, and rural infrastructure enhancement to empower women, youth, and smallholder entrepreneurs.

Keywords: entrepreneurial ecosystem, agriculture, MSME, rural development

Navigating Technostressor: A Systematic Literature Review of Millennial Entrepreneurs

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Abstract

This study aims to identify, analyse, and synthesise the phenomenon of technostress among millennial entrepreneurs, focusing on the psychological, social, and individual performance impacts in the context of digital entrepreneurship. In an era of ever-evolving technology, technostress has become a major challenge for millennial entrepreneurs who are highly dependent on technology in running their businesses. This study uses the Systematic Literature Review (SLR) methodology by collecting Scopus-indexed articles published from 2023 to 2025 that are relevant to the topic of technostress among the millennial population. A total of 46 selected scopus articles were analysed using a thematic analysis approach to identify the causal factors, psychological impacts, and coping strategies used by millennial entrepreneurs. The results showed that technostress among millennial entrepreneurs is influenced by factors such as always-on technology, information overload, and the complexity of rapidly developing technology. The main psychological impacts that arise are anxiety, stress, digital fatigue, and decreased sleep quality, which affect well-being and business performance. However, coping strategies such as mindfulness, setting technology boundaries, and social support have been proven effective in reducing the impact of technostress. The novelty of this research lies in the development of propositions linking technostress to the dynamics of millennial entrepreneurship, as well as the importance of digital readiness and digital performance measurement in mitigating its negative impacts. The practical implications of this research suggest that millennial entrepreneurs implement holistic and personalised coping strategies and obtain relevant social support to maintain their well-being and business sustainability. This research also contributes theoretically by expanding the understanding of the relationship between technostress and digital entrepreneurship, as well as opening up directions for more comprehensive and contextual future research.

Keywords: Technostressor, Millennials, Coping strategies, SLR

Leveraging Digital Marketing for Sustainable Fundraising in Zakat Institutions: A Case of Badan Amil Zakat Nasional (BAZNAS) Yogyakarta City

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Abstract

Abstract Zakat institutions play a pivotal role in fostering socio-economic equity, yet their fundraising potential remains underutilized in Indonesia, where only a fraction of the estimated zakat potential is collected. Previous studies highlight the promise of digital transformation, but limited research explores its systematic application in enhancing sustainable fundraising. This study examines how the National Zakat Agency (BAZNAS) Yogyakarta leverages digital marketing strategies to strengthen zakat collection and management. The research adopts a qualitative case study approach, employing literature review, document analysis, and semi-structured interviews with five key stakeholders: the Chairman of BAZNAS Yogyakarta, the Deputy Chairman IV, the Head of the IT Team, the Person-in-Charge of Division 1, and the Person-in-Charge of Division 2. Findings reveal that BAZNAS Yogyakarta strategically utilizes social media campaigns, particularly Instagram, along with website optimization and fintech integration to broaden outreach and simplify zakat transactions. Transparency and accountability are reinforced through digital reporting systems such as the SIMBA application, which has significantly improved public trust and donor retention. Furthermore, the application of Islamic marketing principles and zakat literacy programs enhances engagement, particularly among millennials, who represent a critical donor segment. Despite notable progress, challenges persist, including digital literacy gaps and cybersecurity risks that require continuous innovation and investment. This study contributes to the literature on Islamic philanthropy by demonstrating the role of digital marketing in bridging the gap between zakat potential and realization, offering practical insights for zakat institutions seeking sustainable fundraising models.

Keywords: Digital marketing, sustainable fundraising, zakat institutions, BAZNAS

Understanding Pain Points in Halal Chicken Supply Chains: The Type D Slaughterhouse Experience

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Abstract

This study investigates the pain points of Chicken Halal Supply Chain Management (CHSCM) in Indonesia, with a focus on the experiences of a certified Type D poultry slaughterhouse (RPA) in Yogyakarta. Using a qualitative approach, data were collected through in-depth interviews with a halal academic expert and the RPA operator, and analyzed thematically against the framework of halal supply chain principles. The findings reveal a persistent gap between regulatory ideals and operational realities. Critical issues include limited competence of slaughterers, high pre-slaughter mortality during transport, lack of cold chain infrastructure, and unhygienic post-slaughter handling. Certification is perceived by operators as costly and administratively burdensome, while consumer demand remains divided between modern segments that require certification and traditional markets that prioritize affordability and freshness. These pain points not only compromise halal assurance but also pose risks to public health and economic sustainability. The study concludes that targeted interventions—such as structured training, simplified certification procedures, collaborative cold chain solutions, and the adoption of traceability mechanisms—are essential to strengthen halal poultry supply chains in Indonesia.

Keywords: Halal Supply Chain, Chicken Poultry, Certification; Sustainability, Type D Slaughterhouse

From Culture to Commitment: Unveiling the Employee Connection in Government to Private Organization

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Abstract

Organizational culture and employee commitment are widely recognized as central to workforce performance and retention, yet comparative evidence across government and private organizations remains limited. This study addresses this gap by examining how cultural dimensions and commitment types vary between these two sectors. The purpose of the research is to provide a comparative understanding of organizational culture and commitment, highlighting similarities and differences that may inform sector-specific strategies for human resource management and policymaking A descriptive-comparative design was employed, utilizing Wallach's Organizational Culture Index (OCI) and Allen and Meyer's Three-Component Model (TCM) Employee Commitment Survey. Data were gathered from 228 respondents across four organizations in Pulilan, Bulacan, selected through stratified random sampling based on a total population of 557 employees. Reliability was tested using Cronbach's alpha, with all values above 0.70. Data processing involved cleaning incomplete responses, re-encoding negative items, and applying statistical analyses using SPSS v26 and Microsoft Excel. Descriptive statistics (frequency, mean, standard deviation) were used to summarize employee profiles and responses, while Welch's t-test was employed to determine significant differences between government and private organizations, accounting for unequal sample sizes and variances. The results revealed no significant difference in organizational culture types—innovative, bureaucratic, and supportive—across sectors. Similarly, affective commitment showed no significant variance. However, government and private employees differed significantly in normative and continuance commitment, indicating varying levels of obligation to remain and awareness of exit costs. These findings suggest that while culture may be consistent across sectors, commitment dynamics differ, providing insights for leaders and policymakers in designing tailored employee engagement and retention strategies.

Keywords: Organizational Culture, Organizational Commitment,Government Organizations, Private Organizations

Consumer Trust: Perception and Satisfaction in Selected New Food Ventures

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Abstract

This quantitative study investigates the relationship between consumers' perceptions, satisfaction, and trust in selected new food ventures. In a marketplace characterized by innovation, evolving food technologies, and increasing consumer awareness, establishing trust remains a critical challenge for emerging food businesses. The study aims to determine how perception and satisfaction influence trust toward food ventures operating for less than five years. Using a correlational research design, a validated questionnaire was distributed to 100 respondents through an online survey conducted between January and March 2025, achieving a 92% response rate. Data were analyzed using mean, standard deviation, and Spearman's rank correlation through SPSS software. Findings revealed significant positive correlations between consumer perception, satisfaction, and trust, indicating that higher satisfaction and positive perception levels strengthen trust in emerging food ventures. The study highlights transparency, product quality, and ethical operations as pivotal in sustaining consumer trust and loyalty. These insights provide practical guidance for entrepreneurs and policymakers aiming to strengthen customer relationships and promote sustainable food business practices in the Philippines. Keywords: Consumer trust, perception, satisfaction, food ventures, transparency, loyalty

Keywords: Consumer trust, perception, satisfaction, food ventures, brand loyalty

Track: Communication Studies

Supported by :

Hybrid Professionalism in Platformized Journalism: Personal Branding, Professional Identity, and Career Attractiveness

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Abstract

Platformization is reshaping role performance, boundary work, and newsroom temporalities, influencing how Communication students imagine their professional selves and careers. This study investigates whether acceptance of personal branding undermines or can coexist with professional identity, how branding relates to the appeal of a journalism career, how students perceive digital-era workload, and how fears of AI align with readiness to use it. We ran a cross-sectional multi-campus survey in Yogyakarta with N=150 Communication students across diploma and bachelor tracks, using Likert-type items grouped into three domains and combined into composite indices, then analysed with descriptive statistics, Pearson correlations, and independent-samples t-tests by practice exposure in reporting and internships. The results indicate hybrid professionalism in which acceptance of personal branding does not erode professional identity and is positively associated with career attractiveness. Students anticipate high digital workloads, with pressure higher among those who have completed internships or reporting tasks. They show pragmatic ambivalence toward AI, expressing concern yet remaining moderately willing to use assistive tools under editorial governance. By jointly examining branding, professional identity, career attractiveness, AI perceptions, and practice-related workload in a Global South context, this study extends theoretical debates beyond Euro-American settings and highlights curricular implications, including the incorporation of brand-as-journalist ethics, AI oversight, and authentic workload simulations

Keywords: journalism education, platformization, career attractiveness, communication students

Patterns of Repertoire Conflict in Indonesia (A Study of #Dark Indonesia News on Detik.com)

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Abstract

The beginning of the Prabowo Subianto and Gibran Rakabuming Raka administration was marked by a protest process initiated by the Indonesian Student Executive Board (BEM SI). The student movement raised nine demands to the government, covering economic, social, legal, and political issues. The student movement, entitled "Dark Indonesia," used the repertoire as a tension trigger to gain support from elements of society and was responded to by the power structure. This study examines the coverage of the student movement #DarkIndonesia Detik.com. The theory put forward is the repertoire tension theory proposed by Charles Tilly. The analysis used in this research is Norman Fairclough's critical discourse analysis. There are three elements studied: text, discourse practice, and social practice. The important finding of this research is that Detik.com consistently uses Dark Indonesia in all news titles. The conflicting repertoires are reflected in the news texts. The Dark Indonesia repertoire as a way or strategy used by students to criticize government policies that do not side with the people, thus gaining support from student elements from universities. During the demonstration, the power structure also used the repertoire to position the power structure that is open to criticism. The conclusion of this study is that the Dark Indonesia repertoire remains weak in driving sociopolitical change. This is due to the weak social capital possessed by students and Detik.com within the power structure.

Keywords: tension theory, repertoire, student movement, dark indonesia, social capital

Evaluation of Emotion Detection Using CNN VGG16 and Hybrid QCNN for Enhancing Digital Content Personalization

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Abstract

Emotion detection through facial expression analysis offers a critical mechanism for hyper-personalized digital marketing by enabling real-time content adaptation aligned with consumer affective states. This study evaluates a Hybrid Quantum Convolutional Neural Network (QCNN), which replaces classical convolutional layers with quantum feature extraction circuits utilizing amplitude embedding, RX rotations, and entangling operations.Both VGG16 and QCNN were trained and tested on the RAF-DB dataset, comprising seven basic and nine compound emotion classes. Preprocessing for VGG16 involved resizing to 224×224 RGB images normalized to ImageNet statistics, while QCNN inputs were downscaled to 16×16 grayscale, normalized via min–max and L2 scaling, and encoded into four-qubit states. Models were optimized under factorial hyperparameter scenarios (epochs, learning rates, batch sizes) using the Adam optimizer.Results demonstrate that QCNN achieves a validation accuracy improvement of approximately 4.5 percentage points over VGG16 on both basic and compound emotion subsets, while reducing end-to-end processing time by roughly 15–25 percent. Furthermore, QCNN exhibits narrower training-validation performance gaps, indicating enhanced generalization afforded by quantum feature regularization. Inference latency remains under 0.36 seconds per sample, meeting sub-second requirements for interactive marketing applications.These findings position QCNN as a promising foundation for emotion-aware personalization pipelines, capable of real-time adaptation on edge devices. Future work will focus on field evaluations in commercial settings, demographic fairness assessments, and modular API integration to ensure scalable deployment and measurable return on investment in marketing campaigns.

Keywords: Quantum Machine Learning, SVM, Hybrid Quantum-SVM, Emotion Prediction

Developing a Crisis Communication Model for the Mining Industry

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Abstract

The mining industry is highly crisis-prone due to its dependence on high-risk technologies, environmentally fragile locations, and complex stakeholder relations. While prior studies have examined crisis management and safety regulations, limited research has developed sector-specific crisis communication models that integrate preparedness, stakeholder engagement, and technological adaptation. This study addresses this gap by proposing a comprehensive crisis communication model for the mining sector, using PT Freeport Indonesia as a case study. The research aims to explore the roles and effectiveness of existing crisis communication strategies and to formulate an industry-specific model that enhances organizational preparedness and responsiveness. A qualitative descriptive design was employed, incorporating observations, semi-structured interviews with corporate, governmental, community, NGO, journalistic, and academic stakeholders, as well as document analysis of regulatory, media, and corporate sources. Thematic analysis was used to identify patterns across regulatory conflicts, stakeholder perceptions, and communication practices. Findings reveal that transparency, proactive disclosure, stakeholder dialogue, preparedness training, and integration of digital monitoring systems consistently improved outcomes by reducing conflict escalation and restoring trust. Conversely, delayed, defensive, and one-way communication strategies tended to exacerbate distrust and prolong crises. Building on these insights, the study proposes a hybrid communication model structured in four cyclical stages: anticipation (monitoring and simulations), engagement (multi-stakeholder dialogue), communication (transparent and empathetic narratives supported by credible data), and adaptation (post-crisis learning). The study contributes theoretically by integrating Situational Crisis Communication Theory with Stakeholder Theory, and practically by offering a contextually relevant framework for mining companies to institutionalise preparedness, inclusivity, and responsibility in crisis communication.

Keywords: crisis communication, mining industry, SCCT theory, Stakeholder theory

Reframing Historical Communication for Digital-Native Youth: A Comparative Case Study of Adolescents in Yogyakarta and Global Implications for Civic Identity

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Abstract

This study analyzes historical communication as a strategic medium to rejuvenate civic responsibility and national awareness among adolescents in the digital age, utilizing Indonesia, notably Yogyakarta, as an empirical instance. The project analyzes how specialized approaches to history education and communication might build values of national defense, citizenship, and social responsibility. Employing a qualitative comparative case study design, data were collected through interviews, focus group discussions, participant observation, and document analysis across two educational institutions: a junior high school representing early adolescents and a senior high school representing late adolescents. Findings demonstrate considerable disparities between early and late teens in how they connect with historical narratives and enact civic principles. Younger teenagers responded to emotionally charged, symbolic, and ritualistic tales, whereas older adolescents required critical, contextual, and socially relevant historical communication, often expressed through internet activism and participatory civic activities. From these ideas, the research presents a Differential Model of Historical Communication, comprising four interdependent dimensions: informative, inspirational, interactive, and relevant. This concept presents a globally applicable paradigm for reinventing history communication for digital-native adolescents. Keywords: Historical communication, civic identity, teenagers, digital media, national defense

Keywords: historical communication, civic identity, adolescents, digital media, national defense

The Role of Digital Media in Transforming the Communication Landscape and Its Implications for Communication Education in Indonesia

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Abstract

The rapid evolution of digital media has significantly transformed the communication landscape, posing challenges and opportunities for communication education. This study aims to explore the implications of digital media on traditional communication models and how these changes necessitate a reevaluation of Communication Studies curricula. As conventional media outlets struggle to survive amidst technological disruption, it becomes imperative for Communication Studies programs to adapt. The research employs a qualitative approach, utilizing document studies, focus group discussions, and interviews with communication experts to identify the future direction of media platforms, business models, and required communication competencies. Findings suggest that media disruption, driven by the internet and social media, demands a curriculum overhaul, with a focus on digital literacy, critical media skills, and an interdisciplinary approach. The study highlights the importance of preparing future communication professionals to navigate the ethical, social, and political challenges posed by digital media. The integration of emerging technologies such as AI and big data, along with enhanced media literacy initiatives, is crucial for fostering informed and engaged citizens in the digital era. In conclusion, Communication Studies must evolve to ensure students are well-equipped to thrive in an increasingly digital world, addressing both the opportunities and challenges posed by the digital transformation.

Keywords: Digital Media, Communication Studies, Curriculum Development, Media Literacy, Digital Transformation

Track: International Relations

Supported by :

Veto and the UN Security Council's Failure to Resolve the Israeli-Palestinian Conflict

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Abstract

This study examines the global political dynamics underlying the United Nations Security Council (UNSC) 's failure to enforce resolutions related to the Israeli-Palestinian conflict. The primary focus of the research is how the political interests of permanent members of the UN Security Council, particularly the use of veto, affect the resolution enforcement process and its impact on peace in the region. Using qualitative-descriptive methods and a study of the current literature, the study found that the dominance of national politics and international disagreement has led to stagnation in conflict resolution and prolonged humanitarian crises in Gaza and the West Bank. In addition, the use of vetoes by the United States, as Israel's main ally, has blocked many resolutions that could potentially improve the humanitarian situation, despite international consensus on the protection of civilians. These findings underscore the need to reform the UN Security Council mechanism, emphasizing the importance of fairness and inclusivity in multilateral decision-making. This research also contributes to understanding international institutional design, proposing a new approach more responsive to global conflicts involving the strategic interests of large countries. Overall, the results of this study provide recommendations for reform of the UNSC veto mechanism and emphasize the urgency of fairer multilateral diplomacy in international law enforcement.

Keywords: UN Security Council, Veto Power, Israeli-Palestinian Conflict, Multilateral Diplomacy, Reform

International Migration and Terrorism in Indonesia: Security Challenges and Government Policy

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Abstract

This paper examines how international migration influences the spread of terrorism in Indonesia. It also analyzes how Indonesia manages international migration while addressing terrorism and fulfilling its humanitarian and security responsibilities. The study uses qualitative methods and in-depth analysis to explore migration trends, terrorist incidents, and the government policies. The results indicate that migration poses both a security risk and a vital part of the economy. The study highlights how Indonesia addresses this issue by implementing coordinated plans and collaborating with other countries. The study also shows that weak migration pathways and screening systems allow individuals with links to terrorism to move from Indonesia, Malaysia, and the Philippines through regional networks. Regarding the problem Indonesia faces challenges in implementing security policies due to the lack of technology, the weak governance system, and challenges in balancing national security with human rights and the economic benefits of international migration

Keywords: International migration, terrorism, security challenge, regional cooperation, Indonesia

Mapping Indonesia Relation to BRICS: Two Level Game Theory Approach

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Abstract

The rise of BRICS—taken from the acronym for Brazil, Russia, India, China, and South Africa—marks a significant shift in the global political and economic order, offering both opportunities and challenges for emerging powers such as Indonesia. As BRICS positions itself as an alternative to Western-dominated institutions, Indonesia faces the strategic question of how best to engage with the organization to safeguard and advance its national interests. This research analyzes the trajectory of BRICS as a global actor using Two-Level Game Theory as the analytical framework. The theory provides a lens to understand how Indonesia must simultaneously navigate external negotiations with BRICS members (Level I) and reconcile those engagements with domestic political, economic, and institutional constraints (Level II). The purpose of this study is to evaluate Indonesia's strategic policy options toward BRICS in order to identify a foreign policy posture that balances international bargaining opportunities with domestic constraints while safeguarding autonomy and promoting economic diversification. The findings indicate that Indonesia's optimal strategy lies in adopting a pragmatic and adaptive stance: leveraging BRICS' platforms such as the New Development Bank for financing, strengthening South-South cooperation, and enhancing global bargaining power, while ensuring alignment with domestic development priorities and political legitimacy. Ultimately, Indonesia's participation in BRICS initiatives must be guided not only by opportunities at the international level but also by the imperative to maintain coherence with domestic agendas, thereby maximizing strategic benefits in a complex multipolar order.

Keywords: BRICS,Indonesia, Two-Level Game Theory, Foreign Policy, Strategic Interests

Reflexive Governance: ASEAN in Energy Transition

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Abstract

In tackling climate change, there have been numerous angles that need to be addressed. One of the efforts is through energy transition, moving towards the usage of renewable energy. The Southeast Asia region, as one of the vulnerable regions of climate change, needs to pay more attention to how to mitigate such an uncertain condition. The responsibilities to do so are not just falling upon each government in the region, but also need to be considered by the leading intergovernmental organization, such as ASEAN. The issue of energy is not a current issue to be dealt with, since the energy ministers of ASEAN Member States have convened annually to discuss it since 1986. In relation to that, the purpose of this paper is to examine how ASEAN, as the leading institution in the region, has been governing in achieving a common goal in terms of renewable energy. The concept of reflexive governance is used to assess ASEAN's capacity through three lenses: institutional learning mechanisms, cross-sectoral participation, and cognitive and normative adaptability. Based on the findings, we concluded that ASEAN as an institution has a moderate capacity in governing energy transition. Despite the limitations of this paper, the use of this emerging concept of reflexive governance can serve as an alternative framework for understanding how renewable energy governance should be implemented.

Keywords: ASEAN, AMEM, reflexive governance, renewable energy, energy transition

A Bridge Builder and a Voice of the Global South or a Risky Alignment? Role Conceptions of Indonesia's BRICS Membership

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Abstract

President Prabowo's decision to pursue full membership in BRICS marks a strategic departure from the cautious stance of former President Joko Widodo, who in 2023 hesitated over concerns that such a move might compromise Indonesia's Free and Active foreign policy. This paper explores why Indonesia, a country that traditionally committed to non-alignment and ASEAN centrality, becomes a member in a forum often perceived a counterbalance to the Western-led international order. This raises question, what motivated Indonesia in formally entering into BRICS grouping. Employing Role Theory, the paper argues that Indonesia's bid reflects a strategic effort to assert its role as an independent "Bridge Builder" and "Voice for the Global South." It further argues that ambition is complicated by inherent role conflicts that strain Indonesia's leadership within ASEAN and its relationship with Western partners. The study employs qualitative content analysis of primary sources, including presidential speeches and media discourse. The findings reveal that Indonesia's push for BRICS membership is a calculated move to enhance its global role, yet it highlights a fundamental tension, in which Indonesia's bridge builder and global south roles risk becoming unsustainable if perceived as favouring one side. Ultimately, Indonesia's potential entry into BRICS is a test of its ability to navigate competing roles within a polarised international system, underscoring the relevance of role theory in understanding emerging middle powers in multilateralism.

Keywords: Indonesia, Role, BRICS

Track: Agricultural Engineering

Supported by :

The Effect of a Mixture of Leaf Waste and Ash with a Bioactivator on Compost Characteristics and Corn Growth

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Abstract

This study was conducted to determine the characteristics of compost from a combination of leaf waste and ash from burning waste with bioactivator on corn growth. The study was conducted in 2 stages, namely Stage 1 compost making process with 2 factors, namely the first factor is the type of combination of leaf waste and ash from burning waste, namely A0: leaf waste with 0% ash, A1: with 5% ash, A2: with 10% ash, A3: with 15% ash, A4: with 20% ash. The second factor with bioactivator is B0: without bioactivator; B1: EM4 bioactivator; B2: Stardec bioactivator; B3: Straw isolate bioactivator; B4: Trichoderma bioactivator. Stage 2 Testing the quality of compost on corn plants with a completely randomized design with one factor with a combination of compost and ash from burning waste with bioactivator, with 3 replications. Data processing uses analysis of variance (Anova, 5%) and Duncan's test (5%). The results showed that the characteristics of the ash from the waste incineration used in the study varied in quality, with pH, NPK, Ca, Fe, and Zn micronutrients meeting quality standards, organic carbon below quality standards, and a C/N ratio above quality standards. The heavy metal Hg was below quality standards, but Pb and Cd were above quality standards. The characteristics of the ash from the waste incineration indicated that no mineralization process had occurred. The characteristics of the compost from the combination of leaf litter and ash from waste incineration with a bioactivator varied widely, with moderate to high moisture content, slightly alkaline compost pH, high organic carbon content, low to high nitrogen content, and low to moderate phosphorus content. Nutrient levels met the Indonesian National Standard (SNI) for organic fertilizers. The lowest plant height was achieved in the treatment without ash and with the Trichoderma bioactivator. The highest plant height was achieved with a combination of 5% ash without bioactivator and Stardec bioactivator. The higher the ash content, the lower the plant height.

Keywords: ash, bioactivator, combination, corn, growth

Design of Internet of Things (Iot) Based Indoor Hydroponic System for Pagoda Mustard (Brassica Rapa Subsp. Narinosa)

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Abstract

Hydroponics offers a land-efficient alternative for vegetable production, yet indoor operation requires reliable monitoring and control of nutrient chemistry and microclimate. This work implements an IoT-based indoor hydroponic system for Brassica rapa subsp. narinosa and addresses the gap between conceptual design and functional verification. This research purpose to realize the system and verify its essential functions prior to closed-loop agronomic trials. This Methodology used an engineering/design approach with snapshot-based checks (no full time-series). We performed two-point pH calibration (7–4), EC calibration at 1.413 mS/cm normalized to 25 °C, peristaltic-pump characterization (pulse duration → delivered volume), and checkpoints before dosing and after standardized mixing (T+10 min). With this metodology, the system was successfully realized; pH readings were accurate in the acidic range and showed a small neutral-range bias (~0.2 pH). Pump dosing was predictable with a +10% tendency at the 10 mL setting, and TDS increased consistently with nutrient addition. Spatial spread among sampling points after 10 min mixing indicated non-uniformity/stratification, explaining the larger post-dosing pH gap between the in-line sensor (~6.1–6.3) and the handheld meter (~7.0–7.1). We recommend improved mixing/recirculation, sensor placement downstream of the mixing zone, EC normalization to 25 °C, and short pulse-and-cooldown dosing with a per-channel correction table. These results confirm readiness for closed-loop pH–EC evaluation (MAE, %overshoot, settling time) and provide replication artifacts (wiring/BOM and calibration SOP) to support future agronomic testing.

Keywords: Internet of Things, Hydroponics Indoor System, Pagoda Mustard, Smart Indoor Hidroponic System

Soil Quality Enhancement for Sustainable Shallot (Allium Ascalonicum L.) Cultivation in Central Kalimantan Province

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Abstract

SShallot (Allium ascalonicum L.) is an economically valuable horticultural crop for Indonesia's domestic market and rural livelihoods. However, its expansion into Central Kalimantan is constrained by acidic, nutrient-poor soils such as Ultisols and Spodosols, and erratic rainfall. This study aims to develop an integrated soil quality enhancement framework combining liming, organic amendments, and biofertilizers for sustainable shallot cultivation. The research was conducted through descriptive and comparative analysis of soil properties before and after treatment in a 500 m² demonstration plot. Laboratory analyses included soil pH, organic matter, cation exchange capacity (CEC), and available phosphorus (P-Bray). Data interpretation used descriptive statistics and literature benchmarking. Results showed that integrated soil management increased soil pH from 4.5 to 6.0, organic matter from 1.2% to 2.8%, CEC from 6 to 12.5 cmol(+)/kg, and available phosphorus from 5 ppm to 18 ppm. These improvements corresponded to potential yield increases of 30–40% under optimal irrigation. The novelty of this study lies in the adaptive integration of biological and chemical amendments tailored for humid tropical acid soils. The findings provide practical insights for sustainable horticulture and local food security enhancement in Central Kalimantan.

Keywords: Shallot, Soil quality, Central Kalimantan, Sustainable cultivation, Integrated soil management

Track: Fisheries and Aquatic Resources Management

Supported by :

Seasonal dynamics and production risk of hairtail at Sadeng Fishing Port, Indonesia (2019-2024)

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Abstract

This study examines the production dynamics and risks level of hairtail at Sadeng Fishing Port during the period of 2019-2024. As one of the most economically important commodities, hairtail contributes significantly to local livelihoods, especially smallholder fishermen. However, its production is subject to seasonal fluctuations and environmental variabilities. Monthly catch data was analyzed to capture the patterns of hairtail production while coefficient of variation was used to measure the production risk. The result shows that the catches peaked typically during January-March with the highest production occurred in January 2023, and a complete absence of production was recorded in August during multiple years. The production risk shows a slightly negative trend though the slope is minimal. The value notably fluctuates with higher levels of risk coincidentally happened in years influenced by climatic anomalies such as El Nino and La Nina. These findings suggest that both environmental and human related factors jointly shape the variability of hairtail production. Understanding these dynamics is crucial to reducing the vulnerability of fishing communities and enhancing resilience under conditions of climate uncertainty.

Keywords: climate change, hairtail, production risk, Sadeng Fishing Port

Track: Agricultural Economics

Supported by :

Agricultural Performance and Its Potential Role Amid Manufacturing Industry Contraction and Employment Challenges in Solo Raya

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Abstract

The manufacturing industry in the Solo Raya region experienced a decline this year due to the closure of several large industries. This situation has not only caused changes in the socio-economic conditions of the community but also affected several other sectors, including agriculture. This study aims to analyze trends in the agricultural sector due to the closure of manufacturing industries in Solo Raya. The approach used in this research is descriptive, qualitative, and analyzes secondary data. Data collections include literature study, observations, and interviews. The data shows that the manufacturing sector still dominates the GRDP in Solo Raya District compared to the agricultural sector. The rate of workers in the industrial sector has begun to decrease due to the closure of several large-scale industries, while the rate of workers in the agricultural sector remains dominant. However, the agricultural sector is not fully capable of being the alternative for workers affected by mass lay-offs because agricultural products cannot replace the manufacturing sector as the largest contributor to GRDP. Furthermore, the agricultural sector is also not the primary choice for workers who are laid off from the manufacturing sector

Keywords: agricultural sector, GRDP, manufacturing industry

Downstreaming of Spirulina Derivative Products and Their Role in Reducing Stunting Incidence in the Special Region of Yogyakarta

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Abstract

Abstract Spirulina is a type of blue-green algae that is high in protein, making it a useful agricultural food product that can help overcome and reduce stunting. This study aims to (1) describe spirulina products and their derivatives and (2) analyze the added value of various spirulina products in micro, small, and medium enterprises (MSMEs) producing spirulina downstream products in the Special Region of Yogyakarta. The type and approach of the study are descriptive, using a case study method. Respondents were selected using purposive sampling, specifically MSME owners who produce spirulina-based products. Data collection methods included observation, interviews, and documentation. The data used were primary and secondary data. Data analysis techniques included Sales Volume Analysis and Value-Added Analysis using the Hayami method. The research results indicate that (1) Spirulina SMEs in Yogyakarta are still limited to spirulina capsules and spirulina cheese, and (2) spirulina capsules provide greater value added than spirulina cheese. The recommendations based on the research results can serve as guidance for policymakers, highlighting that spirulina has a high protein content that can help reduce stunting in the Special Region of Yogyakarta.

Keywords: Keywords: Spirulina, Downstreaming, Added Value, Stunting

Track: Agroecology

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Influence of Volcanic Lithology on Soil Physical Properties in the Watugede Sub-watershed

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Abstract

Lithology is one of the main geological factors controlling landform dynamics and soil development, particularly in tropical volcanic regions where weathering is intense. While previous research has emphasized the role of climate, slope, and land cover on soil properties and land degradation, studies that directly address the influence of lithological variation on soil physical properties through geomorphology at the sub-watershed scale remain limited. This study focuses on the Watugede Sub-watershed in Yogyakarta, Indonesia, which consists of three distinct volcanic formations, namely Kebobutak, Semilir, and Nglanggeran, that represent diverse lithological and geomorphological conditions. The objectives of this study are to (1) identify the lithological and geomorphological characteristics of the Watugede Sub-watershed, and (2) analyze the physical properties of soils that develop above each formation. Lithological data were obtained from geological maps and field surveys, while soil data were collected using purposive sampling at two depths (0–30 cm and 30–60 cm) with four replications. Laboratory analyses included bulk density, specific gravity, texture, permeability, maximum water content, and soil cohesion. The results show that lithological differences strongly influence soil physical characteristics and slope stability. Soils on the Kebobutak Formation have sandy to sandy loam textures with moderate cohesion and permeability, indicating relatively stable conditions but prone to local water saturation in fine tuff layers. The Semilir Formation produces heterogeneous soils with very fast permeability and low cohesion, reflecting susceptibility to erosion and slope deformation. The Nglanggeran Formation yields sandy loam soils with fast to moderate permeability and higher cohesion than Semilir, but instability remains on steep slopes due to intense fracturing and weathering. This study contributes to a better understanding of lithology–geomorphology–soil interactions in tropical volcanic watersheds and provides a scientific basis for watershed management and slope stability assessment.

Keywords: geomorphology, lithology, soil physical properties

Track: Geology

Supported by :

Volcanic Facies of Sedringo Volcano Dieng Volcanic Complex, Indonesia

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Abstract

The Dieng Volcanic Complex (DVC) in Central Java, Indonesia, lies within an active magmatic arc shaped by oblique subduction of the Indo-Australian Plate beneath Eurasia, with additional Pacific Plate influence. Despite its importance as a major geothermal field, the eruptive history of Sedringo Volcano—a key but poorly studied edifice within the DVC remains undocumented. This study presents the first systematic reconstruction of Sedringo's volcanic evolution and introduces a novel, process-based volcanic facies model to link surface geology with subsurface reservoir architecture. We integrate field mapping, stratigraphic logging, and petrographic analysis of volcanic lithologies. Results reveal a bipartite facies architecture: (1) a central facies of coherent andesitic lava flows and caldera-related agglomerates, and (2) a proximal facies dominated by poorly sorted pyroclastic flow deposits. This pattern records a clear shift from effusive to explosive activity, culminating in caldera collapse and peripheral cone formation. The new facies model provides the first geologically constrained framework for interpreting geothermal reservoir geometry in the Sedringo sector. Moreover, the identification of hazardous pyroclastic units and caldera structures offers actionable guidance for geothermal well placement and volcanic hazard zonation. By directly connecting volcanic stratigraphy to energy exploration and risk mitigation, this work demonstrates how fundamental geological research enhances sustainable development in active volcanic systems.

Keywords: Dieng, Facies, Sedringo, Volcanic

Landslide Risk Reduction via Early Warning System in Sambirejo Village, Indonesia

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Abstract

Sambirejo Village, located in Wonosalam District, Jombang Regency, Indonesia, is an area with moderate to high landslide vulnerability, triggered by a combination of extreme rainfall, geological conditions, and land-use practices. This study aims to design and implement an Early Warning System (EWS) as a proactive disaster mitigation effort. The research methodology includes geological surveys and fracture mapping, landslide characterization, and the planning and installation of the EWS. The developed system consists of wireless sensors that monitor ground motion (extensometers), slope gradient (tiltmeters), and rainfall, all connected to a real-time monitoring dashboard. The EWS successfully provides continuous data on ground motion and rainfall, which can be used to establish warning thresholds. For example, a "Warning" level can be activated if rainfall exceeds 50 mm/day, and an "Alert" level if the rate of ground motion exceeds 2 cm/day in combination with continuous rainfall. The highest alert, "Evacuation Warning," is issued if ground motion shows exponential acceleration. This mechanism provides a scientific basis for village governments and the Regional Disaster Management Agency (BPBD) to make timely evacuation decisions. The development and implementation of the EWS have proven to be an effective solution for mitigating landslide risks at the study site. The application of this technology can significantly reduce the potential for loss of life and property damage. Furthermore, the implementation of the EWS enhances the preparedness of both the local community and the Jombang BPBD in responding to landslide threats, thereby reducing the risk of casualties and material losses

Keywords: Early Warning System, Landslide, Disaster Mitigation, Sambirejo Village

Track: Public Administration

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Strategy and Implementation of Enhancing Scientific Publications Towards International Accreditation: A Case Study of the Geophysical Engineering Study Program

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Abstract

Scientific publication is one of the primary indicators of academic quality and institutional reputation in higher education. This article discusses strategies and the implementation of enhancing scientific publications in the Geophysical Engineering Study Program as part of the effort toward international accreditation. The research method employed is a case study with a qualitative-descriptive approach through interviews, questionnaires, document analysis, and observation of academic activities. The findings indicate that the main challenges in publication include limited writing skills, lack of global collaboration, and the high workload of the three pillars of higher education (teaching, research, and community service). Key success factors for publication are research data quality, academic writing skills, and access to international references. This article proposes strategies such as writing workshops, mentoring systems, strengthening collaborations, providing incentives, and improving research infrastructure. Implementing these strategies not only increases the quantity and quality of publications but also strengthens the study program's position in achieving international

Keywords: Scientific publication, international acreditation, Geophysical Engineering

Track: Agribusiness

Supported by :

Socio-Ecological Approaches for Sustainable Cocoa Agroecosystems in Kulon Progo Yogyakarta

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Abstract

The cocoa agroecosystem is a farming system that is vulnerable to various pressures, both from ecological aspects such as climate change, pests, and diseases, as well as from social aspects such as farmer institutional dynamics and external support. This study aims to analyze the socio-ecological factors that influence the sustainability of cocoa agroecosystems in Kulon Progo, Yogyakarta. A qualitative approach was employed through participatory observation, in-depth interviews, and questionnaires involving five respondents consisting of a group leader, one elderly farmer, one young farmer, one male farmer, and one female farmer. Data were analyzed descriptively through data reduction, classification, interpretation, and triangulation to enhance the validity of the findings. The results indicate that social factors play a crucial role in supporting the resilience of cocoa agroecosystems, particularly through the roles of farmer groups, cooperatives, as well as training and extension programs provided by the government and universities. Such support enhances farmers' adaptive capacity in pest management, organic fertilization, and crop diversification. From the ecological perspective, the use of shade trees, intercropping systems, and efforts to maintain biodiversity contribute significantly to the stability of cocoa farming ecosystems. However, several challenges remain, including decreased yields during the rainy season, pest attacks, and limited farmer knowledge regarding the importance of natural pollinators. Overall, this study emphasizes that the sustainability of cocoa agroecosystems in Kulon Progo is not solely determined by ecological aspects but is also strongly shaped by social support and institutional arrangements. Therefore, strengthening socio-ecological approaches is essential as a strategy for adaptation and sustainable cocoa farming management.

Keywords: cocoa agroecosystem, Kulon Progo, socio-ecological, sustainability

Digital Entrepreneurship Expansion in Indonesian Agritech Startups

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Abstract

The rapid advancement of digital technology has transformed entrepreneurship, including the agritech sector in Indonesia. This study examines the expansion of digital entrepreneurship among Indonesian agritech startups by analyzing five key drivers: market needs, technological innovation, government and policy support, financing, and farmer acceptance. A descriptive qualitative design was applied through a systematic literature review of academic publications, policy documents, and industry reports. Sources were selected based on relevance to agritech entrepreneurship and analyzed using qualitative content analysis to identify thematic patterns and gaps. Findings show that while startups have leveraged technology and policy support to expand rapidly, persistent challenges remain in access to financing, farmer adoption, and supply chain integration. The study contributes by providing a holistic mapping of agritech entrepreneurship in Indonesia that integrates technological, institutional, and social perspectives—an approach that extends beyond prior studies, which have often examined these factors in isolation. Practical implications arise for both policymakers and startup founders. Policymakers should strengthen financing mechanisms, enhance rural digital literacy, and align regulations with innovation to accelerate digital transformation. Startup founders are encouraged to design inclusive business models that lower adoption barriers for smallholders and improve supply chain efficiency. Future research should address the limitations of this study by incorporating primary data collection, such as surveys and interviews, and applying comparative or longitudinal designs. Such efforts would enrich understanding of how digital entrepreneurship can foster sustainable and inclusive agriculturals development.

Keywords: startups, agritech, digital entrepreneurship agritech.

Bridging Youth Technology Readiness and Internet of Things (IoT) Adoption in Agriculture: Perceived Benefits and Risks as Mediators in the TRI Framework

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Abstract

The integration of Internet of Things (IoT) technologies in agriculture offers transformative potential for enhancing productivity, efficiency, and sustainability. However, adoption remains limited, particularly among small and medium-scale farmers in Malaysia, due to economic and technological barriers. This study examines youth readiness to adopt IoT in agriculture, emphasizing the mediating role of perceived benefits and perceived risk within the framework of the Technological Readiness Index (TRI). Tertiary-educated youth are considered pivotal in accelerating digital transformation within the agricultural sector due to their exposure to emerging technologies. A quantitative research design was employed, utilizing structured questionnaires distributed to students across tertiary institutions in Melaka. Stratified sampling and simple random sampling techniques were applied to ensure representative data collection. The data were analyzed using SPSS and Structural Equation Modeling–Partial Least Squares (SEM-PLS). The results indicate that optimism and innovativeness positively influence perceived benefits, which in turn enhance youth readiness to adopt IoT. Conversely, insecurity and discomfort significantly increase perceived risk, reducing readiness. Mediation analysis confirmed that perceived benefits and perceived risk significantly mediate the relationship between TRI dimensions and youth readiness. Perceived risks moderate the relationship between insecurity, discomfort, and youth readiness to adopt IoT in agriculture sector . Higher perceived risks amplify feelings of insecurity and discomfort among youth, inhibiting their readiness to adopt IoT technologies in agriculture. The findings underscore the importance of addressing both cognitive and emotional factors in promoting IoT adoption and provide empirical evidence for policymakers and educational institutions to design targeted interventions that foster a technology-driven agricultural workforce.

Keywords: Bridging, Youth Technology Readiness, Internet of Things (IoT), TRI Framework.

Track: Human Resources Management

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Empowering Low-Carbon Behavior through Sustainable Leadership and Green Intellectual Capital in Indonesia's Public Administration

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Abstract

Governments worldwide face increasing pressure to reduce carbon emissions and align with global climate commitments. Civil servants in Indonesia play a crucial role in implementing policies that advance low-carbon development. While sustainable leadership (SL) is considered essential in shaping pro-environmental behavior, the pathways through which leadership influences employee low-carbon behavior (LCB) remain underexplored. This study examines the mediating role of green intellectual capital (GIC) in the relationship between SL and LCB. A quantitative survey was conducted with 348 civil servants (ASN) across ministries, local governments, and public agencies in Indonesia. Data were analyzed using partial least squares structural equation modeling (PLS-SEM) with SmartPLS 4. Robustness checks were performed to address common method bias, non-response bias, and endogeneity. The results reveal that SL does not directly influence LCB; instead, its effect is fully mediated by GIC. This indicates that leadership contributes to carbon-reducing behaviors primarily by building organizational knowledge, skills, and systems that support sustainability. The study extends the resource-based view by showing how SL enhances organizational resources, which in turn drive employee behavior. Practically, the findings highlight the importance of leadership development and green knowledge management as policy levers for achieving Indonesia's net-zero goals.

Keywords: Sustainable leadership, Green intellectual capital, Low-carbon behavior, Public sector

Track: Sustainable Agriculture

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Isolation and Propagation of Methomyl-Degrading Bacteria from Pesticide-Polluted Land

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Abstract

Methomyl is a widely used carbamate pesticide in horticulture, valued for its broad-spectrum insecticidal properties and rapid action. Despite its efficacy in pest control, methomyl poses significant environmental and human health risks due to its persistence in soil and toxicity to non-target organisms. Residual methomyl can contaminate soil and water bodies, leading to bioaccumulation in ecosystems and potential adverse effects on human health. This study aimed to isolate and identify indigenous bacteria from shallot farm soils in Central Java, Indonesia, capable of utilizing methomyl as a carbon and energy source, thereby facilitating its biodegradation. Soil samples from methomyl-treated fields were collected and subjected to enrichment culture techniques using Minimal Salt Medium with varying methomyl concentrations to select for resistant and metabolizing bacteria. Four distinct bacterial isolates (RW, RC, RY, and RR) were recovered, showing morphological diversity and varied growth responses to methomyl exposure. Among these, isolates RW and RC exhibited superior adaptability and growth performance, with the filamentous isolate RC demonstrating the highest growth potential, indicative of its robust methomyl degradation capacity. These findings emphasize the promising role of native soil bacterial communities in bioremediation strategies to mitigate pesticide pollution. Further research is warranted to elucidate the metabolic pathways involved, quantify degradation efficiency, and assess the practical application potential of these isolates in contaminated environments.

Keywords: methomyl, pesticide, biodegradation, soil bacteria, environmental pollution

Coconut Shell Biochar and Sheep Manure for Food Security of Maize on Samas Coastal Sandy Land

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Abstract

Coastal sandy soils have limited productivity due to their low organic matter content, cation exchange capacity, and water-holding ability, thus requiring environmentally friendly soil management innovations. Coconut shell biochar is known to improve soil physico-chemical properties, while sheep manure serves as a source of readily mineralizable organic nutrients. However, the interaction between the two in maize cultivation systems on coastal sandy soils has not been extensively studied. This study aimed to evaluate the effects of combined doses of coconut shell biochar and sheep manure on soil chemical properties and maize productivity in the sandy soils of Samas Coast. The research employed a Randomized Block Design (RBD) with two factors: biochar dose (0, 10, 15, and 20 tons/ha) and sheep manure dose (0; 2,5; 5; and 7,5 tons/ha). Observed parameters included soil organic C, cation exchange capacity (CEC), plant dry weight, and maize yield (tons/ha). Data were analyzed using analysis of variance (ANOVA), followed by post-hoc tests to determine differences among treatments. The results showed that the addition of biochar and sheep manure had significant effects on all observed parameters. The combination of medium biochar dose (20 tons/ha) and high sheep manure dose (30 tons/ha) (B2K3) resulted in the highest increase in CEC (28.5 me%), organic C (1.25%), plant dry weight, and maize yield exceeding 10 tons/ha. This indicates a synergistic effect between biochar and sheep manure in improving soil fertility and maize productivity on sandy soils. These findings contribute to the development of sustainable coastal soil management strategies while reducing dependence on chemical fertilizers, thereby supporting food security.

Keywords: Soil Ameliorant, Biochar, Sheep Manure, Coastal Sandy Land, Coconut Shell

Track: Electrical Engineering

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Deep Learning Approaches for Batak Script Recognition: A Literature Review

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Abstract

The Batak script, an ancient writing system from Indonesia, has recently drawn growing scholarly interest in the areas of digital preservation and pattern recognition. Despite this attention, the complex character forms and the limited availability of labeled datasets remain major obstacles for automated recognition. This study provides an extensive review of deep learning methods applied to Batak script recognition. It surveys approaches utilizing convolutional neural networks (CNNs), recurrent neural networks (RNNs), hybrid frameworks, and transfer learning for character classification. The review evaluates the advantages and shortcomings of these techniques in dealing with challenges such as high character similarity, insufficient data resources, and distortions in historical manuscripts. Furthermore, it outlines current research gaps and potential future directions, including the adoption of attention-based models, data augmentation methods, and multimodal solutions. By consolidating recent progress, this work offers useful perspectives for advancing Batak script recognition and supports the broader mission of safeguarding Indonesia's cultural heritage through deep learning innovations.

Keywords: Batak script, deep learning, character recognition, literature review, cultural heritage

Web-Based ISBN Registration System Development at LPPM UPN "Veteran" Yogyakarta Using the RAD Method

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Abstract

This study focuses on developing a web-based integrated information system to facilitate the registration of International Standard Book Numbers (ISBN) at the Institute for Research and Community Service (LPPM), UPN "Veteran" Yogyakarta. The research originates from the shortcomings of the current mechanism, which still utilizes Google Forms. Such an approach is deemed less efficient, lacks proper structure, and poses risks related to data security. The research method comprises several stages: data collection, requirements analysis, determination of the development model, system design, implementation, testing, and evaluation. The chosen method is Rapid Application Development (RAD), as it allows for accelerated and iterative development with active user participation. The anticipated result is a web-based system capable of improving efficiency, effectiveness, and transparency in ISBN management, while also supporting the institution's Key Performance Indicator (KPI) 2.3. In addition, the system is expected to deliver technological, social, and economic benefits within the academic community.

Keywords: ISBN, Web-Based Information System, Rapid Application Development, Higher Education

The Role of Generative AI in Agricultural Game Assets Prodiction: a Survey

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Abstract

The growing demand for high-quality visual assets in the gaming industry has created challenges in producing diverse and realistic agricultural-themed content. Traditional techniques, such as procedural content generation (PCG) and early deep learning models—including Autoencoders, Variational Autoencoders, and Deep Convolutional GANs—often struggle with limitations in resolution, realism, and diversity. This study aims to explore how Generative Adversarial Networks (GANs), particularly StyleGAN2, can address these challenges in generating 2D assets for farming games. A systematic literature review was conducted using databases such as Scopus and Google Scholar, covering publications from the last five years. Selection criteria included studies focusing on generative models for visual game asset creation, with emphasis on agricultural or environmental domains. The review highlights StyleGAN2's style-based architecture, which enables fine-grained control over sprites, textures, and environmental elements, leading to more realistic and customizable assets. Key contributions of this work include identifying current technical strengths, outlining socio-economic implications, and discussing practical challenges such as dataset availability and evaluation standards. The findings suggest opportunities for hybrid procedural–AI approaches, domain-specific datasets, and expansion toward dynamic and interactive content. By consolidating these insights, the paper provides guidance for both researchers and practitioners in leveraging generative AI for realistic and diverse agricultural game asset production.

Keywords: Generative Adversarial Networks, StyleGAN2, Game Asset Generation, Agricultural Games, AI in Game Development

Track: Tourism Management

Supported by :

Comparative Analysis of the Potential and Attractiveness of Tourism Villages for Sustainable Development

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Abstract

This study analyzes how the Krebet and Rejowinangun tourist villages in Yogyakarta manage their tourism potential to achieve sustainable tourism. The analysis utilizes the 4A Framework (Attraction, Accessibility, Amenities, and Ancillary) to comparatively evaluate the supporting components of both destinations. Data were analyzed using the Miles & Huberman interactive model to produce a comprehensive analysis and strategic recommendations for the sustainable development of cultural tourism in both locations. Using a qualitative descriptive approach, the study found that both villages implemented different yet effective models. Krebet succeeded through specialization in wooden batik crafts, supported by a fair profit-sharing system and strategic collaboration with academics and companies. In contrast, Rejowinangun developed with a diverse and integrated approach, offering a variety of cultural and environmental attractions managed by the Tourism Awareness Group (Pokdarwis) with strong support from the government and financial institutions. The study concluded that sustainability can be achieved through various models tailored to local potential, and its findings provide strategic recommendations for the future development of other tourist villages. This study also contributes to the literature on sustainable tourism management by highlighting the need for adaptive frameworks based on specific local resource endowments.

Keywords: Community-Based Tourism, Sustainable Tourism, Tourism Village

Reframing MSME Competitiveness: Integrating Digital Transformation, Customer-Centric Value, and Green Innovation for Sustainable Advantage

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Abstract

Globalization and rapid technological disruption have created a highly dynamic and competitive business landscape, posing significant challenges for Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. Despite their strategic role as the backbone of the national economy, MSMEs face structural constraints, including limited access to technology, financial resources, and innovation capacity. This study investigates the influence of digital transformation (DT), customer value creation (CVC), and green innovation (GI) on sustainable competitive advantage (SCA), drawing upon the Resource-Based View (RBV) as the theoretical lens. Using a quantitative approach, data were collected from 300 MSMEs across manufacturing and service sectors in Indonesia through a structured questionnaire The results suggest that while digital transformation and green innovation provide strategic foundations, their effectiveness is amplified when aligned with customer value creation. The study contributes to the innovation and strategic management literature by extending RBV to the context of MSMEs in emerging economies. Practically, the findings offer insights for policymakers and MSME managers in designing strategies that integrate digital adoption, customer-centric innovation, and sustainability orientation to achieve sustainable competitive advantage in the face of global competition.

Keywords: Digital Transformation; Customer Value Creation; Green Innovation; Sustainable Competitive Advantage; MSMEs; Resource-Based View

Evaluating the Tourism Supply Chain Performance in Wukirsari Cultural Village, Yogyakarta: An Importance-Performance Analysis

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Abstract

Tourism villages play a vital role in Indonesia's sustainable tourism strategy by combining cultural preservation with local economic empowerment. Wukirsari Cultural Village in Bantul, Yogyakarta, is a well-known destination for its batik-making heritage and cultural attractions, but its competitiveness depends on the effectiveness of the tourism supply chain (TSC). This study evaluates the TSC performance of Wukirsari using the Importance-Performance Analysis (IPA) method. Primary data were collected through structured questionnaires distributed to visitors, while secondary data were obtained from official reports and statistics. The analysis shows that attractions scored the highest importance (mean = 4.54) with strong performance (mean = 4.09), highlighting batik workshops and cultural performances as the village's key strength. Conversely, infrastructure received the highest importance (mean = 4.57) but the lowest performance (mean = 3.83), revealing significant service gaps in sanitation facilities, water and electricity supply, and parking. Transportation, accommodation, and tour operator services were also found to underperform relative to visitor expectations, while culinary and shopping facilities performed moderately well. These findings indicate that while Wukirsari's cultural authenticity is its primary competitive advantage, improvements in infrastructure and supporting services are urgently required. The study contributes practical recommendations for policymakers, village managers, and local SMEs to prioritize infrastructure development, maintain cultural authenticity, and strengthen stakeholder collaboration for sustainable tourism.

Keywords: Tourism Supply Chain, Importance-Performance Analysis, Cultural Village, Visitor Satisfaction, Sustainable Tourism

Track: Education

Supported by :

Developing A Learning Outcomes Assessment Model for Geological Engineering Education Based on OBE and CQI Framework

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Abstract

International accreditation frameworks require engineering programs to demonstrate systematic assessment of Program Learning Outcomes (PLOs) to ensure graduates achieve global competencies. However, many institutions, including engineering programs in Indonesia, still face challenges in operationalizing outcome-based assessments due to fragmented data, inconsistent documentation, and limited feedback mechanisms. To address this gap, this study aimed to develop a PLO assessment model for geological engineering education based on Outcome-Based Education (OBE) and Continuous Quality Improvement (CQI). The research employed a research and development (R&D) approach with action research elements, integrating gap analysis, readiness assessment, and prototype system development. The model was designed following the Plan–Do–Check–Act (PDCA) cycle and operationalized through a prototype information system constructed with PHP and a centralized database. Data were collected through literature review, stakeholder interviews, and document analysis, while the system was tested using black box testing and evaluated through faculty feedback. The findings revealed that the model effectively linked Course Learning Outcomes (CLOs) to PLOs, automated reporting processes, and reduced administrative burdens in preparing accreditation documentation. Furthermore, the integration of CQI ensured that assessment data were continuously used for curriculum improvements, thereby embedding a culture of sustainable quality assurance. The study contributes to both theoretical and practical domains by bridging curriculum design, assessment practices, and accreditation requirements. While the prototype requires further refinement and scaling, the model provides a replicable framework for engineering programs preparing for international accreditation and for producing globally competent graduates.

Keywords: Program Learning Outcomes, Outcome-Based Education, Continuous Quality Improvement

The Regulation of the Minister of Higher Education, Science, and Technology No. 39/2025: Harmonization of the Internal Quality Assurance System Instruments at UPN 'Veteran' Yogyakarta

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Abstract

This study formulates a harmonisation model for UPN "Veteran" Yogyakarta's SPMI instruments based on Permendiktisaintek 39/2025, synchronising internal standards, BAN-PT/LAM/international accreditation criteria, and data governance via PANDU to accelerate evidence-based continuous improvement through the PPEPP cycle. The research employs a literature review of current regulations (Law 12/2012, SN Dikti, Permendiktisaintek 39/2025, BAN-PT/LAM instruments), followed by FGDs. The sample included department heads from all faculties; faculty-level academic affairs leads; certified internal assessors affiliated with BAN-PT, LAMTEK, LAMEMBA, and LAMSPAK; LPPM representatives for research and learning services; and UPA TIK staff responsible for PANDU and data integration, ensuring role-diverse perspectives on standards, evidence, and system requirements. Primary data comprised a focus on gaps, redundancies, feasibility, and migration needs from legacy instruments (2017, 2020, 2022) to post–Regulation 39/2025 indicators. Qualitative content analysis was applied to policy texts, accreditation instruments, and FGD/monitoring and evaluation materials to derive themes, indicators, and evidence specifications aligned to outcomes- and impact-orientated criteria used by BAN-PT/LAM. The study delivers an SPMI–SPME synchronisation model orientated "beyond standards", operationalising evidence-based PPEPP and linking Additional Performance Indicators to outcome- and impact-based accreditation indicators. Initial implementation indicates institutional readiness through PANDU and data integration, alongside UPNVY's programme accreditations, which are primarily rated as Excellent/Very Good, as well as international accreditations (FIBAA, ACCA). The model provides a two-year transition roadmap to update SPMI/SPME regulations, refresh audit and monitoring instruments in PANDU, identify gaps in relation to BAN-PT/LAM/international criteria, and coordinate data for accountability and continuous quality enhancement.

Keywords: Higher Education Quality Assurance, Internal-External Quality Assurance, PANDU, BAN-PT; LAM; International Accreditation.

Developing a Sustainable Community Extension Program in Teacher Education Through Longitudinal School-To-School Work Immersion

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Abstract

With the increasing standards for teacher education, preparing future educators for the profession has become essential. One approach is through school-to-school work immersion, where prospective preservice teachers observe, participate in, and reflect on teaching in authentic contexts. This study reports on a work immersion program developed at FAITH Teacher Education for Grade 12 students aspiring to become teachers. Anchored on the ADDIE model, the program has been implemented for three years across eleven batches and remains ongoing. Grounded in the Philippine Professional Standards for Teachers (PPST), the ten-day immersion engages participants in seven domains: Content Knowledge and Pedagogy; Learning Environment; Diversity of Learners; Curriculum and Planning; Assessment and Reporting; Community Linkages and Professional Engagement; and Personal Growth and Professional Development. Evaluation methods included post-tests and focus group discussions to assess outcomes and identify areas for refinement. Findings across three years showed that the program consistently achieved its objectives, with outcomes rated as Very Highly Attained. Strengthened community linkages, reflective practices, and improved understanding of school operations emerged as key impacts. Each cohort built upon the learnings of previous ones, fostering continuity and program growth. Notably, the consistent success of orienting participants to school community, operations, and policies highlights the importance of grounding preservice teachers in institutional structures. However, challenges persisted, particularly in integrating ICT into teaching practices, which remained the lowest-rated area in Years 1 and 3. In contrast, Year 2 emphasized content knowledge, pedagogy, and classroom management, areas identified as needing reinforcement. Statistical analysis confirmed no significant differences across cohorts ($p = 0.218$), indicating program stability. Qualitative results revealed themes of positive influence on participants' perspectives toward teaching as a profession, challenges in program delivery, and calls for periodic recalibration. These insights point to the value of work immersion not only in shaping competencies but also in nurturing reflective and socially responsible educators. Moving forward, the program aims to revisit its design, sequence, and evaluation instruments to address recurring challenges and ensure sustainability. By strengthening its framework, the initiative contributes to the long-term goal of developing a robust community extension partnership among schools and teacher education institutions.

Keywords: Teacher education, community extension, work immersion, preservice teachers

Track: Policy Studies

Supported by :

Decentralization and the Transformation of Solid Waste Governance in Sleman Regency: A Preliminary Review

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Abstract

The solid waste issue has become a major concern in the Special Region of Yogyakarta following the closure of the Regional Final Disposal Site (TPA) Piyungan in 2024. This closure led to a shift in waste management governance from a centralized provincial level to a decentralized approach at the city/regency level. Despite this shift, there is a lack of comprehensive literature explaining the governance models at these local levels. Responding to this situation, this paper aims to explain the transformation of waste governance modes, specifically in Sleman Regency, post-decentralization. By employing Kooiman's concept of governance, waste management issues are not merely technical problems but can be seen through the lens of actor interaction within an ecosystem framework amidst complex and limited circumstances. This research adopts a qualitative method to describe comparisons regarding the governance modes that have emerged post-decentralization. he study involves interviews with key stakeholders including the Sleman Environmental Agency (DLH), Integrated Service Unit (UPT) employees, Integrated Waste Treatment Site (TPST) personnel, community-run 3R waste facilities, village-owned enterprise waste sites, private waste disposal sites, and depot operators. The research reveals that in the current state, Sleman's governance model simultaneously reflects hierarchical governance, co-governance, and self-governance, which remain unbalanced and fragmented. This condition is largely due to policy limitations, constrained resources, and the inherent complexity of solid waste issues. These findings aim to contribute to the discourse on improving solid waste governance, particularly regarding governability issues at the local level, providing insights into enhancing the management of waste systems within the region.

Keywords: decentralization, landfill, mode governance, solid waste

Development of the Massive Open Online Course (MOOC) KKN UPN "Veteran" Yogyakarta Student Preparation and Examination System Based on Participant Needs and Experiences

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Abstract

Kuliah Kerja Nyata (KKN) is one of the community service activities that must be carried out by every university. Because of this, KKN participants need preparation before going directly to the KKN location. KKN preparation at UPN "Veteran" Yogyakarta, which is carried out online and uses several separate platforms, makes access, attendance recording, and information dissemination difficult. Research on the needs and experiences of KKN participants can be used as a basis for developing an integrated system Massive Open Online Course (MOOC). The purpose of this study is to identify the needs and experiences of KKN students through a questionnaire that will be used as a basis for developing a more effective and integrated preparation and examination system. The research method used is a quantitative descriptive method with qualitative analysis support for closed questions and thematic analysis methods for open questions. Data were collected through a questionnaire with 48 questions. The results of the study show that there are still some students who have limited internet access, which sometimes hinders their understanding of the material. Some respondents also want an integrated student preparation system, covering materials and modules, an attendance system, an examination system with automatic supervision and answer evaluation to increase the credibility of the examination.

Keywords: KKN, MOOC, Briefing, Preparation Test

Track: Political Science

Supported by :

Paradiplomacy and the Role of Local Actors: A Case Study of Bleberan Village in Collaboration with Gyeongsangbukdo, South Korea

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Abstract

Paradiplomacy has become a significant phenomenon in contemporary international relations, where subnational actors seek to build global networks to support local development. However, in practice, subnational actors cannot operate alone but rely on the involvement of non-state and transnational actors. This study analyzes the roles of key actors in implementing paradiplomacy in Bleberan Village, Gunungkidul, in collaboration with the Gyeongsangbukdo Provincial Government, South Korea. Data were collected through interviews with the village government, Village-Owned Enterprises (Badan Usaha Milik Desa or BUMDes), the Gyeongsangbukdo Saemaul International Foundation (YGSI), and the mushroom farming community. The results show that the success of paradiplomacy is primarily determined by the complex interactions between transnational actors (YGSI and the Gyeongsangbukdo government), local actors (BUMDes, village government, and farming communities), and individuals with stronger socio-economic capacities. Although the Korean government has provided support through grants, training, and infrastructure, the program's sustainability faces obstacles such as weak financial management, low human resource capacity, and minimal support from the local government. These findings confirm that paradiplomacy is not simply a subnational relationship, but a multi-level practice involving networks of transnational and non-state actors. Therefore, strengthening local capacity and clarifying cross-actor collaboration mechanisms are crucial prerequisites for the sustainability of paradiplomacy.

Keywords: Paradiplomacy, non-state actors, YGSI, BUMdes, Farmer Community

Track: Food Science and Technology

Supported by :

Effect of Glycerol Dosage on Antifungal Performance of Black Cumin Oil–Fortified Edible Coatings on Red Chili (Capsicum Annuum)

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Abstract

Edible coatings can stop chili from getting moldy, but it's not often clear how the amount of plasticizer affects antifungal performance. We made a coating out of starch, pectin, and gelatin that was strengthened with 3% black cumin (Nigella sativa) oil and 0, 10, 20, or 30% glycerol (w/w of total biopolymers). The chili that wasn't coated was the control. Whole red chilies were dip-coated and kept in the dark for 21 days at 25 ± 2 °C and 65 ± 5% RH. On Day 0 and Day 21, fungal occurrence was counted on DG-18 agar with 0.01% chloramphenicol (25 °C, 5–7 d), and vitamin C was measured iodometrically (reported as mg/100 g and retention %). On Day 21, all coatings reduced molds compared to the control, with a clear dose pattern: 0% < 10% < 20% ≈ 30%, resulting in reductions of about 40–48% depending on the dose ($p < 0.05$). The middle range (about 20%) gave the most consistent suppression; 30% didn't give any real benefit over 20%, which shows that higher plasticization levels don't help as much. The retention of vitamin C was similar to the microbiological result: about 81% (0%), 85% (10%), and about 87% (20–30%) compared to about 70% in the uncoated control. This supports the idea that coatings that stay conformal without too much surface moisture can both stop molds and slow down oxidative loss during storage. This matrix has about 20% glycerol, which is a useful single-ingredient change that makes the antifungal effect stronger and keeps the quality of whole chili under dark, cool conditions.

Keywords: chili, edible coating, glycerol; Nigella sativa, molds

Track: Smart Agriculture

Supported by :

IoT Adoption in Agriculture: Linking Technology Readiness, Acceptance and Entrepreneurial Ambidexterity Among Small-scale Farmers in Sabah

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Abstract

The adoption of Internet of Things (IoT) technologies in agriculture has the potential to enhance productivity, efficiency, and sustainability. However, small-scale farmers often face barriers related to technological capability, acceptance and limited resources. The Sabah state's alarming long-term food security is further challenged by declining workforce and limited productivity. Understanding the readiness and acceptance of Sabahan farmers towards IoT adoption is therefore needed in shaping effective interventions. The goals of this study are (i) to investigate the influence of technology readiness on technology acceptance within a technology readiness–acceptance framework; (ii) to examine the effects of perceived usefulness and perceived ease of use on IoT adoption intention; and (iii) to analyse the mediating role of entrepreneurial ambidexterity in strengthening the relationship between technology acceptance and adoption intention among small-scale farmers in Sabah. A cross-sectional quantitative research design was applied, with data collected from small-scale farmers using proportionate stratified random sampling. The dataset was analysed using partial least squares structural equation modeling (PLS-SEM) to test the research framework. The findings demonstrate that (i) technology readiness motivators significantly influence technology acceptance, (ii) perceived usefulness is the strongest predictor of IoT adoption intention and (iii) entrepreneurial ambidexterity plays a significant mediating role, particularly through perceived ease of use. This study contributes in providing empirical evidence into the behavioural factors shaping IoT adoption among smallholder farmers. The results propose practical directions for policymakers, agricultural technology providers and stakeholders in designing strategies that align with farmers' readiness and support the digital transformation of Sabah's agricultural sector.

Keywords: technology acceptance, technology readiness, technology adoption intention, entrepreneurial ambidexterity

Track: Mechanical Engineering

Supported by :

A Review of Shape Memory Alloys: Fundamental, Microstructure Property and Emerging Trends in Industrial Applications

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Abstract

Shape Memory Alloys (SMAs) are an exceptional category of functional materials that can restore predefined shapes or sustain substantial reversible deformations through thermoelastic martensitic transformations. In recent years, SMAs have attracted significant interest due to their unique combination of mechanical adaptability, durability, and multifunctionality, making them highly relevant for advanced engineering applications. This review provides a detailed examination of SMAs, including their classification into Ni, Cu, Fe-based, and emerging high-entropy alloy (HEA) systems, as well as a historical perspective on the development of the Shape Memory Effect (SME) and Superelasticity (SE). The discussion addresses critical factors influencing SMA performance, such as alloy chemistry, microstructural characteristics, processing techniques, quenching and homogenization treatments, and transformation temperatures (M_s, Mf, As, Af). Applications are explored with a focus on NiTi alloys in biomedical devices and precision actuators, Fe–Mn–Si for structural use, and Cu–Zn–Al for energy-efficient and cryogenic applications. Emerging directions, including soft robotics, thermal energy devices, and architected SMA structures enabled by additive manufacturing, are reviewed, along with strategies to mitigate issues such as cyclic degradation, hysteresis, and reliability concerns. By integrating theoretical insights with practical considerations, this review highlights the growing industrial relevance of SMAs as versatile, high-performance materials for next-generation adaptive systems.

Keywords: Shape memory alloy, Phase, Transformation, Martensite

Tensile Testing and Macrographic Examination of Resistance Spot Welding on Aluminum–Copper–Magnesium Alloy Sheet in Accordance with AWS D17.2

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Abstract

The growing use of aluminum alloys in aerospace structures requires reliable and standardized joining methods. This study evaluates the feasibility of resistance spot welding (RSW) on 2024-T42 aluminum sheets with dissimilar thicknesses of 0.6 mm and 0.8 mm in accordance with American Welding Society AWS D17.2. Pre-production specimens were tested using tensile shear and macrographic analyses based on ASTM International ASTM E8 and ASTM E340 standards. The average tensile shear load was 318.22 lbf, exceeding the minimum requirement of 235 lbf. Penetration depth (45–55%) and indentation (<0.10 mm) also met the acceptance criteria. Surface resistance before welding was below 50 μΩ. These results confirm that RSW of 2024-T42 aluminum sheets with dissimilar thickness meets AWS D17.2 requirements and provides a technically viable solution for aerospace structural applications.

Keywords: Resistance spot welding, 2024 T42 aluminum-copper-magnesium alloy, AWS D17.2, Tensile shear test, Macrographic analysis

Analysis of the Carburizing Process Using a Batch Atmosphere Furnace

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Abstract

The carburizing process is a heat treatment method aimed at enhancing the surface hardness, wear resistance, and corrosion resistance of materials by adding carbon at high temperatures. This study analyzes the impact of this process on low-carbon steels (STKM 13A and SPCC) and an alloy steel (SCM 435). Carburization was conducted at 900 oC for 100 minutes. The tests performed included a Micro Vickers hardness test and microstructural characterization following the ASTM E-407 standard. The results showed a significant increase in the surface hardness of all materials. Critically, carbon diffusion in both STKM 13A and SPCC reached a consistent and defined depth of 0.48 mm, while in SCM 435, it diffused uniformly across the entire material thickness. Microstructural analysis revealed a phase transformation from pearlite and ferrite before carburization to martensite afterward. For STKM 13A and SPCC, the martensite phase formed up to a depth of 0.48 mm, while SCM 435 underwent a total transformation to the martensite phase, resulting in full hardening. This research provides specific quantitative data on the critical case depth (0.48 mm) achievable in STKM 13A and SPCC under these conditions, offering a clear reference point for industrial applications requiring controlled surface hardening.

Keywords: carburization, hardness, phase transformation

Track: Food Engineering

Supported by :

Rice Straw Based Thickening Agent for Dysphagia Supplements

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Abstract

The increasing prevalence of dysphagia among elderly and neurologically impaired populations highlights the urgent need for safe and stable texture-modified diets. Starch, the conventional thickening agent, is prone to rapid enzymatic breakdown by salivary amylase, resulting in compromised viscosity and safety risks during swallowing. Carboxymethyl cellulose (CMC), a cellulose derivative, offers superior viscosity stability and resistance to enzymatic degradation. This study aimed to synthesize CMC from underutilized agricultural waste, namely rice straw, and evaluate its potential as a sustainable thickening agent for dysphagia supplements in comparison with commercial pharmaceutical-grade CMC. Cellulose was extracted from rice straw, carboxymethylated, and incorporated into supplement formulations. The products were characterized using Fourier Transform Infrared Spectroscopy (FTIR), Scanning Electron Microscopy (SEM), and rheological analysis with rotational and shear rheometry. Rice straw-derived CMC achieved a degree of substitution (DS) of 0.79, while commercial CMC displayed a higher DS of 1.3. Both types of CMC resisted amylase-induced degradation, in contrast to starch solutions that exhibited >97% viscosity loss. Rheological results confirmed pseudoplastic behavior; commercial CMC showed higher viscosity (1460 cP, honey-like), whereas rice straw CMC demonstrated lower but more stable viscosity (268 cP, nectar-like). The novelty of this research lies in valorizing rice straw, an abundant agricultural residue, into a functional biopolymer for dysphagia-oriented nutrition. Practically, this approach provides a safer alternative to starch-based thickeners while promoting sustainable resource utilization, thereby addressing both clinical nutrition challenges and environmental concerns.

Keywords: Carboxymethyl cellulose, dysphagia, viscosity, food rheology, nutritional supplement

CLOSING SPEECH

Excellencies, Presenter, Attendees

Ladies and Gentlemen,

I am truly honored and delighted to deliver the **closing remarks** of the **2nd International Conference on Sustainable Research and Development (ICSRD-25)**, organized by **LPPM Universitas Pembangunan Nasional "Veteran" Yogyakarta** and **Research Synergy Foundation**, and proudly co-hosted by the **Polytechnic University of the Philippines (PUP)** and **Universiti Teknologi MARA (UiTM) Cawangan Sabah, Malaysia**.

The organizing committee is deeply grateful for the active engagement and enthusiastic participation of everyone throughout this one-day conference. All sessions have been successfully conducted, with enriching presentations, insightful discussions, and smooth coordination across all segments of our virtual event.

This conference has showcased meaningful contributions from scholars and practitioners across multiple disciplines—demonstrating how collaborative and interdisciplinary approaches can drive sustainable solutions to global challenges.

The insightful presentations and constructive exchanges we have witnessed today reflect our collective commitment to advancing research that integrates sustainability, innovation, and resilience. These discussions not only deepen our academic understanding but also open new pathways for cross-sectoral and international collaborations in the years ahead.

Beyond the sharing of research, ICSRD-25 has served as a vibrant platform for building professional networks, fostering dialogue, and strengthening global partnerships among universities and researchers from Indonesia, Malaysia, the Philippines, and beyond.

On behalf of the organizing committee, I extend my sincere appreciation to our **distinguished keynote speakers**, **reviewers**, **session chairs**, **presenters**, and **participants** for your invaluable contributions to this conference. I also express heartfelt thanks to the entire committee team for their tireless efforts and dedication in making ICSRD-25 a great success.

Thank you once again for your active participation. We look forward to meeting you in our future conferences. Until then, I wish you continued success in your research and professional endeavors.

Best regards,

Dr. Sri Dwi Ari Ambarwati, S.E., M.Si.
Conference Chair of ICSRD-25

Future Events

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JICSRD 2025

Jakarta International Conference on Research, Innovation, and Sustainable Development 2025
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ICRES-ISCLO

International Conference on Research in Emerging Technologies and Strategic Business & International Seminar and Conference on Learning Organisation
https://icres.events/
Hybrid Conference, Telkom Corporate University Campus, Bandung, Indonesia –
December 11-12, 2025

IHSATEC 2025: 18th HASIB

The International Halal Science and Technology Conference 2025 (IHSATEC): 18th Halal Science Industry and Business (HASIB)
https://www.ihsatec.com/
Hybrid Conference, Bangkok, Thailand –
December 18-19, 2025

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