ICRTMDR
8 - 9 November 2025 | Riyadh, Saudi Arabia

8th International Conference on
Recent Trends in Multi-Disciplinary Research

ICRTMDR 2025

08th-09th November, 2025

Riyadh, Saudi Arabia

Organized by

IFERP® Academy
Explore Your Research Journey...

8th International Conference on Recent Trends in Multi-Disciplinary Research (ICRTMDR-2025), Riyadh, Saudi Arabia

ISBN 978-93-92104-14-5

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“Building a Sustainable Future through Integrated Research”

- 8th ICRTMDR-2025

Preface

We are delighted to extend a warm welcome to all participants attending "8th International Conference on Recent Trends in Multi-Disciplinary Research (ICRTMDR-2025)" on November 08th-09th, 2025 at Riyadh, Saudi Arabia organized by IFERP Academy. This conference provides a vital platform for researchers, students, academicians, and industry professionals from all over the world to share their latest research results and development activities in the fields such as Science, Technology, Social Sciences, humanities and more. It offers delegates an opportunity to exchange new ideas and experiences, establish business or research relationships, and explore global collaborations.

The proceedings for ICRTMDR-2025 contains the most up-to-date, comprehensive, and globally relevant knowledge in the fields such as Science, Technology, Social Sciences, humanities and more. All submitted papers were subject to rigorous peer reviewing by 2-4 expert referees, and the papers included in these proceedings have been selected for their quality and relevance to the conference. We are confident that these proceedings will not only provide readers with a broad overview of the latest research results in Science, Technology, Social Sciences, humanities and more but also serve as a valuable summary and reference for further research in this field.

We are grateful for the support of many universities and research institutes, whose contributions were vital to the success of this conference. We extend our sincerest gratitude and highest respect to the many professors who played an important role in the review process, providing valuable feedback and suggestions to authors to improve their work. We also extend our appreciation to the external reviewers for providing additional support in the review process and to the authors for contributing their research results to the ICRTMDR-2025.

Since September 2025, the Organizing Committees have received more than 80+ manuscript papers, covering all aspects of ICRTMDR-2025. After review, approximately 25+ papers were selected for inclusion in the proceedings of ICRTMDR-2025. We would like to thank all participants at the conference for their significant contribution to its success.

We express our gratitude to the keynote and individual speakers and all participating authors for their dedication and hard work. We also sincerely appreciate the efforts of the technical program committee and all reviewers, whose contributions made this conference possible. Finally, we extend our thanks to all the referees for their constructive comments on all papers, and we express our deepest gratitude to the organizing committee for their tireless work in making this conference a reality.

ISBN: 978-93-92104-14-5

About 8th ICRTMDR-2025

8th International Conference on Recent Trends in Multi-Disciplinary Research (ICRTMDR-2025), organized by the IFERP Acaemy, is set to take place on November 08th-09th, 2025. This conference provides a platform for scholars, researchers, and professionals from various disciplines to explore and discuss recent advancements, innovations, and challenges in multi-disciplinary research. Attendees can expect a diverse range of content, including keynote speeches, paper presentations, poster sessions, and interactive discussions covering topics spanning science, technology, engineering, mathematics, social sciences, humanities, education, and business. ICRTMDR-2025 aims to foster interdisciplinary collaboration, facilitate knowledge sharing, and inspire new avenues of research.

Purpose of the Conference

ICRTMDR aspires to be a central hub for research minds, offering a dynamic platform where a tapestry of ideas, innovations, and insights come together. Our foremost objective is to foster purposeful dialogue and collaboration across diverse multidisciplinary domains. By uniting experts from various fields, we aim to cultivate an environment that encourages the cross-pollination of ideas, laying the foundation for pioneering research outcomes. Join us in this collaborative endeavor, where the intersections of knowledge spark new dimensions in research and propel us collectively towards innovative solutions and breakthroughs.

Objective of the Conference

The primary objective of the ICRTMDR conference is to create a dynamic and inclusive platform that advances multidisciplinary research. The key goals include:

1. Promoting Cross-Disciplinary Collaboration: Encouraging collaboration between researchers, scholars, and professionals from diverse fields to promote cross-disciplinary learning and innovation.
2. Facilitating Knowledge Exchange: Providing a space for the exchange of ideas, insights, and research findings to foster a deeper understanding of multidisciplinary topics.
3. Showcasing Research Impact: Showcasing the impact of multidisciplinary research on addressing real-world challenges and contributing to global knowledge.
4. Catalyzing Innovation: Inspiring innovation by bringing together individuals with varied expertise, encouraging the exploration of new ideas and methodologies.
5. Building a Global Research Community: Establishing connections and networks that transcend disciplinary boundaries, contributing to the formation of a global community dedicated to advancing multidisciplinary research.

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About **IFERP Academy**

The IFERP Academy stands as a beacon of excellence in promoting research, innovation, and academic collaboration in the field of education. Rooted in a commitment to advancing the educational and educational conference 2025 landscape, IFERP serves as a dynamic platform that nurtures scholarly endeavors, facilitates knowledge dissemination, and fosters a vibrant community of educators and researchers.

IFERP is driven by a mission to create a conducive environment for the exchange of ideas, the exploration of emerging trends, and the promotion of best practices in education. Established with the vision of being a catalyst for positive change in education, IFERP plays a pivotal role in connecting educators, researchers, and professionals on a global scale.

What We Do?

IFERP believes that there is always a better way to treat the professionals by providing them a world class stage by organizing conferences. We are committed to doing the following activities:

- We encourage convenient access to academic resources and support for all the aspirants and research scholors in urban and rural areas.
- IFERP organizes public education programmes, Workshops, Conferences, Webinars, Seminars, Guest Lectures, Short Term Training Programme, Faculty Development programme in the field of Engineering, Science & Technology.
- IFERP is dedicated to inquisitiveness, innovations and recent trends and developments in the field of Engineering & Technology.
- IFERP believes in knowledge sharing by collaborating with other Universities, organizations/Associations, to bring a better tomorrow.

Mission

Upskilling the knowledge hub through technological innovation and excellence for the benefit of humanity.

Vision

A digitally equipped robust, dynamic & swift professional community integrating academics & industry for upgraded technical knowledge implementation.

Value

IFERP values the restoration of highlevel technological research, learning, collaboration, resource sharing & community-building traditions.

Goal

To serve as the foundation for all technological progress and advancement activities around the world.

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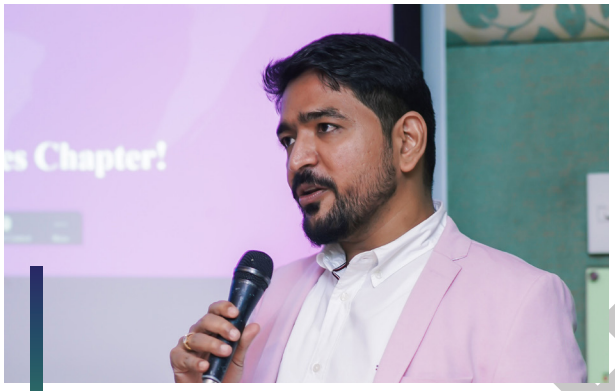
From **Managing Director, IFERP**



Mr. A. Siddth Kumar Chhajer

Managing Director & Founder
IFERP, Technoarete Group, India

On behalf of IFERP & the organizing Committee, I express my hearty gratitude to the Participants, Keynote Speakers, Delegates, Reviewers and Researchers.

The goal of the ICRTMDR-2025 is to provide knowledge enrichment and innovative technical exchange between international researchers or scholars and practitioners from the academia and industries in various fields of academics. This conference creates solutions in different ways and to share innovative ideas in those fields.

ICRTMDR-2025 provides a world class stage to the Researchers, Professionals, Scientists, Academicians, and students to engage in very challenging conversations, assess the current body of research and determine knowledge and capability gaps.

ICRTMDR-2025 will explore the new horizons of innovations from distinguished researchers, scientists and eminent authors in academia and industry working for the advancements in Education, Research, and Social Sciences for Humanities from all over the world. ICRTMDR-2025 hopes to set the perfect platform for participants to establish careers as successful and globally renowned specialists in various fields of Academics.

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From **Chief Executive, IFERP**

Mr. Rudra Bhanu Satpathy

Chief Executive Officer & Founder
IFERP, Technoarete Group, India

IFERP is hosting the 8th International Conference on Recent Trends in Multi-Disciplinary Research (ICRTMDR-2025) this year in month of November. The main objective of ICRTMDR-2025 is to grant the amazing opportunity to learn about groundbreaking developments in modern industry, talk through difficult workplace scenarios with peers who experience the same pain points, and experience enormous growth and development as a professional.

There will be no shortage of continuous networking opportunities and informational sessions. The sessions serve as an excellent opportunity to soak up information from widely respected experts. Connecting with fellow professionals and sharing the success stories of your firm is an excellent way to build relations and become known as a thought leader.

I express my hearty gratitude to all my Colleagues, Staffs, Professors, Reviewers and Members of organizing committee for their hearty and dedicated support to make this conference successful. I am also thankful to all our delegates for their pain staking effort to make this conference successful.

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About **Keynote Speaker**

Dr. Thelma Domingo Palaoag

Faculty, College of Information Technology and Computer Science &
Director, Innovation and Technology Transfer Office, University of the Cordilleras, Philippines

Dr. Thelma D. Palaoag, Director of the Innovation and Technology Transfer Office of the University of the Cordilleras, she is a visionary leader, accomplished researcher, and trailblazer in the field of Information Technology (IT). With an unwavering commitment to advancing technological frontiers, she has dedicated her career to pushing the boundaries of IT research and fostering innovation within academic institutions.

ISBN: 978-93-92104-14-5

About **Keynote Speaker**

Dr. Ali Samer Muhsan

Senior Lecturer,
Mechanical Engineering Department,
University of Technology PETRONAS,
Malaysia.

Dr Ali earned his PhD in Mechanical Engineering (Nanotechnology) with the Best Researcher Award in 2014. He authored more than 80 scientific international journal papers indexed by Thomson Reuters and Web of Science. He is a highly experienced and passionate researcher with a track record of 10 years of success in conducting research and delivering high-impact, engaging, and educational programs. He also served as the leader of the Production Engineering Cluster in the Petroleum Engineering Department from 2017 to 2020 and the Final Year Project Director from 2018 to 2024. He has been appointed as an Honorary Keynote Speaker in multiple national and international conferences/seminars and workshops.

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About **Keynote Speaker**

Dr. Nahid Fatima

Associate Professor,
Prince Sultan University (PSU)
Riyadh, Saudi Arabia.

A seasoned professional with over 20+ year of rich experience in teaching and mentoring Undergraduate, Graduate and Post Graduate students at various national and international universities. A strong advocate of using technology in teaching mathematics because it helps students visualize the things that they cannot easily see. An avid researcher and collaborator, I have numerous articles published in various Scopus International journals.

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About **Keynote Speaker**

Dr. Varagunapandiyan Natarajan

Associate Professor,
Chemical Engineering,
College of Engineering,
King Khalid University,
Saudi Arabia.

Dr. Varagunapandiyan Natarajan is a distinguished researcher and academician currently serving as Associate Professor of Chemical Engineering at King Khalid University, Saudi Arabia. He obtained his Ph.D. in Chemical Engineering from the Indian Institute of Technology (IIT) Delhi, where he focused on the development of high-temperature proton exchange membrane water electrolyzers (PEMWE) for efficient and pure hydrogen and oxygen production. Dr. Natarajan's academic journey is supported by several prestigious recognitions, including the UKIERI-DST fellowship, which enabled collaborative research at Newcastle University, UK, and fellowships from both the Council of Scientific and Industrial Research (CSIR) and the Indian Space Research Organization (ISRO). His postdoctoral fellowship at the HySA Systems Competence Centre, University of the Western Cape, South Africa, further broadened his research into high-temperature PEM fuel cells and electrocatalyst development. With more than 15 years of experience, Dr. Natarajan has established a strong interdisciplinary research portfolio across electrochemical energy systems, carbon dioxide electroreduction, glycerol and seawater electrolysis, photocatalytic hydrogen production, and environmental remediation. He has led multiple funded research projects on carbon capture, nanomaterials, electrochemical water treatment, and energy storage technologies. A prolific scholar, he has authored, contributed to several publications and international conferences across Asia, Europe, Japan and Africa. He also contributes extensively to academic development and accreditation efforts, serving on ABET, NCAAA, Jahezia Exam Supreme Committees. Dr. Natarajan currently supervises Master's theses on frontier topics in renewable energy and electrochemical systems and continues to drive innovation through collaborative research, education, and industry engagement.

ISBN: 978-93-92104-14-5

About **Keynote Speaker**

Dr. Hamad Alhumoudi

Head of the Department,
Department of Accountancy,
College of Administrative and Financial Sciences, Saudi Electronic University,
Riyadh, Saudi Arabia

Dr. Hamad Alhumoudi is an Assistant Professor at Saudi Electronic University, Saudi Arabia. He hold PhD in Accounting from Essex University, UK. Currently, he is the Head of Accounting Department at Saudi Electronic University.Dr. Alhumoudi has authored or co- authored more than 20 peer-reviewed papers. His research interest is in the area of Management Accounting and control system, Corporate Governance and Digital Accounting.

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About **Keynote Speaker**

Dr. Prakash Singh

Associate Professor,
Department of E-Commerce,
College of Administrative and Financial Sciences, Saudi Electronic University,
Riyadh, Saudi Arabia.

Dr. Prakash Singh is an Associate Professor in the E-Commerce department at the College of Administrative and Financial Sciences, Saudi Electronic University, Saudi Arabia. He earned his PhD in Marketing Management from Savitribai Phule Pune University, Pune, India in 2016. Dr. Singh has authored more than 23 research papers in prestigious journals indexed in Scopus, ABDC, ABS, and Web of Science. He has completed four funded research grants, two research grants in progress, authored and published six case studies, authored one book, five book chapters, published one Indian copyright, awarded one Indian patent based on his PhD work and four Indian patents are under process. With over ten years of teaching experience five years in India and five years in Saudi Arabia, Dr. Singh has taught students from 10 nationalities namely, India, Poland, Mexico, Nepal, Bangladesh, Jordan, Yemen, Bahrain, United Arab Emirates, and Saudi Arabia. His research interests encompass Digital Entrepreneurship, Consumer Behaviour, E-Learning, Mobile Commerce, Customer Engagement, Digital Innovation, Social Media Marketing, and Metaverse. He has delivered guest sessions as a keynote speaker and conducted research workshops for various universities from India, Malaysia, Saudi Arabia, and the United Kingdom. He has mentored more than 1000 students as an academic advisor, guided more than 100 students as a project supervisor, acted as a peer reviewer for more than 10 reputed journals, a Quality matters certified Peer Reviewer Course and expertise in Program accreditation and quality assurance.

ISBN: 978-93-92104-14-5

About **Keynote Speaker**

Dr. J Emerson Raja

Associate Professor,
Assistant Professor in the Faculty of Engineering and Technology,
Multimedia University (MMU),
Malaysia.

Ts. Dr. J Emerson Raja (Ph.D.) is currently an Assistant Professor in the Faculty of Engineering and Technology at Multimedia University (MMU), Malaysia. His technical expertise centres around applying soft computing techniques to monitor the health of machines. He was honoured with the notable commendation award by his alma mater, SRM University, India in conjunction with its Alumni Day on 12 March 2017. He was also honoured with the best executive award and group CEO merit award for the year 2014 from TM, the leading integrated telecommunication company in Malaysia. He has co-authored 3 books, Modeling Intelligence: Computational Techniques in Cognitive Systems published by Amazon in August 2025, A Textbook of Practical Neural Networks a kindle Edition by Amazon in July 2025 and C Programming for beginners, published by Pearson (Malaysia) in 2009. He has been a recipient of the excellent teaching award four times, for the year 2012, 2013, 2016 and 2024 from the president of Multimedia University, Malaysia. He was also the recipient of the best research poster award in the MMU-Infineon technical symposium 2011. Dr. Emerson Raja received his bachelor's and master's degrees in Computer Science and Engineering from University of Madras, India in 1989 and 2001 respectively. His PhD degree was awarded by MMU, Malaysia for his research on "Intelligent Machine Condition Monitoring" in 2014. He has conducted successfully the Malaysian Government funded MTCP training program for 15 international participants form 14 August to 25 August 2017 at MMU. He was one of the speakers of the "International Teaching Week" at Hof University of Applied Sciences, Germany in June 2013. As an SENIOR member of IEEE, he has actively contributed as invited speaker in several technical symposiums arranged by IEEE Signal Processing Society of Malaysia. He had provided key-note speeches in many International Conferences in Malaysia, India, China and Dubai. He has been invited twice as a guest speaker in MAL technical & innovation symposium on 21 November 2013 and 30 October 2014 at Infineon, a German based company in Malaysia. He was also awarded the silver medal by the Ministry of Higher Education, Malaysia, for his poster in the Innovative Practices in Higher Education Expo 2014 (I-PHEX 2014). Given a talk on "Peer Tutoring in Higher Education" at ASAIHL Conference, Tokio Japan in March 2018. He has been invited to Chonnam National University, South Korea, for their international summer session 2018, as international visiting scholar. He had given a talk on "Digestive health" at Gwanju International Centre, South Korea on 21st July 2018. He had also given the same talk on Digestive Health at Australian Radio SBS Tamil (2018) and it is available online. Being a HRDF certified trainer, he has delivered several talks and seminars on soft computing and adaptive signal processing topics.

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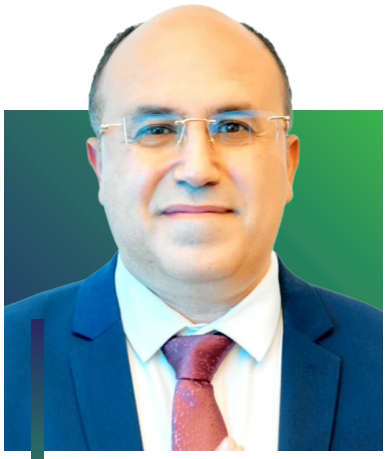
About **Keynote Speaker**



Dr. Haitham Saad Mohamed Ramadan

Institute of Hydrogen Storage (ISTHY), France.

Dr. Haitham Saad Mohamed Ramadan is a distinguished Professor of Electrical and Computer Engineering at the Faculty of Engineering, Zagazig University, Egypt, and currently serves as Test and Certification Manager at ISTHY, France. With over 15 years of research experience, he is recognized for his significant contributions to renewable energy systems, electric vehicles, smart grids, hydrogen energy, and multi-physical system modelling. His research excellence is reflected in an impressive h-index of 37, supported by over 120 publications, including 88 journal papers and 35 conference papers. Dr. Ramadan has played a leading role in multiple international collaborations, serving as Principal Investigator for two major French- Egyptian projects under the PHC IMHOTEP program and Co-Principal Investigator for a French-Ukrainian PHC DNIPRO project, focusing on hydrogen storage technologies, renewable grid interconnections, and electric vehicle integration. Beyond his research, Dr. Ramadan has demonstrated outstanding leadership in academic and professional communities. He has chaired and co-chaired several international conferences, including the ICEREGA and EMFC series, and has served as Guest Editor for high-impact scientific journals. His technical expertise spans renewable energy optimization, fuel cell diagnostics, and energy management systems for sustainable applications. Fluent in French, English, and Arabic, Dr. Ramadan continues to bridge academia and industry through innovation and collaboration, contributing significantly to advancing sustainable energy technologies and intelligent energy systems.

ISBN: 978-93-92104-14-5

About **Keynote Speaker**

Dr. Mohammed Aseeri

Chief Researcher,
King City for Science and Technology
(KACST), Saudi Arabia.

Chief Researcher and Professor of Research at the Institute of Future Communications and Wireless Sensing within the Future Economies Sector at King Abdulaziz City for Science and Technology (KACST). Co-Founder and Vice Chair of the Saudi Society for Scientific Research and Innovation. Specializes in developing innovative and intelligent electronic systems, with extensive experience designing sustainable resource management solutions across sectors such as environmental and security. He serves as a Principal Investigator at the Joint Center of Excellence for Microwave Sensing Technologies at the University of Michigan, USA. Non- resident consultant at the Prince Sultan Center for Defense Studies and Research, and Adjunct Professor at Prince Sultan University. Holds multiple professional certifications, including Consulting Engineer from the Saudi Council of Engineers, Project Management Professional (PMP) from PMI, CCMP from ACMP, and KPI certification from George Washington University, USA. Visiting researcher at the Australian National University (ANU) and the University of Canberra (UC). Published numerous research papers in international journals and conferences, as well as several patents. Recipient of numerous national and regional innovation awards. Author of several books, including Innovation: The Engine of Sustainable Development. Founded more than three million-dollar startups contributing to the growth of the national innovation ecosystem. Opinion writer and analyst for Al-Eqtisadiah and Al-Riyadh newspapers.

ISBN: 978-93-92104-14-5

About **Keynote Speaker**

Saravanan Venkataraman

College of Technology and Business
ELM University, Saudi Arabia.

Prof. Saravanan Venkataraman is a distinguished academic and researcher in Computer Science, specializing in Artificial Intelligence (AI), Machine Learning, and Software Engineering. He earned his B.Sc. in Mathematics from the University of Madras (1996), MCA from Bharathiar University (1999), and Ph.D. in Computer Science (2004), focusing on automated and unified data mining using intelligent agents. With over 25 years of teaching and research experience, he has made substantial contributions through 100+ publications in reputed Scopus and ISI-indexed journals and has supervised 18 Ph.D. scholars. Prof. Saravanan has presented at several national and international conferences and successfully completed two funded research projects in collaboration with Majmaah University and King Abdulaziz City for Science and Technology, Saudi Arabia, worth $41,500.

He has held prominent leadership positions such as:

> Professor & Head, Department of Computer Applications, Karunya University, Coimbatore
> Director, Computer Applications, Dr. NGP Institute of Technology, Coimbatore > Dean, Computer Studies, Dr. SNS Rajalakshmi College of Arts & Science, Coimbatore
> Vice Principal (Academic), Faculty of Science & Humanities, SRM Institute of Science & Technology, Chennai

An accomplished academic leader, he has played a key role in developing OBE curricula, implementing Campus Management Systems (ERP), and facilitating MOUs for international collaborations and research exchanges. His expertise includes academic regulation systems, NAAC/NBA/ABET accreditation processes, and the Choice-Based Credit System (CBCS). He is a Senior Member of IEEE and a life member of the Computer Society of India, Indian Society for Technical Education, Indian Association of Research in Computing Sciences, and International Association of Computer Science and Information Technology. With over 550 Google Scholar citations (h-index 9, i-index 7), Prof. Saravanan continues to inspire through his research excellence, mentorship, and academic leadership in advancing computing education and innovation globally.

ISBN: 978-93-92104-14-5

About **Session Speaker**

Dr. Amar Johri

Assistant Professor,
College of Administrative and Financial Sciences, Saudi Electronic University,
Dammam, Saudi Arabia.

Dr. Amar Johri has been an Assistant Professor in the College of Administrative and Financial Sciences at Saudi Electronic University, Kingdom of Saudi Arabia, since September 2019. He has more than 18 years of academic experience. He obtained his doctorate (PhD) from Graphic Era University, Dehradun, Uttarakhand, India. His research interests include financial services, financial markets, banking, investment, accounting, and general management. He has published around 60 research papers in national and international journals (including Scopus Q1, Q2, Q3 and Q4 indexed journals, Web of Science: SSCI, SCIE, Q1, Q2, Q3, Q4 & ESCI journals, ABDC A and ABS Rank 1 category journals, and Proceedings of International Conferences of repute) and has presented around 30 research papers in national and international conferences. He has completed two research projects as a principal researcher and one as a co-researcher. He is also working on a few more research projects. He also has various chapters in Scopus- indexed books. He has been the chair of the technical sessions and honored as a chief guest (valedictory session) at the international conference. He has also authored an accounting book. He is an editorial board member of various reputed journals, including Web of Science and Scopus-indexed journals. He is also the book editor for various Scopus-indexed books. He delivers and conducts sessions on financial planning, financial literacy, investment decisions, corporate finance, accounting information systems, corporate accounting, and Microsoft Excel and its use in accounting, finance, and statistics calculations. He is the reviewer and article editor of various reputed journals, including Web of Science and Scopus-indexed journals, and has reviewed more than 50 research papers. He has also examined PhD theses for universities as an external examiner. He also serves as an external academic expert to review the program structure. His area of teaching interest includes finance, accounting, and taxation.

ISBN: 978-93-92104-14-5

About **Session Speaker**

Dr. Abdullah A. Alakkas

Associate Professor,
Department of Accountancy,
College of Administrative and Financial Sciences, Saudi Electronic University,
Jeddah, Saudi Arabia.

Dr. Abdullah Alakkas is an Associate Professor in the Department of Accounting at the College of Administrative and Financial Sciences, Saudi Electronic University. He holds a Ph.D. in Accounting, with a specialization in corporate governance and ownership structure in listed company in Saudi Arabia. With over a decade of academic and professional experience, Dr. Alakkas has made significant contributions to the field of accounting education and research in Saudi Arabia. He has taught various undergraduate and postgraduate courses, supervised student research, and actively participated in academic development initiatives. He is the author of a well-received book on Accounting of Zakat Almal in the Saudi context and has published several scholarly articles in peer-reviewed journals, focusing on financial disclosure, accounting standards, and corporate governance. His research reflects a strong commitment to advancing accounting knowledge. In addition to his academic work, Dr. Alakkas has held several key administrative positions and played an active role in the governance and development of the university. He has been a member of various strategic and standing committees at the university, college, and departmental levels. Notably, he served as Vice Dean for Academic Affairs and later as Dean of the College of Administrative and Financial Sciences. Through these leadership roles, he has contributed significantly to academic planning, quality assurance, and institutional advancement. His efforts continue to support the goals of Saudi Vision 2030.

ISBN: 978-93-92104-14-5

About **Session Speaker**

Dr. Vijay Kumar

Professor,
Department of Applied Sciences,
School of Engineering & Technology,
Manav Rachna International Institute
of Research & Studies, Faridabad,
Haryana, India.

Prof. Vijay Kumar currently working as Professor at the department of Applied Sciences, School of Engineering & Technology, Manav Rachna International Institute of Research & Studies, Faridabad, Haryana INDIA. Prior to this, he worked as Professor & Head of the Department at the same institution. His doctorate in Statistics was awarded by Maharishi Dayanand University (State Government University), Rohtak, Haryana, India. He graduated with a B.Sc. from University of Jammu, Jammu, India, and an M.Sc.(Mathematics) from H. N. B. Garhwal University(Central University), Srinagar, Uttaranchali. Dr. Kumar holds life membership in Indian Society of Information Theory and Applications(ISITA), and Quality Circle Forum of India. His research interests include: Fuzzy Information Theory, Generalized Fuzzy sets, Decision Sciences, and Fuzzy information theoretic measures. He has successfully supervised the research work of 5 Ph.D scholars and published more than 70 research articles research articles, book chapters, conference proceedings, and books. Dr. Kumar was invited as resource person in various conferences, FDPs and workshops. The governments of Haryana gave funding to organize conference, workshop and expert lecture in totaling about Rs. 3 lakhs.

ISBN: 978-93-92104-14-5

About **Session Speaker**

Dr.Judilynn L. Niedo-Solidum

Professor VIII, University of the Philippines Manila &
President, UNIFFIED Manila Plus Chapter &
Vice President Externals,UNIFFIED Philippines &
Vice President, AHEdMRI, Philippines.

Dr. Judilynn L. Niedo-Solidum is a pharmacist, educator, and researcher dedicated to advancing public health through science and community engagement. Her work focuses on environmental toxicology, pharmacy education, and improving food safety standards. She has contributed to numerous publications and collaborative initiatives both locally and globally. Passionate about accessible healthcare, she advocates for early cancer screening by supporting community-based laboratory services—a vital step in helping women gain timely diagnosis and better chances of survival. Her efforts reflect a quiet commitment to equity, compassion, and meaningful impact.

ISBN: 978-93-92104-14-5

About **Session Speaker**

Dr. Nirma Sadamali Jayawardena

Assistant Professor,
Department of Marketing,
University of Bradford,
United Kingdom.

Dr. Nirma Sadamali Jayawardena is an Assistant Professor in Marketing at the University of Bradford, UK. She completed a BSc in Business Management (first-class honours) from NSBM Green University, Sri Lanka, and an MBA in International Business from the University of Colombo, Sri Lanka. She completed her Graduate Diploma in Business Research and Ph.D. in Marketing from Griffith University, Australia. Her research interests include consumer psychology, consumer social cognition, digital video advertising, and experimental research. She has published in prestigious journals and conferences and is a recipient of multiple awards, grants and scholarships.

ISBN: 978-93-92104-14-5

About **Session Speaker**

Dr. Syed Akmal

Course Coordinator,
E-Supply Chain Management &
Assistant Professor, Exam Coordinator,
College of Administration and Finance,
Riyadh, Saudi Arabia.

Dr. Syed Akmal is a certified professional in supply chain management SCM-Pro and Quality Matters (QM). He has spent more than a decade with leading MNCs in the teaching and corporate world. Since 2014, he has been working as an Assistant Professor at Saudi Electronic University, Kingdom of Saudi Arabia, a premier blended learning university in the Middle East. He has written several papers on subjects ranging from Supply Chain Management to e-commerce, digital marketing, technology, and CRM, and has been published in international journals indexed in Web of Science, SCOPUS, and ABDC. He launched his web portal, based on education & technology, and has professionally survived working at the intersection of technology and marketing. He has a lifetime membership and association with ISTE (Indian Society for Technical Education). At his present profile in Saudi Electronic University Dr Syed Akmal is also a Core team member for the Exam Committee and represents College as a College Exam Coordinator for Riyadh-Male branch, as well as, Core team member at the departmental for National Center for Academic Accreditation & Evaluation (NCAAA).

ISBN: 978-93-92104-14-5

About **Session Speaker**

Dr. Muhammad Nadir Shabbir

Xi'an University of Finance and Economics, China.

Dr. Muhammad Nadir Shabbir is Assistant Professor of Economics at the School of Finance and Economics, Xi'an University of Finance and Economics, Xi'an, China. He holds a Ph.D. in International Trade and Economics from the School of International Trade and Economics, Central University of Finance and Economics (CUFE), Beijing, earned under the Chinese Government CSC Scholarship (2019-2023), preceded by an M.Phil. in Econometrics from the Pakistan Institute of Development Economics. His research interests span international trade policy, innovation, sustainable development, climate change, green GDP, and governance. Dr. Shabbir has published in leading journals such as RIBAF, Sustainability, Research in Economics, PLOS ONE, Risk Management and Journal of Applied Economics. He has also contributed chapters to volumes including Geo-Economics in South Asian Environment and forthcoming work on industrial impacts on climate change. His recent studies investigate trade policy uncertainty, green innovation, ESG disclosure, financial crises, and the interplay between institutional quality and technological diffusion across developed and emerging economies.

ISBN: 978-93-92104-14-5

About **Committee Members**

Conference Chair

Dr. Neyara Radwan
Industrial Management Dept., Liwa University Abu Dhabi, UAE &
Mechanical Department, Faculty of Engineering, Suez Canal University, Egypt

Scientific Committee

Dr. Nidhi Oswal
Assistant Professor, College of Business, Liwa University, Abu Dhabi, UAE

Dr. Heba Eldib
Assistant Professor, College of Media and Public Relations, Liwa University, Abu Dhabi, UAE

Dr. Hikmat Ullah
Assistant Professor, Department of Information Technology, Liwa University, Abu Dhabi, UAE

Dr. Ahmed Elngar
Associate Professor & Head, Department of Computer Science at FCAI, Beni-Suef University, Beni-Suef, Egypt

Dr. Mohammad Odeh
Associate Professor, Department of Finance, Liwa University, Abu Dhabi, UAE

Dr. Adnan Khalid Jawabri
Assistant Professor, Department of Business, Liwa University, Abu Dhabi, UAE

Dr. Salman Saleem
Associate Professor, Department of Maths, King Khalid University, Abha, Saudi Arabia

Dr. Rouhi Samar Faisal
Assistant Professor, Department of Business, Liwa University, Abu Dhabi, UAE

Dr. Rania Lampou
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ISBN: 978-93-92104-14-5

ISBN: 978-93-92104-14-5

Abstract's **Index**

ISBN: 978-93-92104-14-5

ISBN: 978-93-92104-14-5

ISBN: 978-93-92104-14-5

Comparative Analysis of Mesh and Torus Topologies versus Gaussian Connection Models in Wireless Sensor Networks

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Wireless Sensor Networks (WSNs) are critical for modern applications such as environmental monitoring, industrial automation, and smart cities. Traditional network topologies like mesh and torus offer reliability and redundancy but face limitations including high energy consumption, edge congestion, and rigid structure, especially in large-scale deployments. Gaussian connection models address these challenges by adopting a probabilistic and adaptive clustering approach. Nodes connect based on a Gaussian distribution considering distance, energy level, and other metrics, enabling balanced load distribution, energy efficiency, and robust fault tolerance. Advanced algorithms such as LEGN and TEGN leverage Gaussian models to optimize cluster head selection and routing, significantly improving network lifetime and reducing packet loss and latency. Comparative analysis shows Gaussian models outperform mesh and torus topologies in scalability, energy efficiency, and adaptability. This paper highlights their advantages through algorithmic insights, implementation case studies, and performance comparisons, justifying Gaussian connection models as an optimal choice for next-generation WSNs. Future work will explore hybrid models and deeper reinforcement learning to further enhance performance.

Index Terms—Adaptive Clustering, Energy Efficiency, Gaussian Connection Model, Network Topology, Wireless Sensor Networks (WSNs)

ISBN: 978-93-92104-14-5

Optimized Strategy for Trace N-Nitrosamine Quantification in Chronic Medications: Protecting Patients Safety in Family Medicine

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N-nitrosamines (NAs) represent critical contaminants in pharmaceuticals, posing a significant genotoxic risk, especially in drug products used for the long-term management of chronic pathologies frequently prescribed in Family Medicine. Trace-level quantification (low parts-per-billion or parts-per-trillion) is essential for ensuring patient safety, yet complex drug matrices severely challenge traditional analytical methods. We introduce an Optimized Method Development Strategy (OMDS) utilizing sequential High-Resolution Mass Spectrometry (HRMS) data acquisition to provide the level of certainty required for rigorous clinical risk assessment. The workflow is built around two complementary modes: a comprehensive Screening Injection Radar (SIR), employing a full scan MS combined with wide-range fragmentation (e.g., all-ion fragmentation) for rapid screening and initial quantification; and a targeted Product Ion Confirmation (PIC) Scan, which leverages the accurate molecular mass to trigger highly selective, low-mass-window MS/MS events. This dual-acquisition system drastically improves the detection limit and minimizes false positives, ensuring unambiguous structural confirmation of NAs. The resulting OMDS is a sensitive, highly selective, and regulatory-compliant method designed to support pharmaceutical quality control, thereby providing Family Medicine practitioners with the necessary data to manage patient risks associated with contaminated chronic therapies.

ISBN: 978-93-92104-14-5

The Impact of Students' Perception of AI Tool on Their Preference in Accounting Major

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The rapid application of artificial intelligence (AI) in accounting has raised concerns about the replacement of accounting-related jobs, which may hinder students from choosing accounting as a major in higher education.

This study explores how AI cognition and knowledge affect high school students' views on the accounting major and experimentally verify the following hypothesis: Through practical learning with AI tools, students' perception of accounting can be shifted from repetitive bookkeeping work to strategic decision analysis, thereby enhancing their professional interest. We used a pre- and post-workshop questionnaire survey to assess the changes in students' career anxiety, job security, and ethical cognition after being exposed to AI applications. The results show that AI experience can significantly alleviate career anxiety and help students understand the role evolution of accountants from data entry clerks to data-driven consultants. In addition, students who have been exposed to AI tools are more likely to agree with the strategic value of accounting and their willingness to choose accounting as a major is significantly improved.

Index Terms—Artificial Intelligence, Accounting Education, Career Anxiety, Student Cognition, Ethical Considerations, Strategic Accounting

ISBN: 978-93-92104-14-5

AIGC-Driven Reproduction and Cultural Creative Design of China Chaozhou-Kejia Decorative Inlay Ceramic Patterns: A Case Study of the Xie Clan Ancestral Hall in Caizhilou, Puzhai Town, Fengshun County

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This study focuses on China Chaoshan-Hakka architectural ceramic mosaic decorative patterns from a cultural perspective, taking the Xie Clan Ancestral Hall at Caizhi Lou in Puzhai Town, Fengshun County as a case study. It conducts an in-depth exploration of the cultural connotations, artistic characteristics, and application potential of these traditional patterns in cultural and creative design. By integrating schema theory with Generative Artificial Intelligence (AIGC) technology, the research digitally reconstructs ceramic mosaic patterns and employs AIGC-assisted methods to innovate cultural product designs. Empirical validation through case studies demonstrates the feasibility and effectiveness of this approach. The study not only enriches theoretical research on China Chaoshan-Hakka architectural ceramic mosaics but also provides innovative design practices for the integration of traditional craftsmanship with modern technology.

ISBN: 978-93-92104-14-5

The Application of Artificial Intelligence in Libraries for Promoting Lifelong Learning in Higher Education for Sustainable Development in Kano State Nigeria

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The paper examines the application of Artificial Intelligence in providing Library' Services for promoting lifelong learning in higher education Mixed research methodology is used while a survey research design was employed for the study, with 700 population and 313 sample size of respondents. The questionnaire was used in data collection and interviews for library staff. The findings indicate that library used artificial intelligence to provide services such as user instruction program which is the most utilized service for effective learning (With 89%) and selective dissemination of information 70%, while lending services 50%. It was recommended that users' awareness of the availability of resources, use of artificial intelligence for learning should be enhanced and regular seminars and workshops for user education in order to support lifelong learning.

Index Terms—Libraries; Artificial Intelligence; Lifelong learning; Libraries; Higher Education; Sustainable Development Nigeria

ISBN: 978-93-92104-14-5

Generational Analysis on Sustainable Consumption: A Systematic Literature Review for Theory and Practice Innovation

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The rise of sustainability studies over the past twenty years has drawn the attention of both academics and practitioners. This research examines the existing literature on sustainability from the perspective of different consumer generational cohorts. Using the TCCM framework and the PRISMA protocol, we synthesize existing knowledge and describe how it has been done. Through this literature review, we identify research gaps, including weak theoretical foundations, limited regional coverage, and the understudied economic and social dimensions of sustainability. This study emphasizes the significance of understanding generational differences in shaping sustainability-driven marketing strategies and addressing the ongoing value-action gap in consumer behavior. We propose a future research agenda that focuses on applying less commonly used theories, particularly in underrepresented regions, investigating emotional branding across generations, and examining the economic, environmental, and social dimensions of sustainability in various contexts and cross-cultural settings. This work provides a roadmap for researchers and practitioners to translate generational insights and behaviors into practical strategies that foster sustainable consumption and systemic change.

Index Terms—Sustainable Consumption, Consumer Behavior, Sustainability, Generational Cohorts

ISBN: 978-93-92104-14-5

Research Topic: Leveraging EdTech Tools for Psychological First-Aid and Resilience Building Post-COVID-19: A Case Study in Jeddah, KSA

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March 2020 marked a significant turning point globally for the entire education system. Despite the unprecedented challenges imposed by the pandemic, the education system has shown remarkable resilience, inspiring all involved stakeholders. Schools have adapted to new norms and embraced various options for homeschooling, including remote learning, which covers both synchronous and asynchronous formats, printed modules, blended learning, performance-based activities, and specialized infrastructures. As a result, the learning management system offers an efficient way to deliver education that aligns with the new standards. The main goal is to prepare educators and students for the new normal by reinforcing virtual connections through internet access and various learning platforms, while identifying the most suitable and reliable Learning Management Systems (LMS) and devices for students and teachers. Accordingly, schools have adopted both synchronous and asynchronous learning modes. Although challenging, these efforts have fostered greater understanding and empathy within the educational community. Schools are eager to welcome students back in the post-pandemic period, anticipating a return to normalcy; however, this transition remains difficult.

The post-pandemic period introduced many new challenges that schools had to face. Although a benefit, online classes have created a significant gap between understanding and teaching. The sudden shift from an isolated environment to an interactive space caused many difficulties, and the pandemic is thought to have negatively affected their mental and psychological health.

Thus, Psychological First Aid (PFA) should be practiced by teachers to offer vital human support and provide valuable, practical information. In addition, teachers should also utilize EdTech tools (such as Nearpod, Flashback Express, Meet, Facebook, Padlet, Google, Classera, Firefly, Screencastify, Airpano, Quiz, etc.) to promote efficiency and effectiveness. Meanwhile, using blended techniques during learning, which combines both offline and online modes, allowed students to adapt rapidly to both synchronous and asynchronous learning modes. Teachers should be able to deliver education on emotional health, social health, practical skills, and information. The current setup necessitates modifications to the flexible curriculum, with a greater emphasis on protecting the health of students, teachers, parents, and society. In these ways, it is revealed that EdTech Tools can perform this function and help make learning versatile and engaging, as they also can assist students and teachers in incorporating creativity into the learning process; thus, they can efficiently work within the new norms.

The significance of this research lies in its potential to influence the future of post-COVID-19 education, offering a promising outlook for the educational community.

Index Terms—EdTech Tools, Psychological First Aid (PFA), Post-COVID-19 Education, Student Mental Health, Blended Learning, Connectivism Learning Theory, Connectivism Model, Biopsychosocial Model, Synchronous/ Asynchronous, Leverage, Impact, Adaptive, Quantitative / Qualitative, Thematic Analysis

ISBN: 978-93-92104-14-5

Influence of the Vertical Subgrade Reaction Modulus (Kz) on the Mechanical Behavior of Buried and Semi-Buried Concrete Structures: A Parametric Study in Granular Soil Conditions

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The vertical subgrade reaction modulus (Kz, in $N \cdot m^{-3}$) of the soil is a key parameter controlling soil–structure interaction for buried and semi-buried concrete structures. This study investigates how variations in Kz influence the mechanical response of a high-performance concrete storage envelope founded on compact gravelly sand in Bechar, Algeria (harsh environmental conditions). The research approach combines experimental mechanical data, finite element simulations, and parametric analysis to evaluate the impact of Kz on displacements, stress distribution, and overall stability using a Winkler elastic foundation model. Results reveal that increasing Kz reduces global settlements but concentrates stresses locally, whereas lower Kz values increase deformations and potential instability. These findings emphasize the importance of determining soil stiffness parameters to achieve reliable design for partially buried concrete envelopes

Index Terms—Subgrade Reaction Modulus, Kz, Soil–Structure Interaction, Concrete Structures, Winkler Foundation, Buried Structures, Bechar Algeria

ISBN: 978-93-92104-14-5

The Role of Foundations in Building Sustainable Social Policies

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The impacts of digitalization and climate change, together with disasters, emerging social risks, and the growing need for a sustainable society, have increased the demand for voluntary cooperation and consensus at both national and global levels. The proliferation of "permacrises," the deepening of inequalities, the diminishing importance of the family, the rise of social vulnerabilities, the spread of extreme poverty, and demographic transformation have all intensified the responsibilities borne by the state. However, it is clear that such complex challenges cannot be resolved by the state alone. For this reason, the role of civil society organizations and foundations in supporting state policies carries strategic importance.

Sustainable social policies and the construction of social welfare rely on indispensable elements such as social solidarity, cooperation, consensus, economic contribution, and cultural harmony. In both the world and in Turkey, foundations—drawing on their powerful historical legacy—possess the capacity to strengthen social solidarity, uphold moral and ethical values, enhance social resilience, and foster a sense of unity, just as they did in the past. Thanks to their organizational flexibility, foundations can mobilize more quickly during times of crisis, providing tangible contributions to social cohesion and sustainable development. The determined stance of civil society during the humanitarian tragedy in Palestine, and its uninterrupted commitment to providing aid, serve as powerful examples of this potential. Foundations are able to fill gaps left by the state in times of hardship, reinforce social protection, and contribute effectively to poverty reduction, access to education and healthcare, and the protection of the family.

Turkey's historical tradition of foundations and the culture of solidarity rooted in Islam have been transmitted across generations, forming a strong foundation for building society. This legacy not only strengthens social solidarity and fosters national and moral unity, but also contributes to international cooperation and global consensus. In conclusion, for the development of sustainable social policies and the preparation of society for the future, foundations remain—just as they have throughout history—indispensable actors in meeting social needs and consolidating the spirit of unity.

Index Terms—Social Policy; Sustainability; Foundations

ISBN: 978-93-92104-14-5

Evaluation of Seismic Vulnerability and Rehabilitation of an Abandoned Two-Storey Building

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Structural Deterioration is the results of both gradual and unexpected damaging events. The modelling of structural deterioration has been shown to be great importance for decisions about maintenance and reconstruction of critical infrastructure. Ensuring structures undergo regular inspection and maintenance is crucial to avoid deterioration. The purpose of this study was to determine the effectiveness of the concrete jacketing method for fortifying a deteriorating two-storey reinforced concrete building that had been left unattended for over seven years. This building showed significant degradation, including reinforcement corrosion and concrete spalling. Also, it offers insights into the effectiveness of concrete jacketing for evaluating and retrofitting structures through a comprehensive analysis of critical structural components such as columns, beams, slabs, and footings. Additionally, pertinent documents including existing plans, geotechnical reports, and hazard assessments reports were gathered for a thorough assessment. The findings of the Rebound Hammer, Tensile, and Concrete Core Tests revealed inadequate material strength. The structural elements were also inspected by the researcher, revealing insufficient reinforcement and deviations from the approved plans. All test results were used in the building analysis using Non-Linear Static Analysis with Seismobuild Software. Based on the prepared retrofitting plans and cost estimates, the total retrofitting cost is Php1,122,607.50.

Index Terms—Non – Linear Static Analysis, Concrete jacketing Method, Rebound Hammer Test, Concrete Core Test, Retrofitting Techniques

ISBN: 978-93-92104-14-5

Prediction of Construction Materials Wholesale Price Index (CMWPI) with Inflation Effect through Box-Jenkins Autoregressive Integrated Moving Average (ARIMA)

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Construction Materials Wholesale Price Index (CMWPI) provides a vital tool for monitoring and managing economic aspects of Philippine construction industry. Studies consistently show that construction projects frequently exceed budget, with fluctuating material prices due to inflation being a primary cause. Despite this, the crucial role of the CMWPI in mitigating these risks is often overlooked. This study examined the fluctuating behavior of prices of eighteen (18) construction materials in the Philippines, utilizing the CMWPI and considering the impact of inflation. Results of Spearman's Correlation tests indicated that only six (6) materials, including common materials, such as Sand and Gravel, Cement and Lumber, exhibited a statistically significant positive correlation with inflation. Box-Jenkins ARIMA models, particularly the simple random-walk-with-drift model, effectively forecasted the price indices of thirteen (13) materials, though more complex models were necessary for others like Plywood and Metal Products. The models demonstrated strong goodness-of-fit and predictive accuracy for most materials, evidenced by high R-squared, low BIC and MAPE values. Projections for 2025 indicated further price increases for the majority of materials, particularly Concrete Products and G.I. Sheet. These projections were externally validated by stakeholders and were viewed favorably in terms of understanding, confidence, belief in its predictive ability, perceived relative accuracy, and sufficiency of detail. Generally, this study offers valuable findings for construction industry planners and stakeholders, enabling them to make informed decisions and develop strategies in response to the changing behavior of construction materials prices.

ISBN: 978-93-92104-14-5

Environmental Disclosure as a Moderator of Carbon Risk and Stock Returns in Indonesia's Energy Sector

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This study examines the moderating role of environmental disclosure in the relationship between carbon risk, stock returns, and institutional investor preference within Indonesia's energy sector from 2021 to 2024. Using panel data from energy firms listed on the Indonesia Stock Exchange, this research employs a quantitative approach with fixed-effect and moderated multiple regression models, utilizing 134 observations from 35 energy companies in Indonesia that publicly disclosed their carbon emission figures. A robustness test was also conducted in the form of a subsample analysis to ensure the consistency and reliability of the results. The findings reveal that stock returns have a significant positive effect on institutional investor preference, highlighting the continuing dominance of financial performance in investment decisions. In contrast, carbon risk shows no significant influence, indicating the limited sensitivity of institutional investors to environmental risks in a developing market context. Interestingly, environmental disclosure exerts a negative direct effect but acts as a positive moderator—strengthening the favorable impact of stock returns while mitigating the adverse effects of carbon risk. These results suggest that credible and transparent sustainability reporting enhances investor confidence, even in carbon-intensive industries. The moderating role of environmental disclosure demonstrates that sustainability information can serve as a strategic communication tool to balance profitability and environmental accountability. This study contributes to the growing ESG literature in emerging markets by providing empirical evidence from Indonesia, a developing economy facing dual pressures of energy transition and economic growth. Moreover, it offers practical insights for policymakers, firms, and investors aiming to align financial objectives with environmental considerations, thereby supporting the integration of sustainable finance in the country's capital market.

Index Terms—Carbon Risk, Stock Returns, Institutional Investor Preference, Environmental Disclosure, ESG, Sustainability Reporting, Energy Sector

ISBN: 978-93-92104-14-5

AI-Based Predictive Improvement of Energy Management Systems in UAE District Cooling Plant Using LSTM

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Evaluate the performance of the Energy Management System in District Cooling Systems operated by a UAE-based company through predictive modeling using Long Short-Term Memory networks. While existing EMSs often lack adaptability to local conditions, this study proposes a predictive model that uniquely integrates UAE-specific environmental variables: such as ambient temperature, humidity, and wet bulb temperature, with real-time operational data like chilled water flow rates, supply/return temperatures, and energy consumption. Using historical and operational data from the company's DCS plants, the study develops LSTM-based models to forecast electricity consumption, cooling load, and system demand for 2025 with high temporal resolution. The developed deep learning model achieved excellent predictive performance, with coefficient of determination R^2 above 0.90 for all key metrics, Electricity (0.9569), Chilled Water (0.9878), and kW/TR efficiency ratio (0.9009), and prediction errors below 6%. The models are evaluated using statistical accuracy metrics (R^2, MAPE), and their integration into EMS will be tested through a pilot testing. This research is designed to improve chiller scheduling, reduce peak energy loads, and improve energy efficiency. The predictive model delivers measurable improvements in energy consumption and system improvements contributing to the company's sustainability goals and offering a scalable solution tailored to the UAE's operational environment.

Index Terms—District Cooling Systems, Energy Management Systems, Artificial Intelligence, Machine Learning, Cooling Demand Forecasting, EMS Improvement, LSTM, XGBoost, and Energy Efficiency

ISBN: 978-93-92104-14-5

Data-Driven Approach Based on Generative AI Models For Crime Detection Under Safe City Paradigm

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A country's growth and success are majorly hindered by crime. Significant risks to city safety and security are also posed. Crime is contributed to by several factors, including poverty, flaws in the legal system, unstable economic conditions, and a lack of technological skills for investigating and identifying crimes. A new framework for crime detection and identification using deep learning and generative models is introduced by this study. Latent features are extracted from an available dataset using generative models, deep learning (DL), and machine learning (ML) techniques like transformers, Variational Auto-Encoders (VAE), Convolutional Neural Networks (CNN), and Principal Component Analysis (PCA). After feature extraction, K-means clustering is applied by us. The effectiveness of this clustering method is evaluated with well-known classifiers such as Random Forest (RF), Decision Tree (DT), Gradient Boosting (GB), and Naive Bayes (NB). A maximum accuracy of 0.9993 is achieved for the framework that employs VAE for feature extraction and RF as the classifier. The strength of the proposed framework is found in its unsupervised learning method, from which useful information is extracted from data without the need for labeled datasets. A data-driven approach is effectively used by deep learning and generative models to draw out features, which are then applied to detect crimes. Individual features in latent spaces are analyzed, and impressive performance is demonstrated by the VAE with an accuracy of 0.999.

Index Terms—Crime Detection, Deep Learning, Generative Models, Feature Extraction, Variational Auto-Encoder (VAE)

ISBN: 978-93-92104-14-5

Islamic Financial Innovation through Blockchain: Bridging Zakat, Takaful, and Sustainable Development

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This paper explores the potential of blockchain technology to enhance transparency, efficiency, and Sharia compliance in the management of zakat—Islam's obligatory form of almsgiving—and its integration into micro-insurance (takaful) schemes for financially excluded Muslim communities. Drawing on interdisciplinary research across Islamic finance, blockchain governance, and social development, the study proposes a conceptual framework, termed Takapool, which utilizes smart-contract protocols developed on Ethereum-compatible environments to record, verify, and distribute zakat contributions in accordance with Islamic jurisprudence. The prototype was designed using Solidity-based logic and simulated transaction flows, illustrating how programmable contracts can automate eligibility verification, equitable fund allocation, and transparent disbursement. This methodological approach demonstrates the feasibility of embedding Sharia principles within decentralized systems while addressing governance challenges such as traceability and accountability. By linking zakat-funded takaful mechanisms to blockchain-based trust architectures, the model contributes to ongoing debates on ethical fintech and sustainable finance. The paper situates this innovation within the broader objectives of the United Nations Sustainable Development Goals—particularly poverty reduction and inequality mitigation—and identifies Saudi Arabia as an optimal context for pilot implementation, given its regulatory advances in Islamic fintech and commitment to Vision 2030

Index Terms—Zakat, Blockchain, Smart Contracts, Takaful, Islamic Finance, Financial Inclusion, Sustainable Development Goals, Saudi Arabia

ISBN: 978-93-92104-14-5

Exploring the Sentiment Analysis of Twitter Posts for Decision Support System

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Social media platforms like Twitter and Facebook are the few powerful sources of communication that are booming among people to share their views and opinions on any topic or article. These opinions form a massive amount of unstructured data, which can be used to analyze public sentiment opinions, providing valuable information. This paper provides a comprehensive sentiment analysis on Twitter reviews using Long Short-Term Memory (LSTM). The data collected is the Twitter reviews on the Train's data and their management. Initially, preprocessing techniques were used for text cleaning, removing stop words, and tokenization to enhance data quality. Data augmentation and pre-trained GloVe embeddings are also employed. The proposed system leverages more advanced architectures of deep learning, especially LSTM, which shows superior performance because of its ability to capture long-term dependencies in sequential data. Results obtained from the training and testing of models built on the data provide the performance overview that the LSTM model outperformed as compared to Logistic Regression, SVM, and CNN methods, and we evaluated the different performances of the metrics like accuracy, precision, recall, and F-score. These outputs emphasize the robust deep learning approaches for analyzing views and sentiments on social media, providing valuable insights useful for improving customer satisfaction and maintaining service quality in Trains.

Index Terms—Social Media, Sentiment Analysis, SVM, Logistic Regression, CNN, LSTM, Removing Stopwords, Tokenization, GloVe Embeddings, Capture Long-Term Dependencies, Results, Accuracy, Customer Satisfaction

ISBN: 978-93-92104-14-5

Mobile Banking Adoption: An Exploratory Study Among Moroccan Consumers

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Due to the recent rapid expansion of the Internet . Mobile banking is considered to be one of the most useful ways to offer financial services to the customers. Companies are rapidly digitizing their activities, entering a new virtual environment and applications. Indeed, consumers now have access to a new electronic channel by utilizing the M-banking services. Furthermore, This study aims to identify the factors influencing behavioural intention and adoption behaviour of M-banking by Moroccan customers. The methodological basis includes the theoretical principles of marketing and service management, as well as planned behavior theory and the technology acceptance model. The research methods of factor analysis and structural equations will be applied. The empirical basis of the study is the results of a customer survey in eight Moroccan banks. A review of previous literature will be used to establish hypotheses, an exploratory factor analysis. In fact, to analyze the significant factors affecting the adoption of M-banking services. We intend to adopt a structural equation modeling approach to analyze the relationships between variables.

Index Terms—Mobile Banking, Behavioural Intention, Adoption Behaviour, Technology Acceptance Model, Moroccan Consumers, Exploratory Factor Analysis, Structural Equation Model

ISBN: 978-93-92104-14-5

Enhancing Student Awareness And Innovative Skills Integrating Design Thinking In Entrepreneurship Education For Industry 5.0

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With technological advancements and a rising unemployment rate, the imperative for students to augment their skill sets becomes increasingly evident. Entrepreneurship emerges as a paramount career avenue, offering an excess of job prospects. Consequently, educational institutions face challenges to equip students with Entrepreneurship Education Programs (EEP) that resonate with the transformative demands of Industry 5.0. The main objective of this research is to apply the Design Thinking (DT) approach in EEP to help students gain awareness of and understand the sequence of steps to develop their ideas as entrepreneurs. This research explains the DT process and the methods to apply in entrepreneurship to develop students' entrepreneurial skills. The research involved 40 students and found that 82.5% were aware of the DT process in entrepreneurship after undergoing EEP training. This research underscores the transformative potential of integrating entrepreneurial skills and DT methodologies within education, aligning students with the demands of Industry 5.0. It emphasizes the importance of cultivating adaptable, innovative mindsets to navigate the dynamic industrial landscape and foster entrepreneurial success.

Index Terms—Cognitive, Design Thinking, Entrepreneurship, Entrepreneurship Education Program, Industry 5.0, Innovation

ISBN: 978-93-92104-14-5

Accuracy of AI Systems in Detecting Dental Age Estimation using Radiograph

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Background: Dental age estimation is critical in forensic, clinical, and legal contexts. Traditional methods relying on radiographic analysis have inherent limitations, including subjectivity and large error margins. With the birth of artificial intelligence (AI), especially machine learning (ML) and deep learning (DL), the accuracy and efficiency of dental age estimation have seen promising advancements.

Objective: This systematic review aimed to evaluate the accuracy of AI-based systems in estimating dental age compared to conventional methods using radiographs.

Methods: A thorough literature search was performed utilizing several databases—PubMed, Scopus, EMBASE, Medline (Ovid), EBSCO, and Web of Science—for articles published from 2020 to 2024. Studies were selected according to predefined inclusion criteria centered on AI-driven dental age estimation utilizing radiographs. A total of 19 cross-sectional studies, encompassing 101,387 participants from 13 different countries, were included and evaluated by using an altered version of the Critical Appraisal Skills Programme (CASP) checklist.

Results: Most studies utilized panoramic radiographs (OPGs) and cone-beam computed tomography (CBCT), applying AI models such as convolutional neural networks (CNNs), k-nearest neighbors (KNN), support vector regression (SVR), and gradient boosting algorithms. Deep learning models consistently outperformed traditional methods (Demirjian, Willems, Kvaal) in terms of mean absolute error (MAE), accuracy, and R^2 values. The lowest MAE reported was 0.261 years, and the highest R^2 value reached 0.955, indicating high predictive performance.

Conclusion: AI-based models, particularly those utilizing deep learning, demonstrate superior accuracy and consistency in dental age estimation compared to traditional techniques. These advancements present a promising shift toward automated and objective age assessment methods in forensic and clinical dentistry.

Index Terms—Artificial Intelligence, Dental Age Estimation, Radiography, Deep Learning, Machine Learning, Forensic Dentistry

ISBN: 978-93-92104-14-5

Shift in Gender Roles in Saudi Arabia as Part of the Vision 2030 Strategy

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This study examines the evolution of gender roles in the Kingdom of Saudi Arabia within the context of Saudi Vision 2030, with a particular focus on the increasing participation of women in the labor market and the socio-cultural reforms that accompany this transformation. Vision 2030 seeks to establish a vibrant, diversified economy and an inclusive society by fostering human capital development, economic diversification, and social progress, with gender equality positioned as a central pillar of the national modernization agenda.

The research adopts a qualitative document analysis methodology, supplemented by quantitative data from governmental reports, policy documents, and academic literature published between 2016 and 2025. The analysis specifically explores the evolving roles of women in key sectors such as education, tourism and hospitality, management, as well as broader socio-cultural developments.

The findings indicate a significant increase in women's participation in the workforce, with female labor market engagement reaching 36% in 2024—well ahead of the original 30% target for 2030. Additionally, the female unemployment rate declined between 2022 and 2024. Education has played a critical role in this shift, with women comprising 53.9% of higher education students and 28% of university department heads. In the rapidly growing tourism and hospitality sector, women now account for 45% of employees and own nearly half of the accommodation and food-service businesses. Parallel advancements are also evident in healthcare and entrepreneurship.

Legal reforms, including the lifting of the driving ban, revisions to guardianship laws, and the introduction of anti-discrimination measures, have further institutionalized gender inclusivity. These findings suggest that Vision 2030 has initiated a profound redefinition of women's roles, both economically and socially, positioning gender empowerment as both a key driver and an outcome of Saudi Arabia's broader modernization strategy.

Index Terms—Saudi Vision 2030, Women's Empowerment, Gender Role Transformation, Women, Education, Management, Hospitality, Cultural and Social Transformations, Economic Diversification

ISBN: 978-93-92104-14-5

Generative AI and Student Academic Output: Perspectives on the Evolving Human Element in Design Education

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This preliminary case study investigated the attitudes and beliefs of professors in design fields regarding the evolving roles of students and professors in the era of the "Generative-AI Revolution." Three semi-structured interviews were conducted with professors in the field of interior design at a Saudi Arabian university that follows an American-based accreditation system and student-centered approach. Participants were selected based on their experience in both academia and the design industry. Interview prompts invited participants to examine the ways in which generative AI (GenAI) is used by students and how it may be both potentially detrimental and beneficial to students' creative output. Prompts also invited participants to discuss the role of GenAI in both students' academic and future careers in the design field. Thematic analysis of transcribed interviews indicated that participants primarily view GenAI as a useful tool that is able to perform mundane tasks more efficiently than manual work alone. By using GenAI, design students are better able to better able to use their time exerting cognitive energy to embrace the application of their own creativity. All interviewees focused strongly on the essential nature of human creativity in the continuation of design fields. Participants also emphasized the importance of fostering critical thinking skills in students while guiding them towards their future careers in a world of rapidly changing and ever-evolving GenAI.

Index Terms—Generative Design, Generative AI, Interior Design, Attitudes and Beliefs, Critical Thinking, University Professors, University Students

ISBN: 978-93-92104-14-5

Peer Versus Generative AI Individualized Feedback: The Advantages of Generative AI as a Teaching Tool on the Writing Skills of EFL University Students

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This action research examined the impact of generative artificial intelligence (AI) as a teaching tool on the writing outcomes of university students enrolled in an introductory academic English writing course. Outcomes were assessed through analysis of handwritten essays included as a portion of the course's final exam. All participants were taught by the same instructor using the pedagogical method of inquiry-based learning. Students were of Saudi Arabian descent with Arabic as their native language and English as a foreign language (EFL). Participants attended a university in Saudi Arabia following a student-centered approached based on that of a university in the United States. Participants included 130 female students who completed the course prior to the release of the popular generative chatbot, ChatGPT, and 130 female students who completed the course following the release of this generative AI program. All course sections included in-class spelling and grammar workshops prior to the submission of assigned academic essays; however, students enrolled in the course prior to the release of ChatGPT completed a peer review activity whereas students enrolled in the course following the release of ChatGPT completed an AI-based activity using individualized feedback provided by a generative AI program. Following each type of activity, students submitted a reflection paragraph concerning areas of improvement in the grammar and spelling of their writing. Paired sample t-tests indicated that writing outcomes were significantly higher in students who received individualized feedback through the use of a generative AI program when compared to those who did not have access to AI tools. Findings suggest that EFL students in academic writing courses may benefit from the use of AI-generated individualized feedback in a supervised in-class activity.

ISBN: 978-93-92104-14-5

Surplus, Shortage and Equilibrium: Exploring the impact of Talent Supply-Demand Dynamic on Employee Compensation and Rights in Global Labour Markets

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This paper examines this entangled relationship between the forces of the labor market (particularly, surplus, scarcity and equilibrium) and how it affects the pay and rights of employees in the international workforce. This study incorporates the information presented in past research, publications, and theoretical models published in the period between 2020 and 2025 using qualitative and descriptive analytical methods. The results demonstrate that the trends of structural imbalances due to technological advancement, demographic changes, and post-pandemic recovery are gaining momentum in the world of the labor market. Skilled worker shortages will increase wages and worker rights, whereas excesses will often reduce wage growth and negotiation power. The contemporary frameworks applied in the analysis to explain such tendencies include monopsony power, tightness in labor and inefficient turnover models. It concludes that in order to maintain this balance, policies are required that will strengthen reskilling programs, enhance the protection of workers, and enhance labor market clarity. The results contribute to the current knowledge on the influence of supply and demand on the justice, productivity, and sustainability of contemporary employment systems.

Index Terms—Dynamics of the Labor Market, Talent Supply And Demand, Wage Equilibrium, Employee Compensation, Worker Rights, Labor Shortages, Labor Surpluses, Global Labor Markets, Monopsony Theory, Workforce Policy

ISBN: 978-93-92104-14-5

Agro-Ecological Practices in Oil Palm Nursery Production using Laying Hen Manure as an Alternative to Chemical Fertilizers

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Urea is becoming increasingly expensive, although its intensive use degrades and destroys soils and the environment. This pollution, combined with that of laying hen manure from farm waste, has become a concern. However, this manure could help to better produce oil palm nursery compared to the use of urea. This poster aims to promote the use of laying hen manure as a source of organic fertilizer as an alternative to urea (chemical fertilizer) in the vegetative growth of oil palm at the juvenile stage. To do this, a mixture of one wheelbarrow of manure for fourteen wheelbarrows of potting soil and a mixture of one wheelbarrow of manure for five wheelbarrows of potting soil were used as substrate for the pre-nursery and the nursery, respectively. The urea application protocol was maintained according to standard practices. The results showed that in the pre-nursery, laying hen manure achieved the best performance in all the growth parameters studied. In the nursery, both types of fertilizers showed statistically identical values in terms of leaf number and diameter collar. On the other hand, laying hen manure gave better results in terms of the length of the longest leaf. It should be noted that the use of laying hen manure as a source of organic fertilizer significantly improves the growth of oil palm at the juvenile stage. It thus represents a viable and sustainable alternative to chemical fertilization.

ISBN: 978-93-92104-14-5

Learning and Artificial Intelligence for Landslide Susceptibility Mapping: A Comprehensive Review

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Landslides represent a significant hazard to human life, infrastructure, and the environment, particularly in regions susceptible to intense precipitation, seismic activity, and land-use change. Accurate landslide susceptibility mapping (LSM) is essential for effective disaster risk reduction and early warning. Conventional statistical and heuristic approaches often fail to adequately model the complex, nonlinear interactions among environmental factors influencing landslide occurrence. This review examines recent advances in machine learning (ML) and artificial intelligence (AI) techniques—including Random Forest (RF), Support Vector Machines (SVM), Artificial Neural Networks (ANN), Deep Learning (DL), and hybrid approaches—and their capacity to improve predictive accuracy, scalability, and robustness. Evidence from diverse case studies demonstrates RF's effectiveness in managing complex spatial datasets, the superior spatial–temporal feature extraction capabilities of DL models such as Convolutional Neural Networks (CNN) and Recurrent Neural Networks (RNN), and the enhanced generalizability achieved through hybrid frameworks. The integration of Geographic Information Systems (GIS) and remote sensing data with AI is highlighted as a key enabler, facilitating multisource data fusion for advanced spatial analysis, real-time monitoring, and early warning applications. Critical environmental variables—including rainfall intensity, slope gradient, soil type, and land cover—are assessed for their influence on model performance. The review also addresses challenges related to computational demands, data availability, and model interpretability, and identifies future research priorities such as adaptive AI systems, dynamic data integration, and interdisciplinary modeling. The findings indicate that AI-driven LSM offers considerable potential for advancing proactive landslide risk management and fostering resilient communities.

Index Terms—Landslide Susceptibility Mapping, Machine Learning, Deep Learning, Hybrid Models, GIS, Remote Sensing, Disaster Risk Reduction

ISBN: 978-93-92104-14-5

Beyond Grammar: Teaching Dictogloss Statregies for Improving English Language Literacy

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Dictogloss is a collaborative language learning method, developed by Ruth Wajnryb, where a teacher dictates a short text several times to students, who then work in groups to reconstruct it and discuss its features. It integrates various skills like listening, writing, and speaking while focusing on both the meaning and the form of the language, making it an effective approach for improving grammatical accuracy and overall writing skills.

The Dictogloss Process

The dictogloss technique typically follows a four-step procedure:

1. Preparation: The teacher introduces the topic and may conduct pre-teaching of vocabulary, preparing the students for the text.

2. Listening and Note-Taking: The teacher reads the text at a natural pace, and students take brief notes, focusing on key ideas rather than exact wording.

3. Reconstruction: Students, working in small groups, compare their notes and collaboratively reconstruct the text, aiming for accuracy and cohesion.

4. Discussion and Correction: The groups compare their versions with the original text, and the teacher facilitates a discussion, focusing on specific grammatical forms and vocabulary.

Index Terms—Dictogloss, Listening, Note-Taking, Vocabulary, Technique

ISBN: 978-93-92104-14-5