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ICEMSS-25

Proceedings of

3rd International Conference on Engineering, Management and Social Sciences

GOA, INDIA

12TH - 13TH DECEMBER, 2025

ISBN: 978-81-996400-3-0

Co-Organised by

AKS UNIVERSITY SATNA (M.P.)

Faculty of Management Studies

GEETHANJALI College of Engineering and Technology

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3rd ICEMSS – 25

3rd International Conference on Engineering, Management and Social Sciences

Goa, India

12th - 13th December, 2025

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https://www.zepresearch.com/

https://www.icemss.in/

Publisher: ZEP Research

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Acknowledgement

ZEP Research is hosting the 3rd ICEMSS-25 3rd International Conference on Engineering, Management and Social Sciences at Goa, India on 12th -13th December, 2025. The main objective is to grant the amazing opportunity to learn about groundbreaking developments of this era, 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 scope 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 painstaking effort to travel such a long distance to attain this conference.

Priyanka Sahu

Mrs. Priyanka Sahu
Founder
ZEP Research

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Editorial

Dear All Participants,

On behalf of the Organizing Committee of the 3rd International Conference on Engineering, Management, and Social Sciences, 2025. I am honored to invite you to participate in this academic conference under the theme "Bridging disciplines, fostering innovation, and addressing global challenges through interdisciplinary research and collaboration"

This conference serves as a platform for knowledge exchange and experience sharing among academics, researchers, and experts worldwide, focusing on presenting the latest research and innovations that bridge management sciences and social sciences.

In an era of rapid global changes in technology, economy, and society, this conference presents a significant opportunity to exchange perspectives and approaches in dealing with emerging challenges.

We are pleased to welcome leading experts from around the world who will share their experiences and visions through keynote speeches, research presentations, and workshops.

The conference will cover diverse topics including innovation management, social and cultural changes, sustainable development, human resource management in the digital age, and the application of technology in solving social problems.

I sincerely hope that this conference will mark the beginning of academic collaborations that will lead to knowledge development and innovations beneficial to global society.

Best Wishes,



Dr. Ipseeta Nanda
Editor
Director
Rourkela Institute of Technology, Kalunga, India

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Preface

ZEP Research is hosting the 3rd ICEMSS Conference at Goa, India on 12th -13th December, 2025. This edition of conference is called in Goa, India. Hosted onsite and online mode for the convenience of our attendees.

It is our pleasure to have Professor Dr. Lalita Bisen, Dr. Ashutosh Kumar Pandey, Dr. Pooja Sharma, Dr. Surbhi Saroha, Dr. Amruta Surana, as our Session Chair and the Keynote Speakers- Dr. Dilip Kumar J Saini will be spoken on Human-Centric Innovation in the Age of AI, Prof. S.S. Prasada Rao Ph.D will be spoken on Ethical Considerations in Research, Dr. Kamal Gulati will be spoken on The Role of IoT in Driving Next-Gen Digital Ecosystems, Prof. (Dr) Ipseeta Nanda will be spoken on Quantam computing with AI and Prof. Dr. Alexander Bull will be spoken on Entrepreneurship meets Project Management, Prof. (Dr) Ipseeta Nanda will be spoken on Engineering Intelligence Smart Solutions for Sustainable Progress and We are also honored to have Dr. Indrajit Ghosal as the Organizing Secretary, Dr. Pranav Charkha as the Conference Chair, and Dr. Chef Dhiraj Pathak as the Conference Co-Chair, ICEMSS Conferences aims to set a collaborative goal for finding of new dimensions in research field, ICEMSS is bound to serve as a platform that facilitates the deliberation of the challenges involved in the practical implementation of all the most advanced knowledge produced in the fields of Management, Education, Social Sciences, applied science, and various field of engineering and technology.

This conference serves as a crucial platform for researchers, practitioners, and industry leaders to exchange ideas, share insights, and forge collaborations. Through keynote presentations, technical sessions, and interactive workshops, we aim to explore the latest developments, thoughts, and ethical considerations in this rapidly evolving field.

We are honoured to host distinguished experts and enthusiasts from around the globe, each contributing unique perspectives and expertise.

We extend our heartfelt gratitude to all participants, sponsors, and organizers whose dedication has made this event possible. Let us embark on this journey of discovery, innovation, and collaboration.

Welcome to the International Conference on Engineering, Management and Social Sciences.

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3rd International Conference on Engineering, Management and Social Sciences

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Goa, India

12th -13th December, 2025

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Organizing Secretary



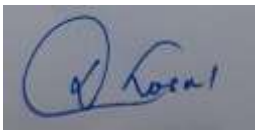
Dr.Indrajit Ghosal
Associate Professor & Research Coordinator,
Department of Management, Brainware University, Kolkata

It is with great honour and satisfaction that I present the proceedings of this 3rd International Conference on Engineering, Management and Social Sciences. This compilation stands as a testament to the collective efforts of researchers, academicians, industry professionals, and scholars from various parts of the world who have contributed their innovative ideas and scholarly work. The papers included here reflect significant advancements, contemporary challenges, and emerging opportunities in the conference theme.

I extend my heartfelt appreciation to all authors for their valuable submissions and to the reviewers for their rigorous evaluation, which has ensured the academic quality of this volume. My sincere gratitude also goes to our keynote speakers, technical committee members, session chairs, and panellists for enriching the conference with their insights and expertise.

I would also like to acknowledge the tireless efforts of the organising team, volunteers, and supporting staff whose dedication has made this conference a grand success. It is my hope that these proceedings will serve as a meaningful resource for future research and foster new collaborations among the global academic community. I wish all participants continued success in their scholarly pursuits.

I wish you all the Best



Dr. Indrajit Ghosal
Associate Professor & Research Coordinator
Brainware University, Kolkata, India

Conference Co-Chair



It gives me immense pleasure to extend a warm welcome to all participants of the *3rd International Conference on Engineering, Management and Social Sciences (ICEMSS-2025)*. This conference serves as a vibrant platform for academicians, researchers, industry experts, and students to exchange ideas, share their latest research findings, and explore innovative approaches to contemporary challenges across interdisciplinary domains.

The integration of engineering, management, and social sciences highlights the importance of collaborative inquiry in addressing complex global issues. By fostering dialogue across disciplines, ICEMSS aims to inspire new perspectives and promote sustainable solutions that advance academic and societal progress.

I take this opportunity to express my sincere appreciation to the organizing committee, reviewers, partner institutions, and contributors whose dedication and support have made this event a success. A special thanks is due to all authors and delegates for enriching the conference with their valuable insights and innovative research.

Wishing everyone a fruitful and intellectually stimulating experience at ICEMSS-2025.



Dr. Chef Dhiraj Pathak
Conference Co-Chair
Principal & Dean, Faculty Of Hospitality
NITTE Institute Of Hospitality Services, India

Keynote Speakers



Prof. S.S. Prasada Rao Ph.D,
Dean, Centre for Teaching & Learning,
SP Mandali's Prin L.N. Welingkar Institute of Management Development & Research, (WeSchool),
Matunga, Mumbai, Maharashtra, India

I extend my heartfelt congratulations and best wishes to the organizers, participants, and contributors of the **3rd International Conference on Engineering, Management, and Social Sciences (ICEMSS 2025)**, scheduled to be held in Goa on **12th–13th December 2025**.

In an era defined by rapid technological change and evolving global challenges, this conference offers a timely and valuable platform for **academicians, researchers, industry professionals, and students** to engage in rich discussions, share innovative ideas, and explore interdisciplinary solutions.

By bringing together expertise from **Engineering, Management, and Social Sciences**, ICEMSS is playing a pivotal role in nurturing collaborative research and promoting knowledge that is both impactful and future oriented. I am confident that this event will not only showcase cutting-edge research but also inspire new partnerships and thought leadership.

May ICEMSS 2025 be a grand success in achieving its goals and serve as a beacon for academic excellence and innovation.

Best regards,



Prof. S. S. Prasada Rao Ph.D
Keynote Speaker
ICEMSS-2024



Prof. Dr. Alexander Bull
Professor, IU International University, Germany

I am honored to join ICEMSS 2025 as a Keynote speaker and look forward to sharing ideas that connect engineering, management, and social sciences. This conference is a wonderful opportunity to exchange knowledge and collaborate with experts from around the world.



Prof. Dr. Alexander Bull
Keynote Speaker
ICEMSS-2025

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Dr. Kamal Gulati
Associate Professor, Amity University, India

It gives me immense pleasure to extend my warm greetings to all participants of the 3rd International Conference on Engineering, Management and Social Science (ICEMSS). The chosen theme, ―Bridging disciplines, fostering innovation and addressing global challenges through interdisciplinary research and collaboration,‖ is both timely and highly relevant in today's rapidly evolving global landscape.

The convergence of engineering, management, and social sciences is essential to address complex real-world problems that transcend traditional academic boundaries. In an era defined by digital transformation, sustainability concerns, and socio-economic disruptions, collaborative research and cross-disciplinary thinking have become powerful catalysts for innovation and societal progress.

ICEMSS provides an exceptional platform for researchers, academicians, and practitioners to share insights, advance knowledge, and forge meaningful partnerships across diverse domains. Such interactions not only nurture academic excellence but also contribute significantly to the formulation of solutions for the global challenges facing humanity.

I congratulate the organizers of SOVIOUR for their vision and commitment in bringing together scholars and professionals from around the world. I am confident that the deliberations and discussions at this conference will foster creative ideas, inspire young researchers, and pave new pathways toward sustainable and inclusive development.

Wishing the conference great success and all participants an enriching academic experience.

Best Regards,



Dr. Kamal Gulati

Keynote Speaker
ICEMSS-2025

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ABSTRACTS

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Current Situation for the Sustainable Cultural Tourism Operation Management of Qianxinan Prefecture in the Context of New Media

Aoxue Li[1], Dr. Chuanchen Bi[2]
[1,2]*Khon Kaen Univerisity, Thailand*

Abstract

The cultural and tourism industries are continuously evolving, with the marketing environment undergoing constant change. The use of new media marketing to promote rural tourism has become a prevailing trend within the contemporary cultural and tourism sectors. Abundant tourism resources serve as a fundamental prerequisite for the development of a tourist destination, while effective tourism marketing strategies are equally indispensable. Qianxinan Prefecture, located in Guizhou Province, leverages its favorable climate, rich natural tourism resources, and ecological health industries to advance the coordinated development of a diverse range of "tourism +" industries. The region aims to establish itself as an international mountain tourism destination and a leading domestic holiday health care destination. This study focuses on the sustainable cultural tourism of Qianxinan Prefecture. In the context of new media, the cultural tourism industry of Qianxinan Prefecture faces fresh opportunities for transformation and growth. This paper employs a PEST analysis to examine the current state of cultural tourism in Qianxinan Prefecture, investigates the existing challenges in the marketing and management of cultural tourism operations.

Keywords: *New Media Environment, Cultural Tourism Operation, Sustainable Development, Qianxinan Prefect*

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Development of Reinforced Rubber Bellow for high altitude payload separation with high separation velocity

Amitabh Chakraborty[1], D Laxman[2], R Srinivasan[3], B V Papa Rao[4]

[1,2,3,4]*Advanced Systems Laboratory, DRDO, Kanchanbagh, Hyderabad 500058, India*

Abstract

In aerospace applications, payload fairing separation systems play a critical role in ensuring the successful deployment of payloads. Traditional pyro based separation systems often suffer from high shock loads, increased weight, and complexity. This paper presents the development and experimental evaluation of a reinforced rubber bellow designed for payload fairing separation systems utilizing a Linear Bellow Separation System (LBSS). The bellow is fabricated using a hybrid combination of nylon fabric and neoprene rubber, offering enhanced mechanical strength, flexibility, and durability. The primary function of the reinforced rubber bellow is to contain and direct high-pressure gas generated by the controlled burning of explosives, ensuring efficient energy transfer for high-velocity separation of the LBSS. The combination of nylon fabric enhances structural integrity, while neoprene rubber provides excellent sealing capability and resistance to thermal and mechanical stresses. Initial efforts were made to design the number of reinforcement layers to be put on the rubber bellow to achieve the required strength of the bellow without compromising the flexibility requirement of such system. Experimental validation has been conducted to assess key performance parameters, including pressure containment capability, gas sealing efficiency, and separation velocity. Results also indicate a significant reduction in separation shock levels, demonstrating the feasibility of this novel separation approach. The study concludes that the reinforced rubber bellow is a viable candidate for next-generation low-shock, thrusting separation for payload fairing separation systems, with potential applications in strategic space missions.

Keywords: *Reinforced Rubber Bellow, Nylon Fabric, Neoprene Rubber, Payload Fairing Separation, Linear Bellow Separation System (LBSS), Shock Attenuation, Aerospace Applications.*

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A sustainability matrix study of Lignin as an antioxidant and reinforcing filler in tyre rubber compounds

Jadhav Yogesh[1], Sampatrao Manjare[2]

[1,2]Advanced Sustainable Materials Lab, Department of Chemical Engineering, BITS Pilani, K. K. Birla Goa Campus, Zuarinagar, Goa, 403726, India

Abstract

The increasing demand for sustainable materials has renewed interest in lignin, a natural biopolymer obtained from plant-based/lignocellulosic sources. This study explored how technical lignin can be used as an antioxidant and reinforcing filler in tyre rubber compounds. Whereas, A sustainability assessment was conducted using four key matrices such as Life Cycle Assessment (LCA), Energy Demand, and Water Demand and E Factor. The LCA examined the environmental effects of extracting, processing, and application of lignin compared to conventional antioxidant and reinforcing filler such as 6PPD, Carbon black and Silica. The LCA was performed using SimaPro software with the ReCiPe Midpoint-Endpoint (H) method. Along with this, Energy Demand, Water Demand and E-Factor was analyzed by comparing conventional processes of antioxidant and reinforcing filler and novel extraction of lignin. The finding suggests that technical lignin is a potential replacement to conventional antioxidant and reinforcing filler in tyre rubber compounds.

Keywords: *Lignin; Rubber; LCA; Sustainability; Antioxidants; Reinforcing filler.*

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Analysis of DCT Wavelet based PSO and GA Algorithm

Anu Rani[1], Dr. Rinki Ahuja[2]
[1,2]Sushant University, India

Abstract:

Now a days there is increase in data exchange over digital media. As a result of that one multimedia data like audio, video, images transfer increases day by day. Watermarking is very famous now days due to security concern. There are many applications of watermarking with the help of which security can be increased in data. There are many areas where watermarking can be used such as copyright protection, fingerprint authentication, copy control etc. Among the well-known industries that use watermarking are digital media, communications, and computing technology. Watermarking is becoming more and more popular in cybersecurity and antivirus protection as the detection of unauthorized use of specific web resources and data protection become increasingly independent. The process of adding a signature, stamp, or other identifying feature to digital content in order to confirm its legitimacy and ownership is known as watermarking. The watermark could be anything private, such writing, a logo, or numbers. Algorithms can be used to increase imperceptibility and robustness. applying to the host image the Discrete Cosine Transform (DCT) technique. Apply various attack types to the watermarked image. To determine the image's degradation, compute the PSNR method. On the primary image, the Particle Swarm Optimization Algorithm (PSO) and the Genetic Algorithm (GA) are applied. The main trade-off of watermarking is between imperceptibility and robustness. Watermarks must be embedded sufficiently deep in the image so that standard attacks, such as compression, noise, or scaling, cannot be successful. However, traditionally this leads to a degradation of the visual quality of the host image. Adaptation is usually not present in strategies; thus, a watermark may be too visible in the watermarked image or removed by conventional attacks. Most traditional methods lack proper encryption, and hence, can be easily detected and extracted illegally. Often, these methods are oriented toward fixed parameters for embedding; however, in different types of images, such fixed parameters will not hold optimality and, therefore, may lead to unstable performance.

Keywords: *Authentication, Copy control, algorithms, DCT, Robustness, Watermarking, GA, PSO.*

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Interactive job and Internship platform

Umesh Prasad[1], Atharva Anbhule[2], Srushti Chopade[3], Aashwin Yerawar[4], Neerajkumar Sathawane[5]

[1,2,3,4,5]*Rajarshi Shahu college of Engineering, Tathawade, Pune, India*

Abstract:

In this paper, we propose an all-in-one career platform tailored for students in technical education, seamlessly integrating job opportunities, intern- ships, hackathons, and coding practice. Inspired by popular platforms such as LinkedIn, LeetCode, and Unstop, this platform is designed to enhance students' skills and provide practical experiences. Additionally, it allows companies to host coding challenges for effective talent identification. Leveraging an Artificial Neu- ral Network (ANN) model, the platform recommends relevant internships and job opportunities based on the user's existing knowledge, increasing user engagement. By reviewing current skill development and recruitment platforms, this study highlights existing shortcomings and demonstrates how our platform addresses these gaps. The platform actively promotes development, preparing students for ideal job opportunities and facilitating the hiring process. Ultimately, this career platform serves as a comprehensive bridge between students and companies, covering all essential aspects of skill development and recruitment.

Keywords: *Career Platform, Artificial Neural Network, Job Matching, Skill Development, Coding Practice, Recruitment.*

ICEMSS

Optimization of Power Distribution Systems Using Artificial Intelligence For Load Forecasting

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Abstract:

Power distribution systems are integral to delivering electrical energy from transmission networks to consumers. Accurate load forecasting is crucial for ensuring optimal operation, reducing energy losses, and enhancing reliability. Traditional load forecasting models often fail to account for the increasing complexity and dynamic behaviour of modern power grids, especially as renewable energy sources are integrated. This paper explores the application of Artificial Intelligence (AI) techniques in optimizing load forecasting for power distribution systems. The study evaluates various AI-based algorithms, including machine learning and deep learning methods, for their ability to predict load demands with higher accuracy. Additionally, a hybrid approach that combines AI algorithms with conventional models is proposed to improve forecasting performance. The results demonstrate that AI-driven forecasting techniques outperform traditional methods in terms of precision and adaptability, enabling more efficient power distribution and better integration of renewable energy sources.

Keywords: *Power Distribution Systems, Load Forecasting, Artificial Intelligence, Machine Learning, Deep Learning, Hybrid Forecasting Models, Renewable Energy Integration, Energy Optimization, Smart Grids*

ICEMSS

G20 and the Green Economy: Challenges and Opportunities for Economic Sustainability

Mrs. Surbhi Rattan[1]

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Abstract:

This research paper explores the pivotal role of the G20 in navigating the complex terrain of the green economy and its profound implications for economic sustainability. Through a comprehensive analysis of literature, policy frameworks, and case studies, this study aims to unravel the challenges and opportunities embedded in the G20's pursuit of a sustainable future. The examination encompasses the historical engagement of G20 nations with environmental agendas, the identification of obstacles hindering the global green economy, and an exploration of the diverse opportunities fostering economic sustainability. By scrutinizing policy frameworks and initiatives, the paper delves into the potential of international cooperation and coordination to drive a harmonized effort towards a green economy. The inclusion of case studies from specific G20 member countries offers nuanced insights, contributing to a deeper understanding of the dynamic interplay between economic growth and environmental conservation. The paper concludes by envisioning future trends and proposing recommendations to fortify the G20's role in spearheading a resilient and sustainable global economy. On the wildlife conservation front too, there have been notable achievements. Due to the success of Project Tiger, India, is now home to 70% of the world's tiger population. Similarly, our nation houses 60% of the Asiatic elephant population. Throughout the working group meeting, G20's commitment to multilateralism and cooperation was reaffirmed. It was acknowledged that no single nation can address environmental challenges in isolation. Collaboration among member nations, international organizations, and stakeholders is crucial to achieving the larger shared goals.

Keywords: *G20, Green economy, Economic Sustainability, Climate Change, Renewable Energy, Sustainable Development, Policy Framework, International Cooperation.*

ICEMSS

Menopause on Instagram: A Thematic Analysis of reels for Health Communication

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Abstract:

Menopause remains a culturally silenced and medically misunderstood phase in women's lives. Social media platforms, particularly Instagram, have emerged as informal yet influential spaces where women share experiences, challenge stigma, and access peer support. However, not much is explored about the communicative patterns of short video content such as Instagram Reels to convey menopause related messages. To address this knowledge gap, this paper aims to explore how menopause is communicated through Instagram Reels by analysing tone, language, and thematic content from communication perspective. To fulfil the objective of the study, a qualitative thematic analysis was conducted on a purposive sample of 30 publicly available Instagram Reels tagged with menopause related hashtags. Reels were categorized into seven themes: symptom experience, emotional support, education and information, humour and relatability, lifestyle and wellbeing, stigma-breaking activism, and product promotion. Each Reel was coded for communicative features such as tone (e.g., empathetic, humorous, assertive), speaker identity, message framing, and use of narrative or emotional appeals. Thematic analysis revealed that the most frequent themes were symptom experience and emotional support, followed by educational content and humour. Storytelling and humour were used to reduce stigma and foster relatability, while activist Reels redefined menopause as a shared sociocultural experience rather than personal struggle. Communication via Reels is largely dominated by lay users and influencers, with few Reels led by health professionals. Instagram Reels serve as a meaningful communication tool where menopause is reframed through personal narratives, humour, and solidarity. These platforms offer space for community-building, empowerment, and health literacy, particularly in contexts where formal healthcare communication remains limited.

Keywords: *Menopause, Instagram Reels, Communication, Social Media, Thematic Analysis, Stigma.*

Employing Machine Learning Approaches To Detect Lung Cancer Via Analysis Of Clinical And Genetic Data

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Abstract:

With survival rates directly related to the stage of the disease first discovered, the ongoing difficulty of lung cancer detection and diagnosis remains a major issue in modern medical practice. The groundbreaking integration of machine learning approaches with clinical and genetic data analysis for improved lung cancer detection capacities is extensively analyzed in this thorough review. By means of a rigorous review of innovative research undertaken between 2019 and 2024, this paper offers an in-depth investigation of several artificial intelligence techniques in evaluating intricate medical data patterns. Examining a broad range of machine learning techniques, including sophisticated deep learning networks, advanced support vector machines, and ensemblebased random forests, the efficacy of each in processing both conventional clinical markers and newly developed genetic signatures is assessed. The research compiles results from many studies proving the amazing ability of artificial intelligence to transform cancer diagnosis. Our thorough analysis shows that integrated machine learning techniques regularly attain detection accuracies ranging from 89% to 97%, therefore reflecting a notable progress over traditional diagnostic techniques. Moreover, this review offers a thorough analysis of the difficulties and restrictions of present methods as well as points of interest for next studies and progress in this fast developing discipline. The combination of results points to a paradigm change in cancer diagnosis whereby the integration of machine learning with clinical and genetic data analysis gives hitherto unheard-of chances for early identification and better patient outcomes.

Keywords: *Lung Cancer Detection, Machine Learning, Artificial Intelligence, Genetic Analysis, Clinical Data, Deep Learning, Biomarkers, Cancer Diagnostics, Precision Medicine, Early Detection, Neural Networks, Computational Biology, Oncology, Bioinformatics, Molecular Diagnostics*

Integrating Digital Marketing Insights into HR Strategy: Building a Data-Driven Culture in Tech Organizations

Md Gauhar Hasnain[1], Dr. Khaleda Rehman[2], Swati Raj Singh[3]

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Abstract:

The importance of data and its application in the workplace cannot be overstated. The swift digital evolution in technology-driven industries has underscored the importance of making data-driven decisions across various organizational functions. While digital marketing has led the way in mobilizing data analytics to augment customer engagement, similar approaches in Human Resource (HR) management remain under explored. The era when over 98% of traditional human resource functions were completed manually is now behind us. Technological advancements have streamlined data collection, analysis, and the generation of actionable insights. Although, without data literacy among HR professionals, these capabilities remain underutilized and ineffective. This review paper investigates the fusion of digital marketing methodologies—such as real-time analytics, customer journey mapping, and sentiment analysis—into HR strategy to foster a data-driven culture within technology organizations. The paper pinpoints key frameworks and case studies that demonstrate the potential of marketing-derived tools to optimize employee engagement, boost recruitment processes, and drive performance management. The assessment suggest that incorporating marketing-style analytics into Human Resource enhances manpower planning while also bolstering organizational agility and reinforcing a strong workplace culture. The study also addresses challenges related to data governance, ethical considerations, and cross-functional collaboration. Ultimately, this review provides a conceptual foundation and strategic direction for researchers and practitioners aiming to bridge the gap between digital marketing intelligence and Human Resource transition in the digital era.

Keywords: *HR Analytics, Digital Transition, Marketing Insights, Employee Engagement, Data-Driven Strategy, Tech Industry.*

Future-Ready Learning: EdTech and Pedagogical Shifts Shaping Gen-Z Management Students in Sri Lanka

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Abstract:

The Gen-Z learner has been identified to be drastically different from the traditional learner The Gen-Z learner has been identified to be drastically different from the traditional learner due to their embrace of technology, preference to personalized and flexible learning experiences, and self-directed learning. Sri Lanka's higher education landscape is being subjected to significant transformations to cater to the learning needs of Gen Z learners. Educators have been significantly challenged by the pedagogical shifts required by the Gen-Z learners. This research explores the shifts in educational technologies and pedagogical paradigms within the non-state higher education sector in Sri Lanka in the lens of undergraduates reading for business management degree programs. Employing a mixed-methods research approach where data was collected from both learners and educators, the study analyzed the learning expectations and requirements of the Gen-Z learners, shared challenges faced by educators when teaching Gen-Z learners, and the emergence of educational technologies and pedagogies to cater to the learning needs of Gen-Z learners. The research findings revealed that Gen-Z learners expect tech-enabled learning, application-oriented learning, personalized learning paths to reflect their career goals, continuous feedback mechanisms, and flexible learning mechanisms to learn at their own pace. The shared challenges faced by educators were identified to be engagement fatigue of passive learners, digital divide and equity gap between students, the need to cater to the diverse student expectations, the difficulties in balancing innovation and rigid academic administration policies, and the resistance to change by senior academic members. The emergence of educational technologies and innovative pedagogies was identified to be use of AI-driven educational tools, collaborative digital education ecosystems, gamified learning techniques, flipped classrooms, and cross- over learning activities. By examining the perspectives of learners and educators, the study offers insights for developing a unified pedagogical framework which supports digitally enhanced education in management studies leveraging Gen Z's fluency in technology and the appetite for practical application.

Keywords: *Education Pedagogies, Education Technologies, Gen-Z learner, Higher Education in Management*

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Cultural determinants as antecedents to the adoption of sustainable practices

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Abstract:

This article examines how cultural values and norms influence sustainable practices and proposes a framework for designing culturally sensitive sustainability strategies. The article highlights the importance of recognizing and understanding the role of cultural values and norms in sustainable practices to design effective and culturally sensitive interventions to promote sustainability. The article identifies various cultural factors, such as attitudes towards the environment, social norms, traditional practices, consumer behaviour, gender, religion etc., that have a significant influence on sustainable practices. It emphasizes the importance of respecting cultural diversity in sustainability efforts and working with local communities to integrate sustainability into their values and practices. The proposed framework for designing culturally sensitive sustainability strategies considers the cultural values and norms that influence sustainable practices, promoting more inclusive and effective sustainability efforts that consider local cultural contexts and values.

***Keywords**: Cultural sensitivity, Sustainability, Diversity, Cultural values, Framework.*

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The Mediating Role Of Intellectual Capital Disclosure Between Corporate Governance Attributes And Firm Value

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[1,2,3]*Presidency University, India*

Abstract:

Purpose: The major goal of this research is to look at how intellectual capital disclosure influences as a mediator in the relationship between corporate governance and firm value.

Design/methodology/ approach: The study was carried out by considering the top 30 companies based on their market capitalization for the period of 2010 to 2019. Further, examines the mediator role of ICD among corporate governance attributes and firm value by using PLS-SEM.

Findings: The study result reveals that IC disclosure partially mediate in the relationship between corporate governance and firm value. In addition, the results show that IC disclosure and firm value, IC disclosure and corporate governance, and corporate governance and firm value relationships are significant as expected.

Originality/value: The originality of this research is that, though, many studies individually examined IC disclosure with corporate governance; corporate governance with firm value; and IC disclosure with firm value. Best of our knowledge, there has no studies that examine the linkage role of IC disclosure in the relationship between corporate governance and firm value.

Keywords*: Corporate governance, Intellectual capital disclosure, Firm value, Mediation.*

The Role of Tourism in Parental Well Being and the Enhancement of General Capabilities in Children in Iran

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[1] *Payame Noor University, Iran*
[2] *University of Canberra, Australia*

Abstract:

This article presents current knowledge on family tourism while offering a future-oriented perspective through interdisciplinary contributions. Research in family tourism is limited, fragmented, and individualized; it fails to account for the diversity of family forms, the social dynamics of family groups, and the multidimensional nature of family experiences. There is a need to integrate changing perceptions and understandings of family into tourism studies. This research employs a qualitative methodology aiming to identify slow-moving changes and trends in family tourism using cognitive mapping to predict the future. The study reveals that behavioral change emerges through mental mapping, enabling systemic interpretation and constructivist analysis. Mental maps represent emerging and changing trends in family tourism, illustrating how the connection between concepts and mental constructs can offer a more comprehensive and critical interpretation of the future of families and tourism.

Keywords: *Future of families, forecasting, children, tourism, mental mapping using spatial data modelling concepts.*

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Zero Trust Architecture in Financial Institutions: Reinventing Cybersecurity Postures in the Age of Digital Banking

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Abstract:

The digital transformation of banking services has ushered in an era of hyper-connectivity, decentralization, and increased cybersecurity risk. Traditional perimeter-based security models are increasingly ineffective against modern threats such as insider attacks, credential theft, and sophisticated phishing campaigns. This has prompted financial institutions to adopt the Zero Trust Architecture (ZTA)—a paradigm shift where no user or system is trusted by default, even if inside the organizational network.

This study investigates the implementation and effectiveness of ZTA in enhancing cybersecurity posture in financial institutions. It identifies eight critical factors affecting ZTA success, including identity verification, device trust, micro-segmentation, continuous monitoring, and behavioural analytics. A structured questionnaire was administered to 100 IT professionals and banking employees across India, with data analyzed using SPSS tools—Percentage Analysis, Multiple Regression, and Chi-Square Tests.

Findings reveal that while awareness and intent to adopt Zero Trust are high, gaps remain in implementation due to legacy systems, skill shortages, and inconsistent policy enforcement. Regression analysis highlight's identity management, continuous monitoring, and device security as the strongest predictors of ZTA effectiveness. The study provides practical insights and suggests a roadmap for banks to transition from reactive to proactive security models.

The implications of this research are significant, offering guidance for IT leaders, policymakers, and regulators in crafting scalable and secure digital financial ecosystems. The paper contributes to the growing body of cybersecurity literature by integrating strategic, technical, and human-centric dimensions of Zero Trust adoption in financial institutions.

Keywords: *Zero Trust Architecture, Cybersecurity, Digital Banking, Identity Verification, Micro-Segmentation, SPSS, Risk Management, Chi-Square, Regression, Financial Technology*

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Pre school learning

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Abstract:

Now a day we use to see the many preschools or foundation school in the surroundings. The foundation school itself indicates that it's a basic step towards learning and many motor skills will be developed in the child. Earlier days we use to see that our seniors are used to go innovative concepts instead of gaining marks and gaining the knowledge and to put some extra ides to come out any new techniques.

But in recent trend education becomes making confuse to the parents. Many speakers use to say jobs will be vanished and automation is existing and taking place in the market rapidly and robotics and machine learning concepts are introduced for grade 1st students etc. and all but no one saying about the child psychology how its speak when child starts to go to school from 1st day.

Many schools doing the marketing by saying the concepts like curriculum designing their own curriculum in various aspects such as, motor skills, eco-friendly, skill development etc. and all but no one are designing the child psychology curriculum.

Keyword: *Pre-school, curriculum, child psychology.*

ICEMSS

Smart Disease Prediction System using Machine Learning for Enhanced Healthcare Accessibility

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Shobhit Institute of Engineering & Technology, Meerut, India

Abstract:

This research paper presents a smart disease prediction system utilizing Machine Learning (ML) and Artificial Intelligence (AI) to predict diseases based on symptoms provided by users. In today's fast-paced world, individuals often overlook minor health concerns, which can escalate into serious problems if left unaddressed. The primary objective of this project is to empower individuals by assisting them in identifying potential health issues at an early stage, thereby reducing the immediate need for a doctor's visit. We employed supervised learning techniques, specifically Decision Tree and Random Forest algorithms, to train the system on a comprehensive medical dataset. Our experimental results demonstrate that the developed model can predict common diseases such as flu, diabetes, and malaria with a commendable accuracy of up to 94%. This innovative system holds the potential to function as a virtual doctor's assistant, significantly bridging the gap in healthcare access for the general populace.

***Keywords**: Disease prediction, Machine Learning, Random Forest, Healthcare, AI.*

ICEMSS

Multilingual Image Caption Generator Using Deep Learning

Anshika Shukla
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Abstract:

With the growing demand for accessible digital content, automatic image description generators have emerged as innovative AI tools that combine computer vision and natural language processing to generate meaningful captions. This project focuses on building a system that can describe images in simple language, aiding visually impaired users, improving search results, and enhancing content comprehension. It uses deep learning models like CNNs for image feature extraction and RNNs or Transformers for generating text. The model is trained on a diverse dataset to ensure it performs well across various types of images.

Keywords: *Image Captioning, Convolutional Neural Network (CNN), Flickr30k Dataset, Transformers,Long Short-Term Memory (LSTM), Recurrent Neural Networks (RNNs)*

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Interpolation Techniques for Recovering Missing Hourly Temperature Data in Indian Automatic Weather Stations: Challenges and Innovations

Pankaj Agrawal[1], Pratik Gite[2]
[1,2]Parul university, India

Abstract:

In agricultural practices, the accuracy of temperature forecasting is becoming pivotal for calculations of water demands for plants, protecting nursery plants from extreme weather, and supporting sustainable environments. Even with these practices, the malfunctions of the equipment, unpredictable weather conditions, or human errors are causing the incompleteness of data in Automatic Weather Station (AWS) datasets, indicating a challenge. This paper introduces a temperature forecasting technique based on time series analysis, which is used to address the issue of lacking meteorological data. The model uses time stamp based linear interpolation to assign missing values in time series temperature data collected every 15 minutes interval which generates 96 data points in a day. The use of interpolation makes sure of the continuation of the dataset, allowing for accurate analysis and prediction. This proposed novel method differs from the traditional machine learning methods by demonstrating the superiority of performance, attaining the lowest Root Mean Square Errors (RMSEs) for short-term missing value reconstruction. The results obtained by using these methods indicate the importance of real-time temperature interpolation in predicting the evapotranspiration accurately. This method will enhance the reliability of the water demand forecast, allowing farmers and growers alike to make rational decisions, reduce costs, and adapt to the challenges emerging from climate change. From this study, all sorts of innovations and techniques in precise farming and resource sustainability show the potential value of integrating data science techniques with meteorological data.

Keywords: *Automatic Weather Station (AWS), Missing Data Imputation, Per day Time Series Modelling, Diurnal Cycle Analysis ,Climate Data Quality control., Hourly Temperature Data.*

Real-Time Wind Speed Interpolation for Optimized Irrigation and Crop Yield Prediction in Smart Farming

Pankaj Agrawal[1], Pratik Gite[2]
[1,2]*Parul university, India*

Abstract:

For smart farming to optimise water resource demand predictions using climatic data, the actual wind speed measurement is crucial. Early systems that relied on seasonal averages frequently failed to account for short-term variations, which resulted in inaccurate irrigation choices and water demand projections. An empirical study on the value of real-time wind speed measurement and the use of daily-based time-series interpolation techniques to acquire continuous, accurate wind speed data for modified evapotranspiration (ET) estimation is presented in this paper. To identify the missing value in the data, the experiment uses data gathered over a two-year period from two AWS (Automatic weather stations) in BULANDSHAHAR_KVK & BULANDSHAHAR India. To determine the efficacy of missing data, we have contrasted the use of short-term and long-term data. The study demonstrates how real-time measurements can greatly increase the accuracy of missing estimates, resulting in improved irrigation scheduling and more efficient plant water use. Additionally, finished wind speed data lowers the risk of water stress or over-irrigation and helps maintain continuous data streams when interpolated using sophisticated time-series techniques. Up to 20% less water is used for irrigation when these techniques are combined. Additionally, the researchers developed an algorithm to postpone hourly irrigation based on wind speed, which further lowers water demand in arid regions by 10%.

Keywords*: wind speed interpolation, Evapotranspiration, Smart farming, Irrigation scheduling, Time Series analysis.*

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Leveraging Gender Diversity for Inclusive Excellence: Strategic HR Insights from Telangana's IT Industry

Marripudi Vijaya Lakshmi[1], Dr. B. Vamsi Krishna[2], Dr. J. Pardha Saradhi[3]

[1,3]Geethanjali College of Engineering and Technology, India
[2]KL Business School, Koneru Lakshmaiah Education Foundation, India

Abstract:

This study examines the strategic human resource (HR) practices employed by Telangana's Information Technology (IT) industry to leverage gender diversity for inclusive excellence. As the IT sector continues to grow rapidly in India, particularly in Telangana, organizations face increasing pressure to create a diverse and inclusive workplace. This study investigates how HR departments in Telangana's IT firms are implementing innovative strategies to attract, retain, and promote women in the industry, thereby fostering an environment of inclusive excellence.

This study adopts a mixed-methods approach, combining quantitative surveys with qualitative interviews of HR profes- sionals and employees across various IT companies in Telangana. This research explores the current state of gender diversity in the region's IT sector, identifies key challenges faced by women in the industry, and analyzes the effectiveness of existing HR initiatives.

This study also examines the impact of these initiatives on or- ganizational performance, employee satisfaction, and innovation. The results indicate that companies with more diverse teams and inclusive cultures demonstrate higher levels of creativity, problem-solving capabilities, and overall productivity. Further- more, this study explores the role of leadership commitment and organizational culture in driving sustainable change towards gender equality.

Based on these findings, this study proposes a comprehensive framework for HR professionals to develop and implement effective gender diversity strategies. This framework emphasizes the importance of data-driven decision-making, continuous mon- itoring and evaluation of diversity initiatives, and the integration of diversity and inclusion goals into broader organizational strategies.

This study contributes to the growing body of literature on gender diversity in the technology sector and provides practical insights for HR professionals and organizational leaders seeking to create more inclusive work environments. These findings have implications not only for Telangana's IT industry but also for other regions and sectors striving to leverage gender diversity for inclusive excellence.

***Keywords**: Gender diversity, inclusive excellence, human re- source management, IT industry, Telangana, workplace inclusion, strategic HR, women in technology, organizational performance, diversity initiatives.*

The practice of e-hrm and challenges for the organization-a study

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Deemed to Be University, India

Abstract:

In today's rapidly evolving digital landscape, organizations are increasingly turning to technology to streamline their human resource functions. Electronic Human Resource Management (e-HRM) refers to the integration of digital tools and internet-based technologies in managing HR activities such as recruitment, training, performance evaluation, payroll, and employee engagement. By shifting traditional HRM practices to digital platforms, e-HRM aims to enhance organizational efficiency, reduce administrative burdens, and facilitate strategic decision-making. The paper on the practices of e-HRM, explains the different challenges faced with the coming of the e-HRM concept. It is not only the organizations but also the employees which face challenges which are scrutinized under four categories. The two decade old concept of e-HRM is dynamic in nature and it allows the organization to learn and unlearn many concepts related to HR and not only with this field, one has to get acquainted with Artificial Intelligence. The human Being the most powerful and dynamic resource in the world has to overcome the challenges and have to include e-HRM in their perspective to make the corporate more user friendly. The Main objectives of this study is Identify commonly used digital platforms and systems in HR functions such as recruitment, training, performance management, and payroll and assess how e-HRM contributes to efficiency, cost-effectiveness, data management, and strategic HR planning. This paper explores the current practices of e-HRM in organizations and delves into the key challenges that hinder its successful implementation. By understanding both the opportunities and obstacles of e-HRM, organizations can better strategize their digital transformation in the HR domain.

Keywords: *e-HRM, management, human resource, artificial intelligence, software platforms.*

Cultural and Diversity Management as a Competitive Advantage in Multinational Corporations

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Galgotia College of Engineering and Technology, Greater Noida

Abstract:

This piece of research will delve into the role of cultural and diversity management as an outstanding competitive advantage for multinational corporations. It will continue by exploring aspects ranging from the effect of diversity on organizational performance through the challenges facing a multinational culture, the role of leadership in ensuring inclusivity, and the effectiveness of diversity strategy on innovation and employee satisfaction. The study uses secondary data and thematic analysis to underscore cultural intelligence, intersectionality, and the alignment of diversity strategies with sustainable development goals (SDGs). The findings are for diversity management as a strategic tool for innovation, employee engagement, and global competitiveness.

Keywords: *Diversity, Cultural, Inclusivity, Sustainable Development Goals, Leadership.*

ICEMSS

Gender Diversity as a Catalyst for Women's Leadership and Socio-Economic Progress: A Study of IT Organizations in Telangana

Marripudi Vijaya Lakshmi[1], Dr. B. Vamsi Krishna[2], Dr. J. Pardha Saradhi[3]

[1,3]Geethanjali College of Engineering and Technology, India
[2]KL Business School, Koneru Lakshmaiah Education Foundation, India

Abstract:

In recent years, the IT industry has emerged as a critical driver of economic growth in Telangana, yet gender disparities persist in leadership representation and career ad- vancement for women. This study examines the role of gender diversity as a catalyst for empowering women and fostering socio- economic progress within IT organizations in Telangana. The research investigates how gender-inclusive HR strategies, such as equitable recruitment, leadership development programs, men- torship initiatives, flexible work policies, and diversity training, influence women's career progression, job satisfaction, retention, and overall organizational performance. The study adopts a quantitative research approach, collecting primary data from women employees and HR professionals across selected IT firms in Telangana. Statistical analyses, includ- ing regression and structural equation modeling, are used to test hypotheses related to the impact of gender diversity and HR inter- ventions on women's leadership opportunities and socio-economic outcomes. The findings reveal a significant positive relationship between gender-inclusive HR strategies and women's empow- erment, highlighting the critical role of organizational policies in reducing gender gaps and fostering a culture of inclusivity. The results also demonstrate that organizations promoting gen- der diversity experience enhanced productivity, innovation, and employee engagement, which collectively contribute to broader socio-economic development, including regional economic growth and reduction in income inequality.The study underscores the importance of aligning HR strate- gies with organizational goals to create pathways for women's leadership and sustainable workforce development. It emphasizes that empowering women is not only a matter of corporate respon- sibility but also a strategic approach to improving organizational effectiveness and contributing to socio-economic progress. The insights from this research provide practical implications for HR managers, policymakers, and organizational leaders seeking to implement effective diversity and inclusion practices in the IT sector. Furthermore, the study contributes to the growing body of literature on gender diversity, leadership, and socio-economic impact in emerging economies, offering a framework for future research on inclusive workforce practices.

Keywords*: Gender Diversity, Women's Empowerment, Leadership Development, Inclusive HR Strategies, IT Industry, Socio-Economic Progress, Employee Engagement, Telangana*

OceanNeRF: Physics-Aware Deep Learning for Underwater 3D Reconstruction

Palem Narasimhulu[1], Dr. D.S.Rao[2], Dr. Pradeep B.S[3]
[1, 2]APEX University, [3]MITE

Abstract:

Underwater imagery is dominated by wavelength-selective absorption, forward and backscatter from suspended particulates, nonuniform illumination, and refraction at housing interfaces. These effects bias color and undermine multiview reconstruction. We present OceanNeRF, a medium-aware neural radiance field that embeds an ocean-optics image formation model into volumetric rendering. In a single optimization, OceanNeRF estimates scene density and diffuse albedo while jointly learning a spatially varying water column—per-channel extinction and direction-dependent veiling light. The formulation operates on standard multi-view RGB and optionally incorporates refractive calibration, preserving practical acquisition workflows. To keep albedo stable and prevent illumination from being baked into reflectance, we add a lightweight Retinex-style prior on rendered albedo views. For reef scenes, a CoralNet-guided semantic regularizer gently penalizes implausible hues and textures for common benthic taxa and substrates, improving ecological plausibility without hard constraints.We evaluate three regimes: (i) physically simulated scenes with ground-truth water parameters and geometry, (ii) controlled pool or tank recordings containing Macbeth color charts at multiple ranges and lamp poses, and (iii) in-situ reef sequences from handheld cameras or ROVs. Metrics span 2D quality (PSNR, SSIM, LPIPS, UIQM, UCIQE, ΔE00 on chart patches), geometry (Chamfer distance, F-score), and downstream utility (fish and echinoderm detection mAP on novel-view renderings).Across all settings, OceanNeRF delivers higher photometric fidelity, more consistent color with range, and sharper reconstructions than vanilla NeRF, enhancement-then-NeRF cascades (AUIE-Net, URetinex-Net), and medium-agnostic 3D Gaussian Splatting. Ablations confirm the importance of explicit backscatter and spectral attenuation, as well as the Retinex and semantic terms. Beyond improved appearance and geometry, color-restored novel views raise detection performance for marine fauna. We will release code, datasets, and evaluation scripts to facilitate reproducible comparison and adoption.

Keywords: *Backscatter modeling, Neural radiance fields, Ocean optics, Underwater 3D reconstruction.*

Sustainable Finance and Fintech: Connecting Foreign Investment, Futures Market and Economic Growth Applying Financial Analytics for Emerging Economies

Piyali Roy Chowdhury[1], Arjun S[2], Indrajit Ghosal[3]
[1,3]Christ University, India, [2]Brainware University, India

Abstract:

The backbone of any economy happens to be the health of financial market. Thus, it is crucial to determine and analyze the growth of financial markets, especially for emerging economies to regulate the real growth of a nation. Thus, the purpose of this research is to examine the dynamic relationships between foreign investment, futures market, economic growth, financial markets, and innovation based on research and development applied in financial sector growth. The research mainly aims to examine the contribution of foreign investment to the futures market using ARDL model, cointegration and Granger causality, to investigate the impact of the futures market on economic growth and to use correlation analysis to examine the connection between financial markets and innovation. This study, by collecting the empirical data on the short- and long-run movements of these economic variables, aims at better market conditions, facilitating better-informed policy and investment decisions. The objectives of this research are to understand the contribution of foreign investment to the future market, to know the future market and its contribution to economic development and finally, to comprehend the fintech involvement in defining the development of emerging economies. The methodology that is considered here is Autoregressive Distributed lag (ARDL) Model. Global capital flows have an alarming effect on financial infrastructure, influencing the efficiency of markets. A stronger and more efficient futures market depends on policies that encourage integration of fintech development to augment foreign investment, such as reduced regulatory barriers, ease of doing business, and stable macroeconomic conditions. Policymakers play a critical role in shaping market strength through investor-friendly reforms and supportive economic frameworks. Price discovery, risk mitigation, and liquidity are essential for efficient economic functioning but finally, it can be discussed that policymakers should focus on reforms that ensure greater transparency, higher investor participation, and fewer regulatory barriers. The strong relationship between innovation in fintech and market performance calls for a dual-track approach integrating innovation policy with financial sector reforms. Overall, empirical evidence supports a comprehensive growth framework where innovation by forcing integrated fintech, foreign investment, and financial market evolution work together to drive sustainable economic growth.

Keywords: *ARDL, Economic Growth, Emerging Economies, Fintech, Foreign Investment, Future Market*

A Study on "Risk-Return Analysis of SIPs: Evidence from Indian Mutual Fund Industry

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Abstract:

Systematic Investment Plans (SIPs) have emerged as one of the most preferred investment avenues among retail investors in India, offering a disciplined and structured approach to wealth creation. Unlike traditional investment methods, SIPs allow investors to mitigate the impact of market volatility through rupee-cost averaging and compounding benefits. This study aims to examine the risk-return performance of SIPs in the Indian mutual fund industry over the last decade.The research is based on secondary data collected from the Association of Mutual Funds in India (AMFI) and leading fund databases. A sample of equity, hybrid, and debt mutual fund schemes was selected to analyze monthly SIP investments over a 5–10 year horizon. Statistical tools such as mean return, standard deviation, coefficient of variation, Sharpe ratio, and beta were employed to assess performance.The findings indicate that SIPs in equity and hybrid funds generate superior long-term returns while significantly reducing risk compared to short-term horizons. SIPs in debt-oriented funds, though offering lower returns provide stability and act as a safe option for risk-averse investors. Overall, the results reaffirm SIPs as an effective strategy for retail investors seeking consistent returns and reduced market timing risk.This study contributes to the growing body of literature on investment behavior and provides practical insights for investors, fund managers, and policymakers in enhancing financial inclusion through systematic investing.

***Keywords**: Systematic Investment Plan, Mutual Funds, Risk-Return, Indian Capital Market*

ICEMSS

Monetary rates and economic growth: Cross country evidences

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Abstract:

Monetary and economic policy of a country considers different macroeconomic variables for an effective and desirable economic growth. The paper is aimed to understand the impact of key monetary rates (deposit, lending, money market) on the economic growth across a sample of multiple countries. The research is based on a panel data for the period 2000-2023 and applies the panel data technique along with causality analysis to understand the macro-economic dynamics. Apart from descriptive analysis, correlation and regression analysis is also done to draw conclusions. It observed that none of the three regressors (separately and jointly) were able to explain the economic growth significantly. The fixed effect model demonstrated a better fit than the random effect model. The research adds to the existing literature for an effective monetary policy implementation.

Keywords: *Monetary rates; cross country; GDP; panel data; macroeconomic*

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FIN-TECH Adoption in Digital Banking: A Structural Equation Modeling Study on User Adoption and Security in India

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Abstract:

FIN-TECH innovations have revolutionized digital banking in India by enhancing accessibility, efficiency, and customer experience. However, issues of trust, awareness, and security continue to shape consumer adoption. This study examines the impact of critical factors influencing digital banking adoption through FIN-TECH applications, focusing on 200 Axis Bank customers in Hyderabad, Telangana. A stratified random sampling method was employed, and Structural Equation Modeling (SEM) was used to analyze determinants such as perceived ease of use, trust, bank credibility, risk, convenience, and service quality. Reliability was tested through Cronbach's alpha and exploratory factor analysis to ensure measurement consistency. The findings reveal that while customers value the convenience and speed of FIN-TECH-enabled services, perceived risks and security concerns remain major barriers to adoption. The study suggests that banks must strengthen security frameworks, raise customer awareness, and implement robust policies to foster greater trust and adoption. These insights provide valuable guidance for policymakers and banking institutions in shaping secure and customer-centric FIN-TECH ecosystems.

Keywords: *FIN-TECH, Digital Banking, Customer Perception, Security, Structural Equation Modeling.*

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Financial Leverage, Debt Structure, and Their Influence on Credit Ratings: Evidence from Indian Banking, Manufacturing, Telecom, and Infrastructure Sectors (2015–2024)

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Abstract :

The current study examines the impact of financial leverage and debt structure on credit ratings using a sample of 80 Indian listed firms in four key sectors: banking, manufacturing, telecom, and infrastructure. Utilizing secondary data from FY2015–2024 annual reports of CMIE Prowess, NSE, BSE, and CRISIL/ICRA databases, and the paper analyzes financial ratios like debt–equity ratio, interest coverage ratio (ICR), long-term debt percentage, return on assets (ROA), and profit margin. Excel-based descriptive statistics, correlation, and regression analysis were used for measuring to what degree leverage and debt characteristics affect credit ratings. Findings indicate that elevated debt–equity and poor ICR appreciably lower credit ratings, with the telecom and infrastructure sectors being particularly affected, whereas manufacturing companies show greater resilience. The findings offer practical implications for investors, credit rating agencies, and policy-makers in their evaluation of firm-level credit quality and sectoral risk.

Keywords: *Credit Ratings, Financial Leverage, Debt Structure, Banking Sector, Telecom, Infrastructure, Regression Analysis, India*

ICEMSS

Assessing the Role of FinTech in Financial Inclusion in Emerging Markets

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Abstract:

Financial inclusion remains a significant challenge in emerging markets, where about 1.4 billion adults lack access to basic financial services. This study explores how FinTech can help improve financial inclusion using a framework that looks at access, usage, and quality. We used Principal Component Analysis to create a financial inclusion index based on indicators and System GMM econometric modeling to examine the causal relationships between FinTech adoption and inclusion outcomes. The research identifies necessary conditions for achieving benefits, such as minimum smartphone penetration, internet connectivity, and digital literacy. Network effects and complementary systems play a key role. Coordinated development of digital identity, payment systems, and regulatory frameworks can create greater benefits. Policy implications highlight the importance of approaches that bring together FinTech innovation, targeted digital literacy programs, and adaptable regulatory frameworks. The study recommends setting up regulatory sandboxes, proportional supervision, and inclusive design principles to maximize development goals while ensuring fair access.

Keywords: *financial inclusion, emerging markets, regulatory sandboxes, financial technology, development finance, digital transformation.*

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Business Sustainability and CSR: Strategic Pathways to Long-Term Value Creation

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Abstract:

In contemporary business environments, the growing complexity of global markets, climate change, and social inequalities has intensified the importance of sustainability and corporate social responsibility (CSR). Business sustainability emphasizes a long-term balance between economic growth, environmental stewardship, and social equity, while CSR reflects the ethical and voluntary responsibilities of firms to contribute to society beyond legal compliance. This paper examines the theoretical foundations, practical applications, and challenges of integrating CSR and sustainability into corporate strategies. Drawing on secondary sources, it highlights how CSR initiatives serve as mechanisms for achieving sustainability through stakeholder engagement, innovation, and alignment with global frameworks such as the United Nations Sustainable Development Goals (SDGs). Real-world cases, including Unilever, Tata Group, Tesla, and Patagonia, demonstrate how companies embed CSR into their sustainability agendas to create long-term value. Findings suggest that CSR and sustainability are no longer peripheral obligations but strategic imperatives essential for legitimacy, competitiveness, and resilience. The paper concludes by outlining theoretical, managerial, and policy implications while identifying areas for future research, including digital technologies, cross-country comparisons, and small and medium-sized enterprises (SMEs).

Keywords: *Business Sustainability, Corporate Social Responsibility, Stakeholder Theory, Sustainable Development Goals, Corporate Governance, Innovation*

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Green Bonds and Corporate Performance: An Empirical Study of Indian Listed Companies

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Abstract:

Green bonds have emerged as a significant financial device that connects sustainable objectives with access to capital in the corporate sector. While the global green bond market has quickly progressed, there is relatively little research on the post-issuance financial performance of companies in India. This paper explores the financial performance of a sample of select listed companies in India on Key Performance Indicators (KPIs), stock market performance, and investor response relating to the issuance of green bonds, across the period of 2016 to 2024. By employing a mixture of event study methodology, Ordinary Least Squares (OLS) regression, Granger causality, and GARCH based models, we explore both internal performance measures (profitability, liquidity, and valuation ratios), as well as external performance measures (abnormal stock returns and stock market volatility). Early evidence indicates that firms that issue green bonds, have improved profitability ratios (ROA, ROE), better operating efficiency ratios, and positive cumulative abnormal stock returns following the announcement of new green bond issues. While the effects of volatility are more mixed, the results suggest that investor hesitancy to adopt alternative sources of capital is affected by governance and credible disclosure issues. The outcomes of this study contribute to the existing sustainable finance literature by providing India based empirical evidence and are of significant interest to regulators, issuers and investors alike.

Keywords: *Green bonds, sustainable finance, financial performance, event study, OLS regression, Granger causality, GARCH models, stock market reaction, corporate profitability, India.*

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Enhancing Service Delivery through SHRM: A Study of Civil Engineering Consultancies in Hyderabad, India

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Abstract:

This study investigates the relationship between Service Quality and Strategic Human Resource Management (SHRM) in civil engineering consultancies in Hyderabad, India. Using the SERVQUAL-HR framework, a case study was conducted with 90 employees at Consulting Engineers Pvt. Ltd. to identify key human resource drivers of service quality and validate the integrated SERVQUAL-SHRM model. Data was analysed through descriptive statistics, correlation, factor analysis, and sentiment analysis of employee perceptions. The findings reveal notable strengths in ―ethical standards‖, ―project risk responsibility‖, and ―team confidence‖. Factor analysis identified a dominant ―HRM–Service Quality Orientation‖ factor, explaining over 80% of the variance in employee responses. Sentiment analysis further indicated that ―workplace facilities‖ and ―employee contributions to service quality‖ received the highest positive sentiment. ―Workplace design‖, ―professionalism‖, ―timely project completion‖, ―effective communication‖, and ―access to advanced tools‖ were highlighted as critical determinants of service quality outcomes.

The study provides practical recommendations, including ―targeted training programs‖, ―strategic workplace design‖, alignment of ―performance appraisals with service quality‖, and robust ―communication‖. By validating the SERVQUAL-SHRM framework in the Indian context, this research offers a holistic understanding of the Human Resource (HR) – Service Quality nexus and actionable strategies for enhancing consultancy performance.

Keywords: *Civil Engineering Consultancies, Employee Perceptions, SERVQUAL-HR Framework, Service Quality Outcomes, Strategic Human Resource Management (SHRM).*

Kannada Word Sense Disambiguation using Supervised Machine Learning

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Abstract:

Word Sense Disambiguation (WSD) is a key step in natural language processing, especially in highly inflected languages like Kannada. This study looks at using machine learning models, including Random Forest, Logistic Regression, and Linear SVC, to clarify the meaning of polysemous words based on context. We extract features using TF-IDF and address class imbalance with SMOTE. We compare the classification accuracies of these models. The results show that the supervised approach effectively captures the subtle distinctions in meaning in Kannada and performs better than non-machine methods.

Keywords: *Kannada Language, Machine Learning, Word Sense Disambiguation, Natural Language Processing, TF-IDF Vectorization, Random Forest Classifier, Logistic Regression, Linear SVC, SMOTE, Contextual Text Analysis, Supervised Learning, Classification Models, Semantic Ambiguity, Morphologically Rich Languages, Lexical Semantics.*

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The Impact of Social Media Influencers and 'FinTok' on Retail Investor Behavior and Market Volatility

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Abstract:

This study examines the growing influence of social media platforms and financial influencers, or "finfluencers," on the behaviors of retail investors and broader market volatility. The rise of platforms like TikTok, leading to the emergence of the "FinTok" subculture, has democratized access to financial information but also introduced new risks. Finfluencers, often lacking professional credentials, leverage their large followings and parasocial relationships to dispense investment advice and promote specific stocks, cryptocurrencies, and other financial products. This research investigates the mechanisms through which this influence operates.

The analysis finds that finfluencer recommendations can lead to coordinated herding behavior among retail investors, driving rapid and often short-lived price increases in promoted assets. This phenomenon, fueled by the Fear of Missing Out (FOMO), can create significant though temporary market volatility, particularly in small-cap stocks and speculative assets. Furthermore, the findings suggest that reliance on finfluencers is inversely related to an investor's financial literacy, with less informed individuals being more susceptible to speculative advice and potential market manipulation.

The paper concludes that while social media has the potential to increase financial engagement and literacy, the unchecked influence of finfluencers poses systemic risks. The speed at which information (and misinformation) spreads can create asset bubbles and sudden market downturns, challenging traditional market stability mechanisms. The study highlights the urgent need for a regulatory framework to address the ethical and legal implications of finfluencer activities, ensuring greater transparency and investor protection in an increasingly digital financial landscape.

Keywords: *FinTok, financial literacy, herding behavior, market volatility, retail investors*

Gourdtify: An Application for Sex Identification and Classification of Gourd Types in Flowers

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Abstract:

Urban agriculture faces a growing challenge due to the decline of natural pollinators caused by pollution, urbanization, and habitat loss. In response, this study developed Gourdtify, a mobile and web-based application designed to identify the sex and variety of gourd flowers—specifically bottle gourd (upo), bitter gourd (ampalaya), and sponge gourd (patola)—to assist in manual pollination. The application uses image processing techniques and incorporates educational content and a forum system to support urban growers in enhancing their pollination efficiency. A mixed-methods approach was employed, with data gathered from 150 respondents, through surveys assessing pollination challenges, technology acceptance, and training gaps. Results indicated that over 85% of respondents acknowledged a decline in pollinators and difficulties with unpollinated flowers. Post-deployment evaluations with 100 gourd cultivators showed high satisfaction rates regarding the app's ease of use, accuracy in flower identification, and impact on pollination success. Furthermore, over 90% agreed to adopt Gourdtify in their farming practices. The findings demonstrate that Gourdtify provides an effective, accessible solution for enhancing pollination through digital tools in areas where natural pollinators are scarce. It bridges the gap between traditional farming knowledge and modern technology, promoting sustainable urban agriculture and increasing gourd productivity.

Keywords*: Gourdtify, manual pollination, urban agriculture, gourd flower identification, image processing, sustainable farming, digital agriculture, Cucurbitaceae, sex classification,*

Bridging Law, Culture, and Society: Interdisciplinary Pathways to Women's Rights and Equality

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Abstract:

Women's rights are a worldwide issue that cuts beyond social, cultural, and legal divides. Even though constitutional democracies guarantee equality, women's rights and prospects are frequently restricted by long-standing patriarchal customs. This essay examines the conflict between patriarchy and equality in India, placing it in a larger, multidisciplinary framework of governance, culture, and law. By connecting fields like gender studies, political science, sociology, and legal studies, the study demonstrates how teamwork may encourage creativity in tackling structural injustice. Gender hierarchies have been perpetuated by cultural traditions, which have historically formed communal identity. For example, until gender parity was adopted in 2005, inheritance laws under the Hindu Succession Act of 1956 represented patriarchal bias. In a similar vein, customs like child marriage and dowries continue because they are accepted in society, even in the face of the Prohibition of Child Marriage Act (2006) and the Dowry Prohibition Act (1961). When law and tradition clash, judicial interventions such as Shayara Bano v. Union of India (2017), which invalidated triple talaq, and Indian Young Lawyers Association v. State of Kerala (2018), which upheld women's admission to Sabarimala temple, show how courts can be transformative change agents. However, interdisciplinary cooperation and governance procedures are necessary for legislative reforms to be effective. Laws by themselves cannot end patriarchy; in order to guarantee compliance and cultural change, discussions among sociologists, educators, legislators, activists, and communities are necessary. The obligation of states to confront traditions that sustain inequality is further emphasized by international human rights frameworks like CEDAW. In order to break down patriarchal barriers, this study contends that tackling women's rights through an interdisciplinary lens—integrating legal reforms, cultural changes, governance initiatives, and societal awareness—offers creative solutions. These methods support inclusive governance and sustainable development in addition to advancing gender equality. Through interdisciplinary collaboration, the study emphasizes that a culture based on human rights and constitutional morality must replace patriarchal customs in order to achieve true equality.

***Keywords**: Constitutional Morality, Cultural Traditions, Gender Equality, Human Rights, Interdisciplinary Governance, Women's Rights Patriarchy*

Smart 3D Bioprinting Using Acoustic Signals and Machine Learning

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Abstract:

Ensuring print quality in 3D bioprinting is crucial for fabricating viable tissue structures and optimizing process reliability. This study proposes a convolutional neural network (CNN)-based framework for real-time classification of bioprinted constructs using acoustic signatures. Audio signals from the bioprinting process were recorded and converted into spectral images using Mel-Frequency Cepstral Coefficients (MFCCs). Harmonic Percussive Source Separation (HPSS) was applied to enhance feature extraction by isolating key signal components. A CNN model was trained to classify bioprinted samples into four quality categories: No Deposition (ND), Uniform Construct (UC), Structural Collapse (SC), and Nozzle Occlusion (NO). The model demonstrated high classification accuracy, effectively identifying deviations from optimal print conditions. This non-invasive, real-time monitoring approach preserves sterility while enhancing quality assurance in tissue engineering, regenerative medicine, and biopharmaceutical production within the Industry 4.0 framework.

Keywords: *3D Bioprinting, Audio Signature, Convolutional Neural Network, Harmonic Percussive Source Separation.*

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Informational Text Exposure and Librarians Assistance in Relation to Pupils Academic Performance

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Abstract:

Informational texts are essential resources that enhance pupils' vocabulary, background knowledge, and engagement with factual content. Librarians play a crucial role in supporting pupils' exposure to these texts, which may influence their academic performance. Using a descriptive-correlational design, this study examined the relationship between exposure to informational texts, librarian support, and academic performance among 107 Grade Six pupils in a private elementary school in Cagayan de Oro City during the school year 2023–2024. Data were collected through a validated questionnaire and academic records in English, Science, Mathematics, and Civics, and analyzed through descriptive statistics and Spearman's rho. Findings revealed moderate exposure to periodicals and high use of references and textbooks. Pupils achieved good performance in Science and Civics but only satisfactory results in English and Mathematics. Librarians' assistance in guiding pupils toward informational texts was rated high, with results showing no significant association between exposure and academic performance but a strong relationship between exposure and librarian support. These results underscore the librarian's critical role in fostering engagement with informational texts and point to the need for greater alignment between library programs and classroom instruction. Recommendations include strengthening teacher–librarian collaboration, extending library hours, and examining additional factors such as reading comprehension and text complexity to optimize learning outcomes.

Keywords: *Library and Information Science, informational texts, academic performance, descriptive-correlational design, Cagayan de Oro City, Philippines*

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Financial Literacy of Executives and Its Impact on the Financial Practices of Startups in Bengaluru

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Presidency University[1,2]

Abstract:

This study investigates the influence of executive's financial literacy on the financial management practices of startups in Bengaluru. As startups operate in highly dynamic and resource-constrained environments, the financial competence of their leaders plays a crucial role in ensuring sustainability and growth. Drawing upon financial literacy and human capital theories, the study explores how executives' understanding of budgeting, investment decisions, financial planning, and risk management affects overall financial performance. Using a quantitative research design, data were collected from executives of selected startups across various sectors in Bengaluru. Statistical analyses, including correlation and regression techniques, were employed to examine the relationship between financial literacy and financial management practices. The findings indicate a significant positive association between the two variables, suggesting that higher levels of financial literacy among executives lead to more effective financial decision-making and control mechanisms. The study contributes to the growing body of literature on entrepreneurial finance and emphasizes the need for structured financial education programs to strengthen managerial capabilities within the startup ecosystem.

Keywords: *Financial literacy, Financial management practices, Executives, Startups, Entrepreneurial finance, Bengaluru*

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Adaptive Feature Extraction and Weighting for Crime Detection in Heterogeneous Multimodal Data

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Abstract:

The proliferation of heterogeneous multimodal data from sources such as social media, CCTV, official crime reports, and demographic records presents a significant opportunity for enhancing crime detection and prediction systems. However, the effective integration and analysis of such diverse data streams remain a considerable challenge. Existing methodologies often employ static feature extraction and fusion techniques, which may not optimally capture the complex and dynamic nature of criminal activities. This paper proposes a novel framework for adaptive feature extraction and weighting designed to improve the accuracy of crime detection. Our approach dynamically adjusts the feature extraction process based on the intrinsic characteristics of each data modality and assigns adaptive weights to the fused features, reflecting their relevance and quality. The framework integrates advanced deep learning architectures for processing diverse data types—Convolutional Neural Networks (CNNs) for image and video data, and Recurrent Neural Net- works (RNNs) with attention mechanisms for textual data. An adaptive weighting mechanism, leveraging an attention-based model, dynamically balances the contribution of each modality to the final crime detection model. We outline an experimental methodology using publicly available datasets, such as the UCF- Crime and the ROXANNE dataset, and define a comprehensive set of evaluation metrics, including accuracy, precision, recall, F1-score, and Area Under the Curve (AUC). The proposed framework is expected to outperform traditional methods by providing a more nuanced and context-aware approach to crime detection.

Keywords:*Crime Detection, Multimodal Data Fusion, Adap- tive Feature Extraction, Adaptive Weighting, Deep Learning, Heterogeneous Data.*

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Advancing Inclusive Economic Development Through Transformative Policy Frameworks in Asia: Addressing Inequality, Poverty, and Sustainable Growth in the 21st Century

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Sundaland Researchers Society and Masyarakat Peneliti Mandiri Sunda Nusantara

Indonesia

Abstract:

Asia has emerged as the global engine of economic growth, with the region contributing over 60% of global GDP growth in recent years. However, this remarkable economic transformation has been accompanied by widening income disparities, persistent poverty in rural areas, and unequal access to economic opportunities across different demographic groups. This study critically examines the role of inclusive policy frameworks in fostering equitable economic development across Asian economies, addressing the fundamental challenge of ensuring that economic growth translates into shared prosperity for all segments of society. The research employs a mixed-methods approach, combining quantitative analysis of economic indicators with qualitative assessment of policy implementations across ten Asian countries, including Indonesia, India, China, Vietnam, Thailand, Malaysia, Philippines, Bangladesh, Pakistan, and Sri Lanka. The study investigates three primary dimensions of inclusive economic development: geographic inclusivity addressing urban-rural disparities, sectoral inclusivity focusing on formal and informal economy integration, and demographic inclusivity encompassing gender equality, youth employment, and elderly welfare. Our analysis reveals that successful inclusive development policies share common characteristics: strong institutional frameworks, transparent governance mechanisms, targeted social protection programs, and investments in human capital development. Countries that have achieved notable progress in inclusive growth, such as Vietnam and Indonesia, demonstrate effective integration of microfinance initiatives, conditional cash transfer programs, and community-based development projects that directly empower marginalized populations. These interventions have proven particularly effective in reducing extreme poverty while simultaneously promoting entrepreneurship and small-medium enterprise development. The study highlights the transformative potential of digital technology in advancing financial inclusion and expanding access to markets, education, and healthcare services. Digital payment systems, e-commerce platforms, and online education initiatives have enabled millions of previously excluded individuals to participate in the formal economy. However, the research also identifies significant challenges, including the digital divide that disproportionately affects rural communities, elderly populations, and women in conservative societies. Post-pandemic recovery presents both challenges and opportunities for inclusive economic policy in Asia. The COVID-19 crisis has exacerbated existing inequalities, with informal sector workers, migrant laborers, and small businesses bearing disproportionate economic impacts. However, the pandemic has also accelerated digital transformation and highlighted

the critical importance of universal healthcare, social safety nets, and adaptive governance systems. The study examines innovative policy responses, including universal basic income pilots, expanded social insurance coverage, and green economy transitions that prioritize just transition principles.

Furthermore, this research explores the intersection between inclusive economic policies and environmental sustainability, arguing that true inclusive development must address climate vulnerability and environmental degradation that disproportionately affect poor and marginalized communities. The paper analyzes successful models of green inclusive growth, including renewable energy projects that create local employment, sustainable agriculture initiatives that enhance food security, and circular economy frameworks that generate economic opportunities while protecting environmental resources.

The study concludes with comprehensive policy recommendations organized around five pillars: strengthening social protection systems, promoting financial inclusion through innovative mechanisms, investing in quality education and vocational training, ensuring gender-responsive policy design, and fostering regional cooperation for shared prosperity. These recommendations emphasize the need for context-specific approaches that recognize Asia's diversity while leveraging regional integration frameworks and South-South cooperation mechanisms. Ultimately, this research contributes to the ongoing dialogue on achieving Sustainable Development Goals by demonstrating that inclusive economic policies are not merely moral imperatives but strategic necessities for long-term sustainable development in Asia.

Keywords: *Inclusive growth, economic development, Asia-Pacific, poverty reduction, inequality, social protection, financial inclusion, digital transformation, sustainable development goals, policy frameworks, post-pandemic recovery*

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Building Public Health Resilience: Lessons from COVID-19 for Future Health Crises in Zamboanga City

Lean Monique A. Legarde[1], RN, MPA, DPA Cand., [2]Emrissa Jane L. Tendero, RN, MPA, DPA Cand.[2], Al-Ghani D. Mohammad, RN, MPA, DPA[3], [4]Wafia S. Sajili, RN, MN, Ph.D. [4]

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Abstract:

The rapid consumption of global resources and increase in environmental challenges it is important to study Circular Economy and its role in achieving Sustainable Development. This study conducts a comprehensive literature review accompanied by bibliometric and network analysis to examines global research trends, collaboration patterns, and emerging themes in CE–SD research from 2010 to 2025. Co-authorship and keyword co-occurrence analysis identify top countries, research clusters, and significant theme areas, with a particular focus on environmental and economic factors, while social and institutional aspects are unexplored. This paper also observes how technical advancements like Industry 4.0, the Internet of Things (IoT), and life cycle assessment are increasingly being used to support circular practices. Based on these findings, further study directions are suggested, with a focus on social equity, organizational problems, regulatory constraints, and the practical implementation of circularity indicators and business models. The paper provides a thorough analysis and conceptual framework to help policymakers and researchers enhance CE for sustainable development.

Keywords: *Circular Economy, Sustainable Development, Circular Business Models, Life Cycle Assessment, Resource Efficiency.*

ICEMSS

Organizational Change Readiness of Administrative and Teaching Personnel of State Universities and Colleges in Zamboanga City, Philippines

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Western Mindanao State University, Philippines

Abstract:

This study investigates organizational change readiness among administrative and teaching personnel of state universities and colleges (SUCs) in Zamboanga City, Philippines. Using a descriptive-correlational design, the research study surveyed three hundred five (305) participants from three (3) major SUCs, employing stratified random sampling. Data were collected through an Organizational Change Readiness Assessment questionnaire and a demographic survey questionnaire. Results revealed a moderately high overall change readiness score (M=3.72, SD=0.61) among personnel. Significant differences were found between administrative and teaching personnel, with administrative personnel demonstrating higher readiness levels (M=3.85, SD=0.58) compared to teaching personnel (M=3.62, SD=0.62). Educational attainment and years of service emerged as influential factors, with postgraduate degree holders and those with 5-10 years of service exhibiting higher readiness scores. The study also identified a strong positive correlation between perceived organizational support and change readiness (r=0.48). These findings emphasize the value of tailored change management strategies that address the unique characteristics and concerns of different personnel groups within SUCs. The research study concludes that while there is a foundation of change readiness among SUCs in Zamboanga City, there is substantial room for improvement. Recommendations include developing targeted strategies for different personnel groups, promoting continuous professional development, leveraging mid-career employees as change champions, and strengthening organizational support systems. These insights contribute to a better understanding of change readiness in higher education institutions and provide practical implications for leaders and change managers in the Philippine context.

Keywords:: *Organizational Change Readiness, Administrative Personnel, Teaching Personnel, State Universities and Colleges*

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Integrated IoT-Enabled Dual Battery System Enhancing Range and User Experience in E-Vehicles

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Abstract:

Range anxiety and charging issues continue to be obstacles to the widespread adoption of electric vehicles (EVs). According to research, more than 75% of prospective EV users worry about running out of battery before being able to charge. To improve EV reliability, this study suggests a dual-battery management system with adaptive switching capabilities that runs in real-time and has an easy-to-use dashboard interface. When the primary battery reaches a predetermined threshold, the dual-battery system uses voltage and current sensing to automatically switch from the primary pack to the secondary pack, enabling the EV to run continuously without the need for user intervention to recharge or switch batteries. Real-time battery status, reserved slot locations for charging stations, and predictive algorithms for estimating battery maintenance and remaining life are all displayed on the dashboard. Validation studies show that this design has a positive effect on the EV's operational range, charging times, and customer confidence in EV ownership.

Keywords:: *Electric vehicles (EVs), Dual-battery management system, Adaptive switching, Range anxiety, Real-time monitoring, Battery health prediction, Charging infrastructure, Predictive maintenance, User dashboard, EV reliability.*

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Multimodal Temporal Modeling of YouTube Trends using Metadata and Natural Language Features

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[1,2,3,4,5] *Chandigarh University, Mohali Punjab, India*

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Abstract:

Understanding and predicting the trending content on YouTube is important for content creators, marketers and content managers of the platform. Existing approaches mainly depend on either numerical metadata, such as views and likes or text features of video titles and descriptions, but their predictions have low accuracy. This research proposes a novel approach as multimodal fusion combining metadata together with natural language embeddings using transformer-based models such as BERT. LSTM is being used for the modeling of temporal dynamics of video performance and Temporal Convolutional Networks, allowing us to predict whether a video becomes trending within a period of time after its release. Experimental results show that the combination of text and numerical features can provide considerably better trend prediction results than unimodal baselines. The findings provide practical insights about how to best optimize content, and help promote the growth of social media analytics.

Keywords: *YouTube trend prediction, multimodal modeling, BERT embeddings, metadata analysis, temporal neural networks, LSTM, temporal CNN, feature fusion, social media analytics.*

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EPN: A Human-Centric System for Neutralizing Emotionally Manipulative Phishing Attacks

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Abstract:

Phishing attacks today frequently use emotions like urgency, curiosity or fear to trick people. The Emotional Phishing Neutralizer (EPN) is design to stop these kind of threats by the messages in actual time. Its uses machine language processing to detect emotional manipulation in web interactions, emails and chats. The system giving fast and clear alerts. Then the users able to alert before damage occurrence. EPN minimize threats by spotting tricks that filters may be ignore. It can setup on local servers or cloud then keep data safe and followed privacy rules. This is flexible, and works will across platforms. Its handle new phishing methods. Ovrerall, the EPN provides a strong gateway of organization and individuals.

Keywords: *Phishing Detection, Artificial Intelligence.*

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Personal Safety Keychain Using IoT

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Abstract:

Personal security is a key global problem, particularly for vulnerable groups in urban and remote places, and current solutions are sometimes limited by lack of portability, cellular network dependency, and subscription fees. The new Smart Personal Safety Keychain, an Internet of Things (IoT) gadget that gets beyond these restrictions using a hybrid architecture, is designed, implemented, and evaluated in this study. A NEO-6M GPS module and an ESP32 microcontroller are used in the system to collect position data, which is subsequently analyzed and transmitted via Bluetooth Low Energy (BLE) to a custom Android application. The system's primary novelty is that it employs a smartphone as a gateway, sending emergency notifications to pre-defined contacts via SMS that includes real-time geocoordinates and a deep link to Google Maps. This eliminates the need for a separate GSM module inside the keyring. Experimental results demonstrate reliable operation in a range of outside settings, successful coordinate acquisition with an average precision of ≤5 meters, and an end-to-end alert latency of less than 15 seconds, confirming the system's efficacy. The project unquestionably establishes a framework for developing extremely portable, reasonably priced, and energy-efficient personal safety solutions that enhance public safety by utilizing ubiquitous smartphone connectivity.

Keywords: *Emergency Alert System, , ESP32, GPS, NEO-6M, Safety.*

Reimagining Learning Modules: A 3D Interactive Approach to Conceptual Understanding

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Abstract:

Two-dimensional representation formats (textbook and flat illustration) are inadequate to illustrate the complex nature of subject matter (biology, chemistry, physics), therefore; an Interactive Flashcard System using 3-Dimensional Visualization was created to enhance student understanding of these topics. This system allows students to interactively view, explore, rotate, and zoom 3-Dimensional Models of concepts they are studying from the comfort of their own computer via a web browser and without the necessity of installing new software. This enhances the study process by allowing students to be more engaged and immersed in the material. Additionally, the system includes explanatory Voice Overs, Gesture Based Interaction and Simplified Navigation for an un-interrupted learning experience. In contrast to traditional flashcards which use static images and text, this system uses Visual Perception, Interactive Narration and Experiential Engagement. In this way, the system focusing on dynamic visual effects and synchronized audio is expected to help in better understanding of concepts and visualizing of some abstract points. In such a way, the project aims to boost the level of conceptual clarification and participation among all categories of learners for the sake of enhanced quality and accessibility of the learning model.

Keywords: *3D visualization, interactive flashcard system, web-based learning, gesture-based interaction, voice-over narration, experiential learning, dynamic visual aids, conceptual understanding.*

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Sleep Disorder Detection

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Abstract:

Due to limited access to ongoing monitoring and diagnostic techniques, sleep disorders like insomnia and sleep apnea frequently go misdiagnosed while having a substantial impact on people's physical and mental health. Using the Sleep Health and Lifestyle Dataset, which comprises a wide range of behavioral and health characteristics like cardiovascular mea- surements, physical activity, stress levels, and sleep length, this study uses machine learning to identify sleep problems. Random Forest, Support Vector Machine (SVM), Logistic Regression, Naive Bayes, and a deep learning-based Convolutional Neural Network (CNN) were among the models we implemented and assessed. Recall, accuracy, precision, and F1-score were used for learning and assessing the models. The CNN scored above all other models, suggesting that deep learning may be able to capture intricate patterns linked to sleep disorders. Our research indicates that automated, data-driven sleep disorder diagnosis is feasible, providing a basis for future incorporation into early diagnostic tools and health monitoring systems.

Keywords: *Sleep Disorders, Machine Learning, Convolu- tional Neural Network (CNN), Sleep Health and Lifestyle Dataset, Early Diagnosis, Health Monitoring.*

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Predicting Cryptocurrency Market Bubbles Using Machine Learning and Sentiment Analysis

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Abstract:

The fast growth of the FinTech sector, especially in the area of cryptocurrency, has introduced both exciting opportunities and significant financial instability. Unlike traditional assets, digital currencies are known for their extreme ups and downs, leading to frequent and dramatic price collapses known as "market bubbles." These events pose a major challenge for risk management and financial planning. This paper addresses the critical need for new analytical tools to manage this high volatility by developing a robust method for predicting these bubbles before they burst. Our central idea is that investor psychology—specifically, collective fear and greed as expressed online—is a key driver of these price extremes. The study integrates two different types of data: historical market prices and the unstructured chatter found on social media platforms. We employ Text Mining and Natural Language Processing (NLP) techniques to effectively read and quantify millions of posts, transforming this large volume of raw text into measurable "sentiment scores." These scores indicate the overall mood of the market. To establish the predictive power of this sentiment, we first use Granger Causality tests. This helps us confirm that changes in public mood actually happen before and influence price movements, instead of merely reacting to them. The cleaned data, including both sentiment metrics and historical prices, is then fed into advanced Machine Learning algorithms. We utilize Random Forest and Support Vector Machines (SVM) for classification. These programs are specifically designed to analyze complex patterns and classify the current market state into a simple, practical outcome: either a "Normal Market" or a high-risk "Bubble Warning." This research provides a highly practical framework for risk analytics, offering managers and engineers a valuable early warning system that surpasses traditional financial models. By connecting modern data science with financial market dynamics, this paper contributes to the Management and Engineering communities by demonstrating a successful application of cutting-edge predictive technology in a volatile digital financial environment.

Keywords: *Cryptocurrency, Machine Learning, Sentiment Analysis, FinTech, Market Bubbles, Natural Language Processing (NLP), Predictive Analytics.*

Multiple-Criteria Decision Analysis of Flanged Nozzle-Diffuser Shaped Wind Velocity Accelerator Models

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Abstract:

Use of wind velocity accelerators is an important research nowadays for small wind turbine performance enhancement. They have the ability to meet the growing needs of energy demand even at low windy areas. Most of the previously reported research works are predicting the performance on the basis of maximum velocity values reported during Computational Fluid Dynamics (CFD) analysis. However, it is important to note that, it should be on the basis of average velocity available at the rotor plane. The value of average velocity is considerably smaller than that of the maximum CFD reported velocity. In addition to this to reduce uneven loading on the wind turbine blade, the velocity variation should be as minimal as possible. Hence, the performance of the diffuser should be measured on the basis of average radial velocity and radial velocity variation. Further, it is identified that the performance of these accelerators is the combined effect of overall dimensions of the accelerator. Hence, it is important to get the better accelerator model which can enhance the wind velocity significantly and with low velocity variation. In addition to this in order to make the accelerators feasible, its mass should be as low as possible. In this research work, nine models of flanged nozzle-diffuser shaped wind velocity accelerators are ranked using four Multiple-Criteria Decision Analysis (MCDA) techniques. For this MCDA three considered criteria include: average radial velocity, radial velocity variation and mass of the model. Average radial velocity and radial velocity variations are taken from the CFD results at a uniform inlet velocity. For all cases throat diameter is fixed. The sensitivity analysis is also carried out to confirm the accuracy of results. The results of four techniques show good agreement.

Keywords: *diffuser, multiple-criteria decision analysis, MCDA, small wind turbine*

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A Review of Diffuser Geometries and Performance Assessment Methodologies for Small Horizontal-Axis Wind Turbines

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Abstract:

The demand for renewable energy producing devices is continuously growing day by day because of global warming issues and limited reserves of fossil fuels. Large wind turbine and solar photovoltaic systems are successfully adopted by many countries as a major source of electricity generation. Small wind turbine utilization for decentralized power fulfilment in low-wind regions can be effectively enhanced using diffusers for wind velocity acceleration. There are different types of diffuser shapes studied by various researchers. Researchers claimed the benefits of their individual research works based on their selected research scope and its aligned limited research. However, it becomes difficult to select an appropriate diffuser shape and size for industrial application as well as for further research focus. Hence, this paper presents a systematic overview of literature based study methods, diffuser shapes, diffuser dimensions, rotor position inside the diffuser, gap between the diffuser and rotor tip and challenges in the industrial acceptability. Further this paper has prepared a simplified approach for selection of suitable diffuser shapes for small wind turbines by considering various factors. These various factors include aerodynamic performance, manufacturing ease, bulkiness, noise and cost, structural stability and durability, flow stability and separation control, ease of transportation and field installation, compatibility with rotor and tower structure, etc. This study provides a simplified practical guide for designers, industries and researchers to select appropriate diffuser shapes. This will help them to develop efficient diffuser augmented small wind turbines in order to make them feasible and acceptable for the sustainable energy production for decentralized application.

Keywords: *Diffuser augmented wind turbine, Small wind turbine, Wind energy, Wind turbine*

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Selection of Working Fluid for inside U-Tube Placed Evacuated Tube Solar Collectors: A Comparative Study

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Abstract:

Use of solar thermal devices is growing day by day for many industrial applications in addition to solar water heating. Performance enhancement of solar thermal energy systems is always an important topic of research. Evacuated Tube Collector (ETC) is a well-accepted solution accepted for domestic applications as well as many industrial applications such as heat storage, Photo-thermal catalysis, desalination, etc. ETC solar collectors are preferred because of their low heat losses, efficient absorption of solar radiation and operational arrangement with stable performance. The efficiency of ETC is depending on its inside environment that is intended to reserve heat and its fast transfer to the working fluid. Performance of ETC can be further increased by using U-tubes inside evacuated tubes and circulating appropriate working fluid through it. These various working fluids may include water, air, glycol mixtures, supercritical CO2, thermal oils and nano-fluids. This paper presents a comparative evaluation of these working fluids in order to select an appropriate working fluid. The study is presented on the basis of thermo-physical properties of these fluids using heat transfer correlations. The various properties considered are thermal conductivity, specific heat, density, dynamic viscosity, operating temperature range, operating pressure range, safety and environmental factors. On the basis of these properties a systematic comparative analysis is performed. For the analysis quantitative as well as qualitative terms are used. Qualitative terms are converted into quantitative terms appropriately. From the analysis it is observed that supercritical CO2 is a best compromised alternative to get better performance from ETC.

Keywords: *diffuser, multiple-criteria decision analysis, MCDA, small wind turbine.*

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Making a case for the use of switched reluctance motors in electric vehicular drive propulsion

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Abstract:

This paper presents a feasibility study for the use of a switched reluctance motor (SRM) drive for electric vehicular propulsion. In recent days, there has been a significant interest on the use of electric vehicles for automotive propulsion. When it comes to the driving motor for the wheels, the most commonly envisaged choices are of permanent magnet (PM) -based motors owing to their efficiency and high power density. However, the major drawbacks of PM-based motors are (i) temperature dependency of magnet, (ii) high cost, (iii) environmentally intensive extraction process of magnets from rare-earth metals. In this context, switched reluctance motors have been widely considered by researchers and EV manufacturers for propulsion, owing to their simple construction, low manufacturing cost, high reliability, etc. There have been studies established to address the main challenges of SRM-viz., torque ripple and vibration, with the help of which, SRM becomes a sustainable, and economically friendly alternative against its PM-based counterparts. This paper presents the constructional details, control architecture, and the important waveforms related to the power architecture of SRM, signifying its use in the power train. Further, this paper also compares an SRM with its counterpart motors, such as BLDC and Induction motor, in terms of the performance parameters from a IDC drive train, thereby validating and demonstrating the usability of SRM for EV propulsion.

Keywords: Switched Reluctance Motor (SRM), Electric Vehicle (EV) propulsion, PM motor limitations, torque ripple reduction, motor control architecture, power train, BLDC and induction motor comparison.

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Upcoming Conferences

