31st FAI INTERNATIONAL CONFERENCE

SUSTAINABLE SYNERGIES

Bridging Technology, Policy and Enterprise for a Greener World
(ICSS–2026)

Sponsored by

Department of Science and Technology, Government of Rajasthan

SOUVENIR

Organized by

Faculty of Management & Commerce and R&D Cell
Poornima University, Jaipur, Rajasthan, India

In Association With

FATER Academy of India
Shinawatra University, Thailand
University of Management and Economics, Cambodia

7th – 9th February 2026

ISBN No. : 978-93-5655-623-2

Reviewers:

Dr. Aarti Chopra

Dr. Bharati Ramtiyal Soni

Designed by:

Mr. Rajesh Omprakash Jakhotiya

Mr. Lokesh Aggarwal

Foreword

The **31st FAI International Conference** on **"Sustainable Synergies: Bridging Technology, Policy and Enterprise for a Greener World (ICSS-2026)"**, organized by the Faculty of Management and Commerce and the R&D Cell, Poornima University, Jaipur, in association with the Fater Academy of India (FAI), stands as a significant global academic initiative addressing one of the most pressing concerns of our time that is sustainability.

As the world grapples with climate change, resource constraints, technological disruptions, and evolving socio-economic priorities, the need for integrated and collaborative approaches has become more critical than ever. Sustainable development today demands the convergence of technological innovation, progressive policy frameworks, and responsible enterprise practices. ICSS-2026 is envisioned as a global platform to explore these intersections and foster dialogue that transcends disciplinary and geographical boundaries.

The conference brings together academicians, researchers, industry experts, policymakers, and young scholars from across the globe to deliberate on emerging trends, challenges, and solutions related to sustainability and green growth. Through keynote addresses, plenary sessions, panel discussions, and research paper presentations, ICSS-2026 seeks to promote high-quality, impactful research, supported by Scopus-indexed publication opportunities, thereby reinforcing global academic standards and research excellence.

The deliberations at ICSS-2026 are expected to generate innovative perspectives on sustainable business models, green technologies, policy integration, ethical governance, and inclusive development. By encouraging interdisciplinary engagement, the conference aims to translate scholarly insights into actionable knowledge that can influence practice, policy, and future research.

Poornima University remains deeply committed to promoting research, innovation, and industry-academia collaboration in alignment with national and global sustainability agendas. The Faculty of Management and Commerce and the R&D Cell have consistently endeavored to create intellectual platforms that nurture critical inquiry, global collaboration, and socially relevant research.

We express our sincere appreciation to all keynote speakers, research contributors, reviewers, panelists, and delegates for their valuable participation. We also acknowledge the dedicated efforts of the organizing committee, faculty members, and student volunteers whose commitment has been instrumental in the successful organization of this conference.

It is our earnest hope that ICSS-2026 will inspire meaningful collaborations, stimulate forward-looking research, and contribute constructively to the collective pursuit of a greener, more sustainable world.

About the Conference

The International Conference on Sustainable Synergies (ICSS-2026) is a pioneering multidisciplinary platform that seeks to foster dialogue, collaboration, and innovation at the intersection of technology, policy, and enterprise to build a sustainable and inclusive future. Under the theme "Sustainable Synergies: Bridging Technology, Policy and Enterprise for a Greener World," the conference will bring together academicians, researchers, practitioners, policymakers, and industry leaders from diverse domains to address pressing environmental, economic, and social challenges.

ICSS-2026 envisions sustainability not as a standalone pursuit, but as a dynamic, integrated framework where scientific innovation, responsible business practices, and inclusive governance converge. The conference will provide an enriching platform for presenting original research, sharing case studies, debating policy solutions, and exploring green technologies that enable resilient ecosystems and equitable development.

Key tracks will include topics such as green finance and responsible investment, sustainable supply chains, environmental ethics, AI for environmental monitoring, public policy for sustainable nations and achievement of UNDP sustainable development goals, renewable energy systems, smart cities, circular economy, sustainability reporting, climate policy, and the role of literature and culture in promoting environmental consciousness.

By encouraging interdisciplinary conversations, ICSS-2026 aims to build bridges between technological advancements and human values, economic growth and ecological balance, and policy interventions and grassroots realities.

Hosted in an academic setting committed to knowledge-driven sustainability, ICSS-2026 invites all changemakers to join this dialogue and contribute to shaping pathways for a greener, fairer, and more resilient world.

About the University

Poornima University (PU) is a state private University in Jaipur, India established by an act of the Rajasthan legislature. PU was established in 2012 with a vision to create a knowledge- based society with scientific temper, team spirit and dignity of labour to face global competition and challenges. PU is recognized by University Grants Commission (UGC) under Section 2(f) and 12(B) with the right to confer degrees as per Section 22 (1) of the UGC Act, 1956. Its architecture

program is approved by the Council of Architecture (CoA) and the hotel management program is approved by NCHMCT. Currently, PU has more than 8000+ students from all over the country enrolled in nine faculties and fourteen departments of UG/PG and PhD Programs in various areas such as Management, Engineering, Computer Application Sciences, Architecture, Design, Public Health and Hotel Management etc.

About Faculty of Management and Commerce

As Services Sector contributes the largest chunk of India's GDP, there are ample career opportunities for Commerce & Management in ever-growing Indian economy. The concept of commerce & management consists of a wide range of interdisciplinary branches including Accountancy, Business Administration, E-Commerce, Finance, Economics and Marketing. One of the key factors that Poornima University develops amongst students is adaptability and hence, flexibility towards advanced training. The knowledge is imparted by using innovative professional certificate courses which specialized skill sets in the areas of finance, accounting etc. Poornima University believes in making business education highly relevant through constant course updates, regular industries interaction, hands-on exposure, able and experienced faculty with right mix of industry and academic experience and more importantly a deep sense of responsibility towards the society at large. The placement of B.Com., BBA & MBA has been a testimony to this success story.

About R&D Cell

Poornima University's Research and Development (R&D) cell is a vibrant centre of research and innovation of the organization, dedicated to advancing cutting-edge research in a variety of subjects & pushing the boundaries of knowledge for promoting advanced research across diverse fields. The R&D cell has a commitment to creating cutting-edge research that addresses pressing issues and creates new opportunities in a broad variety of fields. It is composed of a diverse mix of experts and innovators. We collaborate to address important challenges like healthcare, education, environmental sustainability, and social fairness with an emphasis on interdisciplinary approaches and ethical research approaches. By combining in-depth research, experimentation, and teamwork, we also hope to create novel technologies, solutions, and procedures that advance the objectives of our organization and benefit society. The R&D cell performs a key part in innovation by creating a culture of research and discovery that moves society toward a better and more sustainable future through the dedication of creativity, quality, and impact

About FATER India

This is the 31st International Conference organised by the FATER INDIA. Forum for Advanced Training in Education and Research Academy of India (FAI) functions under the FATER Trust registered at Kanyakumari (Dist.), Tamilnadu, India. Members of FAI are eminent university and college Professors, Technocrats, Scientists, Social scientists, Professionals and renowned persons from various walks of life who believe in academic excellence and knowledge sharing. The goal of FAI is to promote knowledge Society interactive programs in an interdisciplinary manner to address a number of societal problems with the relevant knowledge, practices, and sensitivities across the country and universally. The FAI is striving hard to provide scientific temper among youth by regularly organizing various programs such as International Conferences, Seminars, Symposia and workspace on subjects of current national all across the country organizing various activities to provide skill and training to the youth in the irrespective regions in all major areas.

The journey began in 2016 with the first International Conference of FAI founded by a group of renowned Academicians from the leading institutions of Southern and Northern part of India at Carmel College, Madgaon, Goa, INDIA. The aim was to provide a platform to our younger generations especially from the southern part to India with formal exposure and emerging faculty members. With the backing of leading Academicians across the country, it was a natural progression that an academic institution FAI emerged with a wide perspective along with its effective collaboration with leading institutions from ASEAN and European countries.

A 27-member Executive Council guides the FAI with President Prof. M. Premjit Singh President, FAI, Former Vice-Chancellor, Central Agricultural University (CAU), Imphal, India, Prof. M. Lellis Thivagar Vice President, FAI, Former Professor & Head, School of Mathematics, Madurai Kamaraj University, Madurai, INDIA, Nina Poyda Nosyk, Vice President, FAI, Accounting and Auditing Department, Ferenc Rakoczi II Transcarpathian Hungarian College of Higher Education, Ukraine, H.E. Moun Vesana,Vice President, FAI,Vice Rector, University of Economics and Management, Kampong Champ Campus, Cambodia, Dr. Georgia Irina Oros, Vice President, FAI, Department of Computer Science and Mathematics, University of Oradea, Romania, Maj. Gen. (Retd.) Praveen Kumar, Vice President, FATER Academy of India, Prof. Pankaj Srivastava, General Secretary, FAI Professor and former head, department of mathematics, M.N National Institute of Technology, Allahabad, Prayagraj, India, Prof. Chai Ching Tan, Foreign Secretary, FAI, Rattanakosin International College of Creative Entrepreneurship (RICE), Rajamangala University of Technology, Rattanakosin, Thailand and Dr Natallia Vodenkova, Technical Secretary, FAI along with most eminent academic

secretaries namely Prof. Maria Emilia Camargo, Prof. Pavlo Hryhoruk and Prof. Zinaida Zhyvko and distinguished council members.

About University of Economics and Management, Cambodia

The University of Management and Economics (UME) was founded in 1998 by Dr. TUN Pheakdey. UME boasts a comprehensive range of academic programs spanning from associate to doctoral levels, organized into five faculties: Management and Tourism, Art, Humanity, and Foreign Languages, Science and Technology, Law and Economics, and Agriculture and Rural Development.

Over 25 years, UME holds a distinguished reputation in Cambodia and abroad. In 2021, UME was selected as one of six private universities to implement the Higher Education Improvement Project (HEIP), a joint initiative by the World Bank and the Ministry of Education, Youth, and Sport (MoEYS), focusing on the Agriculture and Accounting program. This project aims to enhance teaching and learning methodologies, fostering University-Industry linkages, and refining institutional governance. Spanning seven campuses, including Battambang as the main campus, Banteay Meanchey, Kompong Cham, Pursat, Preah Sihanouk, Koh Kong, and Kratie, UME continues to be a pivotal force in Cambodian education.

About Shinawatra University

Shinawatra University was established on December 27, 1999, under the license granted to OAI Education Company Limited by the University Affairs Office. The main campus, spanning approximately 300 rai, is nestled in Bang Toei Subdistrict, Sam Khok District, Pathum Thani Province. In 2021, Faith Star (Thailand) Company Limited assumed ownership of the university license. Driven by its vision to become a leading international university, Shinawatra University is committed to developing graduates who possess strong leadership qualities, management skills, and an entrepreneurial spirit, coupled with ethical values and a sense of social responsibility.

Message

मालवीय राष्ट्रीय प्रौद्योगिकी संस्थान जयपुर
(भारत सरकार द्वारा संस्थापित राष्ट्रीय महत्व का संस्थान)
Malaviya National Institute of Technology Jaipur
(An Institute of National Importance under Ministry of Education, Govt. of India)

प्रो. एन. पी. पाढ़ी, FNAE
निदेशक

Prof. N. P. Padhy, FNAE
Director

It is an honor to extend my best wishes to Poornima University for organizing the *31st FAI International Conference on Sustainable Synergies: Bridging Technology, Policy, and Enterprise for a Greener World.* This initiative reflects the University's strong commitment to research excellence, innovation, and sustainable development.

In an era defined by digital transformation and environmental responsibility, the integration of technology, policy frameworks, and enterprise innovation is essential for achieving resilient and future-ready growth. Platforms such as this conference play a pivotal role in fostering interdisciplinary collaboration, generating impactful research, and shaping solutions for global sustainability challenges.

I congratulate Poornima University and the organizing team for curating this meaningful academic platform and wish the conference every success in inspiring progressive ideas and strategic partnerships for a greener future.

Best Wishes,

Prof. N. P. Padhy

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Message

FATER Academy of India (FAI)

Prof. M. Premjit Singh
President, FATER Academy of India (FAI),
President, Society of Extension Education, India
President, Bharat Vikas Parishad, North East Region &
Former Vice- Chancellor Central Agricultural
University Imphal, Manipur
Email: mpremjit55@gmail.com
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Date: 02-02-2026

MESSAGE FROM PRESIDENT, FAI

It gives me immense pleasure to extend my warm greetings and best wishes to the organizers and participants of the 31st FAI International Conference on the theme "Sustainable Synergies: Bridging Technology, Policy and Enterprise for a greener world (ICSS-2026)" scheduled to be held from 7-9 February, 2026 at Poornima University, Jaipur, India.

This conference aims to provide a platform for academicians, researchers, policymakers and industry leaders who are keen to aggregate and extract valuable ideas and solutions with societal implications and sustainability. The exchange of ideas and perspectives on the conference's focal theme and related topics will provide valuable insights into success stories and a profound understanding of sustainable transformation and responsible development in diverse domains.

I extend my heartfelt appreciation to the Organizing Committee and all collaborators for their commendable initiative in orchestrating a multidisciplinary conference in hybrid mode on such a pertinent subject. I wholeheartedly wish the event resounding success and look forward to the impactful contributions that will emerge from the gathering of knowledgeable minds.

(Prof. M. Premjit Singh)

Message

Greetings from SIU, THAILAND!

i m honored to share my best wishes to the Conference
Let's do it!

Best regards,

Assoc. Prof. Zhou Fei
University President
pricechow@siu.ac.th

Shinawatra University, Thailand
www.siu.ac.th
99, Moo 10, Bang Toei, Sam Khok,
Pathum Thani, Thailand, 12160

Message

Maj Gen Praveen Kumar (Retd)
Vice President FAI
Director Accessb Pvt Ltd
Director Map Exso Pvt Ltd

B-1701
Pittie Kourtyard
Kharadi
Pune -411014

MESSAGE

It gives me immense pleasure to be a part of 31st FAI-ICSS 2026 on "Sustainable Synergies: Bridging Technology, Policy & Enterprise for a Greener World" in collaboration with FMC, R&D Cell -Poornima University, Jaipur, India, Shinawatra University, Thailand and University of Economics & Management, Cambodia from 7th Feb to 9th Feb 2026. Being one of the Patrons of the event, I am sanguine of the efforts put in by the office bearers of FAI and collaborating Universities to make this event not only successful but also very useful to the academicians world wide.

I am very happy that I will be attending the Conference physically and will be a witness to this historical academic feat.

Being a multidisciplinary conference I am sure there is a scope for each one of us to contribute and learn. We are very fortunate that a number of overseas academicians are physically joining this conference making it much more interesting and useful.I am very hopeful that the conference will set up new standards of the conduct of an international conference not only in India but also the whole world.

I take this opportunity to extend a warm welcome to all the distinguished guests, speakers and participants of the conference and extend my best wishes for a very fruitful exchange of ideas.

Message

Dear Esteemed Organizers, Distinguished Guests, and Participants,

It is a great pleasure to extend my warmest greetings on the occasion of the **31st FAI International Conference on Sustainable Synergies: Bridging Technology, Policy and Enterprise for a Greener World (ICSS-2026).**

This prestigious gathering is proudly organized by the Faculty of Management & Commerce and the R&D Cell of **Poornima University**, **Shinawatra University**, Thailand and **University of Economics & Management**, Cambodia, in esteemed collaboration with the **FATER Academy of India (FAI).**

This 31st iteration, occurring from **February 7–9, 2026**, continues a proud legacy of FAI fostering academic excellence and interdisciplinary collaboration across the globe. This year's focus on "Sustainable Synergies" required to unite Technology, Policy, and Enterprise is particularly timely, as the integration of Artificial Intelligence (AI) and sustainable practices has become essential for achieving global.

The strength of this conference lies in its inclusivity. **Six transformative themes** have been designed to offer vast possibilities for researchers, practitioners, and policymakers alike. For those advancing the frontiers of Science, Engineering, and Technology to protect our natural world – **Environmental Sustainability Practices and Innovations;** For scholars shaping the regulatory frameworks that ensure long-term global stability – **Policy and Governance for Sustainable Development;** For the visionaries redefining commerce through ethical and eco-friendly enterprise – **Sustainable Business Models and Green Entrepreneurship;** For researchers focused on the human element empowering societies and building local resilience – **Community Participation and Engagement, Awareness, and Capacity Building;** For experts exploring the "Triple Bottom Line" within the global travel and hospitality sectors – **Tourism and Sustainable Practices for People, Profit & Planet;** For the tech innovators leveraging Computational Intelligence to drive efficiency and green digital transformations – **AI, IoT, and Computational Intelligence for Green Innovation and Sustainable Growth.**

A hallmark of this 31st edition is the commitment to global dissemination and academic rigor. I am pleased to highlight that the conference proceedings are slated for publication in the prestigious **Springer Lecture Notes in Networks and Systems (LNNS)** series. This ensures that the high-quality research presented here will be indexed in major databases like Scopus, amplifying the impact of the contributions worldwide.

To our participants: may your deliberations lead to innovative, actionable recommendations that drive both technological advancement and ecological resilience.

May the 31st FAI International Conference be a resounding success, filled with profound discoveries, lasting partnerships, and a shared vision for a sustainable future!

Prof. Univ. Dr. Habil. Georgia Irina OROS
University of Oradea, Romania
Vice-President FAI

Message

It is a great honour to extend my warm greetings to all distinguished delegates, scholars, policymakers, industry leaders, and young researchers participating in the 31st FAI International Conference on "Sustainable Synergies: Bridging Technology, Policy, and Enterprise for a Greener World (ICSS-2026)", being held in the culturally rich city of Jaipur.

In an era marked by unprecedented environmental challenges, technological disruption, and complex socio-economic transformations, the pursuit of sustainability has become not merely an option but a shared global responsibility. The theme of this conference aptly reflects the urgent need for synergistic collaboration—where technology serves as an enabler, policy provides strategic direction, and enterprise translates innovation into scalable and responsible action.

Sustainable development today demands more than isolated solutions. It requires integrated thinking, interdisciplinary dialogue, and a willingness to bridge traditional boundaries between academia, governance, and industry. Technological advancements—ranging from digital transformation and artificial intelligence to green energy and smart infrastructure—hold immense promise. However, their true potential can only be realised when aligned with sound public policy frameworks and ethical, forward-looking business practices.

Platforms such as ICSS-2026 play a vital role in fostering this alignment. By bringing together outstanding scholars and diverse perspectives, this conference creates a meaningful space for knowledge exchange, critical reflection, and collaborative problem-solving. It encourages participants not only to share research findings and best practices, but also to co-create pathways toward resilient economies, inclusive growth, and environmental stewardship.

I am particularly encouraged by the emphasis this conference places on engaging young scholars and emerging leaders. The future of sustainability will be shaped by those who are willing to think boldly, act responsibly, and lead with integrity. Academic inquiry, when combined with real-world application and policy relevance, becomes a powerful catalyst for transformative change.

I commend the FAI Family and the organizing team led by Dr. Devika Agarwal, Head of Department, Commerce & Management, Biyani Girls College (Jaipur, India), for their dedication to advancing global dialogue on sustainability and for their continued commitment to academic excellence and social impact. I am confident that the deliberations, insights, and partnerships emerging from ICSS-2026 will contribute meaningfully to a greener, more equitable, and resilient world.

I wish the Conference every success and hope that it inspires sustained collaboration long after the sessions conclude.

Best regards,

Prof. Nina Poyda-Nosyk
Doctor of Science in Economics, Professor,
Department of Accounting and Auditing,
Ferenc Rakoczi II Transcarpathian Hungarian University,
Berehove, Ukraine

Message

សាខាសាកលវិទ្យាល័យគ្រប់គ្រង និងសេដ្ឋកិច្ច (ស.គ.ស) ខេត្តកំពង់ចាម
UNIVERSITY OF MANAGEMENT AND ECONOMICS (UME) KAMPONG CHAM BRANCH
សមត្ថភាព Competency | នវានុវត្តន៍ Innovation | ប្រតិដ្ឋញ្ញាណ Creativity | សុចរិតភាព Integrity | និងគុណធម៌ and Virtues

Letter of Congratulations

Success of the 31st FAI International Conference
February 7–9, 2026 | Poornima University, Jaipur, Rajasthan, India

I extend my warmest congratulations and heartfelt best wishes for the grand success of the **31st FAI International Conference,** being held from **7–9 February 2026 at Poornima University, Jaipur, Rajasthan, India,** in collaboration with **the University of Management and Economics (UME), Kampong Cham, Cambodia.**

This prestigious international forum brings together scholars, researchers, academics, and professionals from around the world to exchange knowledge, share innovative ideas, and promote meaningful collaboration across disciplines. I am confident that the conference will provide an excellent platform to foster academic excellence, ethical innovation, and sustainable development.

May the deliberations and discussions during this conference inspire new perspectives, strengthen global partnerships, and advance research and society at large. I congratulate the organizers, partners, and all participants for their dedicated efforts and wish the conference every success.

With best regards,

H.E. Muon Veasna
Vice Rector, University of Management and Economics (UME)
Kampong Cham, Cambodia

Message

Prof. Pankaj Srivastava

General Secretary, FATER Academy of India
Former Head, Department of Mathematics
Ex. Secretary, The National Academy of Sciences, India, Prayagraj (L.C)
Patron, The National Children Science Congress, Prayagraj
Ex. Chief Proctor ,MNNIT
Ex. Deputy Dean (Student Welfare), MNNIT

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31-01-2026

Message

It gives me great pleasure to extend my sincere congratulations to the Faculty of Management & Commerce and the R&D Cell, Poornima University, Jaipur (Rajasthan), for their commendable initiative in organizing the 31st FAI International Conference on "Sustainable Synergies: Bridging Technology, Policy and Enterprise for a Greener World," in collaboration with FAI, the University of Management and Economics, Kampong Cham, Cambodia, and Shinawatra University, Thailand, scheduled to be held during February 07–09, 2026.

The conference theme is both timely and forward-looking, addressing critical global challenges through an integrative and research-driven approach. It is expected to stimulate rigorous scholarly discourse by providing an eminent platform for researchers, academicians, and practitioners to present, deliberate, and disseminate original research findings and interdisciplinary perspectives. I am confident that the intellectual deliberations and scholarly outcomes of this conference will generate impactful insights and open new research trajectories, contributing meaningfully to Science and Technology, Social Sciences and Humanities, and Management and Commerce.

The success of such a significant academic endeavour rests upon the collaborative engagement of the organising institutions and the active participation of the academic community. I sincerely hope that this conference fosters evidence-based discussions, strengthens international research collaborations, and promotes a culture of academic excellence, innovation, and knowledge exchange.

I wish the conference every success and trust that it will emerge as a significant, impactful, and enduring milestone in advancing multidisciplinary research and global academic cooperation.

With Greetings

(Pankaj Srivastava)

Message

The International Conference ICSS-2026, *"Sustainable Synergies: Bridging Technology, Policy and Enterprise for a Greener World,"* underscores the vital role of responsible financial management in a rapidly digitizing economy.

Just as transparent digital transactions and UPI-based financial interfaces enhance efficiency and trust, sustainability demands accountability in economic and environmental actions.

System verification and digital identity checks mirror the need for reliable, verifiable frameworks in green technologies and policy implementation. Administrative record-keeping and careful documentation resonate with the principles of governance, compliance, and sustainable enterprise practices. Process transparency, whether in digital audits or environmental reporting, builds credibility among stakeholders.

Technical troubleshooting reflects the adaptive mindset required to overcome sustainability challenges through innovation.

This conference brings together technology, policy, and enterprise to ensure systems—digital or ecological—are secure, inclusive, and future-ready.

We are confident ICSS-2026 will inspire actionable pathways toward a resilient and greener world.

Regards,

Prof. C. C. Tan

Foreign Secretary-FAI, International College, National

Institute of Development and Administration, Thailand

Message

Dear Colleagues,

On behalf of the leadership and academic community of the Ukrainian State Flight Academy, we are honored to extend our warmest greetings to all participants of the 31st FAI International Conference on "Sustainable Synergies: Bridging Technology, Policy, and Enterprise for a Greener World (ICSS-2026)", being held in Jaipur, Rajasthan, from 7–9 February 2026.

This global event represents a vital platform for dialogue and collaboration among researchers, policymakers, and industry leaders committed to advancing sustainable practices and innovation in the aviation and aerospace sectors. We truly believe that the exchange of ideas and experiences during this conference will contribute to shaping a greener, safer, and more responsible future for our planet.

The Ukrainian State Flight Academy has always been dedicated to integrating sustainability into aviation training, research, and operations. We are confident that the shared knowledge emerging from this conference will inspire new partnerships and innovative approaches toward achieving the global goals of environmental stewardship and technological progress.

We sincerely congratulate the organizers and participants for their commitment to sustainability and extend our best wishes for a highly successful and enriching conference.

With highest regards, doctor of economic sciences, professor, professor of the department of aviation management **Zinaida Zhyvko** on behalf of the Leadership of the Ukrainian State Flight Academy Kropyvnytskyi, Ukraine

Message

It is a great honor for me to welcome the participants of the 31st FAI International Conference on "Sustainable Synergies: Bridging Technology, Policy, and Enterprise for a Greener World (ICSS-2026)", organized by Faculty of Management & Commerce and R&D Cell, Poornima University.

This scientific event examines a wide range of topical issues, including green financing, sustainable supply chains, environmental ethics, artificial intelligence for ecological protection, progress and challenges in achieving the UNDP Sustainable Development Goals, approaches to renewable energy development, the functioning of smart cities, and other topics aimed at advancing environmental awareness.

I congratulate the conference organizers on their efforts to ensure the event was held at the highest level. The reports presented and their discussions during this conference will make a significant contribution to solving the problems under study and will inspire new ideas and achievements. The practical, implementable recommendations provided will be helpful to the scientific community, researchers, students, and other stakeholders.

Prof. Pavlo Hryhoruk
Academic Secretary- Science and Technology,
Professor and Head of Department of Automated Systems and
Modeling in Economics
Khmelnytskyi National University, Khmelnytskyi, Ukraine

Message

VENI CREATOR CHRISTIAN UNIVERSITY
FLORIDA STATE CHRISTIAN UNIVERSITY

SOUVENIR MESSAGE

The 31st International Conference of the FATER Academy of India (FAI), which is being held at Poornima University (PU) in Jaipur, India, represents an important milestone in promoting scientific dialogue, academic excellence, and international cooperation. This event brings together academics, researchers, and practitioners from different parts of the world by promoting meaningful exchanges and the advancement of knowledge in various areas of knowledge.

As the Dean of International Affairs at Veni Creator Christian University, I want to congratulate the FATER Academy of India (FAI) and the Faculty of Management and Commerce at Poornima University (PU), which are fostering this space for reflection, innovation, and collaborative learning. The conference is a scientific space to share ideas, strengthen partnerships, and address contemporary challenges through rigorous academic discussions.

I extend my sincere congratulations to all participants who contributed to the success of this important academic meeting. May this conference be a fertile space for qualified dialogue, the strengthening of international cooperation and the construction of new perspectives for the advancement of knowledge and innovation. We wish everyone a fruitful, inspiring program marked by academic excellence, collaborative spirit and commitment to education and research.

Celebration-FL,USA, January 03, 2026.

Dr. Maria Emilia Camargo
Dean of Academic Affairs
Veni Creator Christian University

FILING INFORMATION:
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Message

The International Conference ICSS-2026, *"Sustainable Synergies: Bridging Technology, Policy and Enterprise for a Greener World,"* is anchored in the scientific understanding of Earth's climate system and its fragile energy balance.

Insights from the zero-dimensional energy balance model remind us how planetary albedo, solar radiation, and thermal emissions govern global temperature outcomes.

The accelerating rise in greenhouse gases has disturbed this equilibrium, intensifying the greenhouse effect and elevating global mean temperatures.

Such scientific evidence underscores the shrinking global carbon budget and the limited window available to meet critical climate thresholds.

Technology and enterprise must therefore innovate responsibly to reduce emissions across low, intermediate, and high-impact pathways.

Policy frameworks informed by robust climate models are essential to guide sustainable emission trajectories.

This conference emphasizes the power of simplified yet effective models in translating climate science into actionable strategies.

ICSS-2026 calls upon all stakeholders to align science, policy, and enterprise for a resilient and greener future.

Regards,

Prof. Alber Freazzler

Professor, Dept. of Applied Sciences,

University of Applied Sciences and Arts,

North Western Switzerland, Basel, Switzerland.

Message

To the Organizing Committee of the 31st FAI International Conference

I would like to extend my warm greetings and best wishes for the successful organization of the 31st FAI International Conference.

I am confident that the conference will provide an excellent platform for academic exchange, intellectual discussion, and the sharing of innovative research ideas among scholars and practitioners from around the world.

I wish the organizers and participants fruitful deliberations and a highly inspiring event.

Dr hab. Anna Łaszkiewicz
Associate Professor
Faculty of Management
ul. Matejki 22/26, 90-237 Łódź
University of Lodz, Poland

Message

Message for ICSS-2026 Conference Souvenir

"Sustainable Synergies: Bridging Technology, Policy, and Enterprise for a Greener World"
7–9 February 2026 | Jaipur, Rajasthan

It is a pleasure to extend my warm greetings to the organisers, speakers, and participants of the 31st FAI International Conference (ICSS-2026). The theme, *"Sustainable Synergies: Bridging Technology, Policy, and Enterprise for a Greener World,"* is both timely and necessary. Sustainability is no longer a standalone agenda. It is a shared responsibility that requires coordination across knowledge, governance, and implementation.

In today's world, technology can accelerate solutions, but it can also scale risks if not guided well. Policy can set direction and accountability, but it must remain responsive to real-world complexity. Enterprise can translate ideas into impact, but it must measure success beyond short-term gains. True sustainability emerges when these three pillars – technology, policy, and enterprise - move in alignment: innovation that is responsible, regulation that is enabling, and execution that is accountable.

Conferences such as ICSS-2026 matter because they create the space for this alignment to happen. They bring together researchers who test and refine ideas, policymakers who shape frameworks and incentives, and industry leaders who operationalise solutions. When these communities listen to one another and co-create, we move from aspirational language to practical outcomes.

As we collectively pursue a greener and more resilient future, three commitments are particularly important:

1. Commit to evidence and measurable impact. Sustainability initiatives must be grounded in data, transparent metrics, and honest evaluation—so that progress can be verified and improved.
2. Commit to cross-sector collaboration. Many sustainability challenges are "systems problems" that cannot be solved in silos. Partnerships across disciplines and sectors are essential to scale solutions responsibly.
3. Commit to inclusive transformation. Sustainable development should benefit communities, workers, and future generations. A just transition - one that is fair, accessible, and context-sensitive - strengthens legitimacy and long-term success.

I commend the organisers for convening this global academic congregation and for curating a platform that encourages dialogue, learning, and collaboration. I hope ICSS-2026 inspires new research directions, stronger partnerships, and practical initiatives that advance sustainability with integrity and purpose.

Wishing all delegates a meaningful conference, productive exchanges, and enduring collaborations.

With best regards,
Cheng Boon Liat
Associate Professor
Sunway Business School, Sunway University
Malaysia

Message

Dr Manas Mohan Adhikary, *M.Sc (Ag), Ph.D*
Professor of Agricultural Extension (Retd) &
Former Vice-Chancellor, BCKV, WB, India
Residence:
B-2/289 (Near Shib Mandir)
PO: Kalyani, Dist: Nadia, West Bengal-741235

DEPARTMENT OF AGRICULTURAL EXTENSION
FACULTY OF AGRICULTURE
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01.02.2026

Message

I am pleased to convey my warm greetings on the occasion of the 31st International Conference on "Sustainable Synergies: Bridging Technology, Policy, and Enterprise for a Greener World," being organized by the Faculty of Management & Commerce and the R&D Cell, Poornima University, Jaipur, Rajasthan, India in collaboration with the FATER Academy of India (FAI), Shinawatra University, Thailand, and the University of Economics and Management, Cambodia, to be held at Jaipur from 07 – 09 February 2026. The conference theme captures the essence of contemporary sustainability discourse by emphasizing the integration of technological innovation, policy coherence, and enterprise led action. At a time when the global community is facing pressing environmental challenges such as climate change, resource depletion, biodiversity loss, and environmental pollution, the need for holistic and collaborative approaches has never been greater. Sustainable development today requires solutions that are scientifically sound, institutionally supported, and economically viable. Advances in science and engineering offer powerful tools to address environmental challenges, yet their effectiveness depends on enabling policy environments and responsible entrepreneurial practices. When technology, governance, and enterprise operate in alignment, they create pathways for inclusive growth, ecological resilience, and long term sustainability. The focus of this conference on fostering such synergies is therefore both timely and significant. This international forum provides a valuable opportunity for researchers, academicians, policymakers, industry leaders, and young professionals from diverse backgrounds to exchange ideas, share research outcomes, and explore innovative practices. The interdisciplinary engagement encouraged by the conference is expected to generate insights that extend beyond academic boundaries and contribute to practical, scalable solutions.

I am confident that the deliberations and knowledge exchange during this conference will enrich global sustainability efforts and inspire meaningful action. I congratulate the organizers for their initiative and dedication and wish the conference a successful and impactful outcome with enduring contributions toward a greener world.

I wish every success of the conference.

Madhikary

(Manas Mohan Adhikary)
Former Vice-Chancellor
BCKV, West Bengal, India

Message

RAMCHANDRA CHANDRAVANSI UNIVERSITY
At+PS:-Nawadih Kala, PO.-Bishrampur, Distt.:- Palamu (Jharkhand)
Established by the Government of Jharkhand Act, 10, 2018, Gazette Notification No-903
Approved by the UGC u/s 2 (f) of UGC Act, 1956
Web: http://www.rcu.edu.in ::::: Email Id: kkumar.0420@gmail.com

Ref : ADV/OR/V/01 **4-Feb-2026**

Prof. Dr. Kalyan Kumar
ADVISOR (Univ. Affairs) /
EX- VICE CHANCELLOR

M E S S A G E

It gives me immense pleasure to learn that the 31st FAI International Conference on **Sustainable Synergies: Bridging Technology, Policy, and Enterprise for a Greener World (ICSS-2026)** is scheduled to be held at Jaipur, Rajasthan during February 7-9, 2026.

It is heartening that the Conference brings together academicians, researchers, policy makers, and industry experts to deliberate on cutting edge technologies and their practical relevance for nation building and realization of Viksit Bharat Mission, 2047.

I extend my heart-felt support to the organizers for their initiative leading to global academic exchange of innovative research and sustainable technological practices which will go a long way to shape the enrichment of knowledge domain.

I wish the Conference a great success!

Prof. Dr. Kalyan Kumar
ADVISOR (Univ. Affairs)

Message

GANDHIGRAM RURAL INSTITUTE-DEEMED TO BE UNIVERSITY
GANDHIGRAM-624 302 DINDIGUL DISTRICT, TAMIL NADU
Ministry of Education (Shiksha Mantralaya), Govt. of India
Accredited by NAAC with "A" Grade (3rd Cycle)

Dr. G. MAHADEVAN M.Sc., M.Phil., M.Tech(CIT)., Ph.D.,
PROFESSOR & HEAD
Dept of Mathematics
DIRECTOR - Centre for Visiting experts and Professors of Practice, & Centre for Advanced Theory and Network Sciences
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Andalpuram, Madurai.
Email:drgmaha2014@gmail.com
Mobile: 9443851756
Phone(off):0451-2452371-2452375

Its my immense pleasure and very happy to note that **31st FAI International Conference – 2026 on "Sustainable Synergies: Bridging Technology, Policy and Enterprise for a Greener World (ICSS-2026)"**, will be held at Poornima University, Jaipur, India during 7–9 February 2026. In today's rapidly changing global environment, sustainability has become a shared responsibility across disciplines and sectors. ICSS-2026 provides a meaningful academic platform for academicians, researchers, industry professionals, and policymakers to come together, exchange ideas, and contribute knowledge aimed at building a more sustainable future. The academic initiatives of FAI play an important role in strengthening collaboration, nurturing innovation, and supporting sustainable development at both national and international levels. I acknowledge the dedicated efforts of the Faculty of Management & Commerce and the R&D Cell, Poornima University, for organizing this international conference, in association with FATER Academy of India, Shinawatra University (Thailand), and the University of Economics and Management (Cambodia). The successful coordination of this event reflects strong institutional commitment and academic leadership. I appreciate the contributions of the authors, reviewers, keynote speakers, session chairs, and members of the organizing committee. Their collective efforts have ensured the academic quality and smooth conduct of the conference. The papers included in these proceedings demonstrate sincere scholarly engagement and are expected to serve as useful references for future research.

I extend my warm wishes for the success of ICSS-2026 and hope that the ideas and outcomes emerging from this conference will inspire continued collaboration, meaningful research, and innovative thinking toward a greener and more sustainable world.

Dr. G. MAHADEVAN
M.Sc.,M.Phil.,M.Tech.,Ph.D.,
PROFESSOR & HEAD
Department of Mathematics
The Gandhigram Rural Institution
(Deemed to be University)
Ministry of Education, Govt. of India
Gandhigram-624302. Dindigul, Tamilnadu

Message

Dear participants of the 31st FAI International Conference,

My name is Tetiana V. Zhyber. I am a Doctor of Economics and a representative of the Department of Finance at Kyiv National Economic University named after Vadym Hetman, Ukraine.

It is a great honor for me to welcome you to this important international academic event. I wish you the opportunity to exchange ideas with colleagues from different countries. I encourage all participants to engage in fruitful discussions, deliver inspiring presentations, and foster successful cooperation.

Thank you for your collaboration, and I hope you have a productive conference.

Regards,

Dr. Tetiana Zhyber

Associate Professor, Department of Finance,

Kyiv National Economics University, Ukraine.

Message

มหาวิทยาลัยชินวัตร

SHINAWATRA UNIVERSITY

Congratulatory Message

The 31st FAI International Conference

Dear Esteemed Organizers and Distinguished Participants,

The 31st FAI International Conference stands as a significant platform for the exchange of knowledge, perspectives, and scholarly collaboration among academics and professionals from around the world.

On behalf of Shinawatra University, Thailand, and in my capacity as Dean of the Faculty of Liberal Arts, I would like to extend my sincere congratulations and appreciation to the organizing committee for their dedication and efforts in making this conference possible. The conference reflects a strong commitment to academic excellence and international cooperation.

I wish the 31st FAI International Conference every success and trust that it will foster meaningful dialogue, innovative ideas, and sustainable academic collaboration in the years to come.

Yours sincerely,

Dr. Chanyanan Somtawilphongsai

Dean, Faculty of Liberal Arts

Shinawatra University, Thailand

Message

AZERBAIJAN STATE UNIVERSIFY OF ECONOMICS
UNEC BUSINESS SCHOOL

AZ 1001, Baku city, Istiglaliyyet street 6 **Tel:+99412 497 62 67**
Web adress: https://unec.edu.az/en/ **E-mail: mba@unec.edu.az**

#12 **"04" February 2026**

Dear Distinguished Colleagues,

Esteemed Academicians, Researchers, Policymakers, and Industry Leaders,

It is a great honor and pleasure for me to address you on the occasion of the 31st FAI International Conference – ICSS-2026, focused on "Sustainable Synergies: Bridging Technology, Policy, and Enterprise for a Greener World."

In today's rapidly transforming global environment, sustainability is no longer a choice—it is a shared responsibility. The convergence of technology, sound policy frameworks, and responsible enterprise represents one of the most powerful pathways toward inclusive growth, environmental stewardship, and long-term economic resilience.

Technological innovation offers us unprecedented tools to optimize resources and reduce environmental impact. However, without coherent policies and ethical business practices, technology alone cannot deliver sustainable outcomes. True progress emerges only when academia, governments, and enterprises work together, guided by evidence-based research and a long-term vision for society.

Academic platforms such as ICSS-2026 play a crucial role in this process. They create a unique space where ideas evolve into solutions, research informs policy, and theory meets practice. Conferences like this not only disseminate knowledge but also inspire collaboration across borders, disciplines, and generations.

I sincerely commend the organizers for fostering this global dialogue and for their commitment to advancing sustainability through interdisciplinary engagement. I am confident that the discussions, research insights, and partnerships formed during this conference will contribute meaningfully to a greener, more resilient future.

I wish ICSS-2026 every success and hope that it serves as a catalyst for innovative thinking, responsible leadership, and sustainable action worldwide.

Thank you for this opportunity, and I extend my best wishes for a productive and impactful conference.

Thank you.

Prof. Dr. Nazim Hajiyev
director, UNEC Business School
Azerbaijan State University of Azerbaijan (UNEC)
Visiting Scholar (15.10. 2017 – 31.10, 2018),
Davis Center for Russian and Eurasian Studies, Harvard University
n.hajiyev@unec.edu.az

Message

It gives me immense pleasure to extend a warm welcome to all delegates, researchers, academicians, industry leaders, policy makers, and students to the 31st FAI International Conference on Sustainable Synergies: Bridging Technology, Policy and Enterprise for a Greener World (ICSS-2026), being organized by the Faculty of Management and Commerce and the R&D Cell, Poornima University, Jaipur, in association with the Fater Academy of India from 7–9 February 2026.

In today's interconnected world, sustainability is no longer a choice but a collective responsibility. The convergence of technology, progressive policy frameworks, and responsible enterprise holds the key to addressing global challenges such as climate change, resource depletion, and inclusive development. ICSS-2026 aims to provide an international platform for dialogue, reflection, and collaboration on these critical issues, bringing together diverse perspectives from across the globe.

Poornima University remains steadfast in its commitment to academic excellence, interdisciplinary research, innovation, and sustainable development. Hosting this prestigious international conference with Scopus-indexed publication opportunities reflects our dedication to fostering high-quality research and global academic engagement. I congratulate the organizing team, Faculty of Management and Commerce, R&D Cell, and FAI for their tireless efforts in conceptualizing and executing this conference. I am confident that the deliberations, research presentations, and interactions during ICSS-2026 will generate valuable insights and long-term collaborations.

I wish all participants a highly enriching, intellectually stimulating, and memorable conference experience.

Warm regards

Best Regards,

Dr. Suresh Chandra Padhy

President,

Poornima University, Jaipur.

Message

It is a matter of great pride for Poornima University to be associated with the 31st FAI International Conference ICSS-2026, a truly global academic initiative focused on sustainability, innovation, and responsible growth.

The conference theme aptly highlights the urgent need to integrate technological advancements, sound public policy, and ethical enterprise practices to build a greener and more resilient world. Such scholarly platforms play a vital role in shaping thought leadership, influencing policy discourse, and strengthening academia–industry linkages.

I appreciate the efforts of the Faculty of Management and Commerce, R&D Cell, and the Fater Academy of India for creating a robust academic forum that welcomes international scholars and promotes impactful research. I wish the conference every success and hope it inspires meaningful action beyond academic boundaries.

Warm Regards,

Dr. Chandni Kripalani

Pro-President (FSH, FPH, FMC & PIHM),

Poornima University, Jaipur.

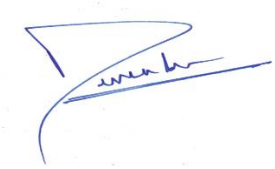
Message

On behalf of Poornima University, I am pleased to welcome all delegates to ICSS-2026. The smooth conduct of a conference of this scale reflects strong institutional planning, coordination, and academic commitment.

I appreciate the meticulous efforts of the organizing committees in ensuring a well-structured academic schedule, international participation, and high publication standards. The conference stands as a fine example of collaborative efforts between academia and professional bodies to promote meaningful research and global knowledge exchange.

I am confident that ICSS-2026 will provide a stimulating platform for intellectual deliberations, professional networking, and future academic collaborations. I wish all participants a seamless, enriching, and rewarding conference experience.

Best Regards,



Dr. Devendra Somwanshi

Registrar,

Poornima University, Jaipur.

Message

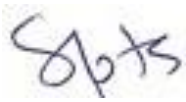
It gives me immense pleasure to welcome all delegates, researchers, academicians, and industry professionals to the 31st FAI International Conference on "Sustainable Synergies: Bridging Technology, Policy and Enterprise for a Greener World (ICSS-2026)".

Research today plays a pivotal role in addressing complex global challenges, particularly those related to sustainability, climate change, responsible innovation, and inclusive growth. ICSS-2026 provides a strong interdisciplinary platform where ideas rooted in rigorous research can converge with policy perspectives and enterprise-driven solutions. Such forums are essential for transforming academic inquiry into actionable knowledge that benefits society at large.

The emphasis on high-quality research contributions, a robust peer-review process, and Scopus-indexed publication opportunities reflects the conference's commitment to academic excellence and global research standards. I am confident that the deliberations during this conference will inspire new research directions, collaborative projects, and impactful scholarly outcomes.

I commend the Faculty of Management and Commerce, the R&D Cell, and the entire organizing team for their dedicated efforts in curating this intellectually enriching event. I extend my best wishes to all participants for stimulating discussions, meaningful networking, and a rewarding academic experience at ICSS-2026.

Warm regards,



Prof. (Dr.) Sunil Kumar Gupta

Dean Research, ASRC,

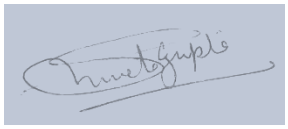
Poornima University, Jaipur.

Message

In today's globally competitive corporate scenario and emerging geo-political equations, sustainability has emerged as a compulsive shared responsibility of the world economies. The International Conference on Sustainable Synergies (ICSS-2026) provides an excellent platform for students, academicians, researchers and professionals to share and explore emerging trends in environmental sustainability practices, technological innovations, green entrepreneurship and community engagement. It's a privilege and honor for the Faculty of Management and Commerce to facilitate this multidisciplinary platform that aligns knowledge with action and growth with responsibility.

I commend all participants, speakers, resource persons, and organizers for their valuable contributions. May ICSS-2026 inspire meaningful learning and open new pathways toward a greener and more sustainable world.

Best Regards



Prof. (Dr.) Shweta Gupta

Associate Dean- FMC

Poornima University, Jaipur.

Message

It is a matter of pride to contribute to ICSS-2026, a conference that aligns strongly with contemporary management education focused on sustainability, ethics, and innovation. The theme of the conference aptly reflects the evolving role of management professionals in addressing global challenges through responsible leadership and informed decision-making. The conference provides an excellent platform for academicians, researchers, and practitioners to exchange ideas, present research findings, and engage in meaningful discussions on emerging trends in sustainable business practices. Such academic forums play a vital role in nurturing critical thinking, interdisciplinary learning, and global perspectives among scholars and students alike. We look forward to enriching academic discourse, fostering global collaboration, and contributing constructively to the success of ICSS-2026.

We wish all participants insightful deliberations and a rewarding conference experience.

Best Regards,

Dr. Urvashi Bhamboo

Conference Chair,

Head of Department (MBA),

Poornima University, Jaipur.

Message

ICSS-2026 offers undergraduate learners and young researchers an invaluable exposure to global sustainability debates and contemporary research practices. The conference provides a unique opportunity to understand how sustainability principles are being integrated into business, policy, and technological frameworks across diverse contexts.

Participation in such international academic forums helps nurture critical thinking, research orientation, and global perspectives among students, while also encouraging them to engage with real-world challenges through scholarly inquiry. Interactions with experienced academicians and industry experts further enrich their learning experience and broaden their professional outlook.We are delighted to support this initiative and look forward to contributing to its academic vibrancy. We wish all participants insightful deliberations and a highly enriching conference experience.

Best Wishes,

Prof. (Dr.) Monika Khatri

Conference Chair,

Head of Department (BBA),

Poornima University, Jaipur.

Message

ICSS-2026 offers undergraduate learners and young researchers an invaluable exposure to global sustainability debates and contemporary research practices. The conference provides a unique opportunity to understand how sustainability principles are being integrated into business, policy, and technological frameworks across diverse contexts.

Participation in such international academic forums helps nurture critical thinking, research orientation, and global perspectives among students, while also encouraging them to engage with real-world challenges through scholarly inquiry. Interactions with experienced academicians and industry experts further enrich their learning experience and broaden their professional outlook.

We are delighted to support this initiative and look forward to contributing to its academic vibrancy. We wish all participants insightful deliberations and a highly enriching conference experience.

Warm Regards,

Prof. (Dr.) Gaurav Malpani

Conference Chair,

Head of Department (Commerce)

Poornima University, Jaipur.

Message

Sustainability in healthcare systems is an emerging global priority, requiring innovative approaches that balance quality care, cost efficiency, and environmental responsibility. ICSS-2026 provides an excellent platform to deliberate on sustainable healthcare models, effective policy integration, and the role of technological innovations in strengthening healthcare delivery systems.

The conference encourages meaningful dialogue among academicians, healthcare professionals, policymakers, and researchers to explore solutions that promote resilience, accessibility, and long-term sustainability in healthcare services. Such interdisciplinary discussions are essential for addressing contemporary challenges faced by healthcare systems worldwide.

We are honored to be part of this academic endeavor and look forward to contributing to enriching discussions, collaborative learning, and impactful outcomes. We wish all participants a highly informative and successful conference experience.

Best Wishes

Prof. (Dr.) Monika Chaudhary

HoD-Department of Management (MBA-HHM)

Poornima University, Jaipur.

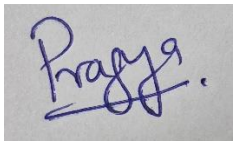
Message

ICSS-2026 serves as a significant academic platform that brings together diverse perspectives on sustainability, innovation, and responsible growth. The conference theme highlights the growing need for interdisciplinary approaches in addressing complex global challenges and fostering a greener and more inclusive future.

Such international conferences play a vital role in strengthening research culture, encouraging scholarly exchange, and promoting evidence-based thinking among faculty members and students. The opportunity to engage with global experts, policy thinkers, and industry practitioners adds immense academic value and practical relevance to the deliberations.

We are pleased to be associated with ICSS-2026 and look forward to contributing to meaningful discussions and knowledge sharing. We wish all delegates productive sessions, stimulating interactions, and a successful conference experience.

Best Wishes



Prof. (Dr.) Pragya Mishra

HoD-Department of Management (BBA-I Year)

Poornima University, Jaipur.

Message

It is our great privilege and honor to welcome you to the 31st FAI International Conference on "Sustainable Synergies: Bridging Technology, Policy and Enterprise for a Greener World (ICSS-2026)", being held from 7–9 February 2026. This conference has been thoughtfully conceptualized and meticulously structured to encourage interdisciplinary dialogue, global participation, and high-impact scholarly research addressing contemporary sustainability challenges. ICSS-2026 seeks to bring together academicians, researchers, industry professionals, policymakers, and young scholars from across the globe to exchange ideas, share research findings, and deliberate on innovative solutions for building a sustainable and inclusive future. The presence of distinguished keynote speakers, eminent session chairs, and international delegates, along with Scopus-indexed publication opportunities, significantly enhances the academic value and global relevance of this conference.We firmly believe that meaningful conversations at the intersection of technology, policy frameworks, and enterprise practices can lead to actionable insights and long-term collaborations. The diverse technical sessions, paper presentations, and panel discussions have been designed to foster critical thinking, collaborative learning, and knowledge dissemination beyond disciplinary boundaries.

I extend my sincere gratitude to all contributors, reviewers, academic partners, and organizing team members for their unwavering support and dedication. I also thank all participants for choosing ICSS-2026 as a platform to showcase their research and engage in constructive academic exchange.

We wish all delegates three days of enriching deliberations, intellectual engagement, and meaningful networking, and hope that your association with ICSS-2026 proves to be both professionally rewarding and intellectually fulfilling.

Best Wishes,

Prof. (Dr.) Devika Agarwal

Convener,

Professor and Head- Research Cell (FMC),

Poornima University, Jaipur

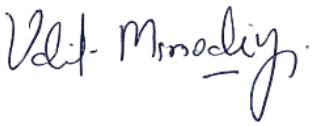
Message

The Faculty of Management and Commerce in association with the R & D Cell, Poornima University, is proud to host the International Conference on Sustainable Synergies: Bridging Technology, Policy, and Enterprise for a Greener World (ICSS 2026), reflecting our commitment to research, innovation, and sustainable development.

In an era of AI, digital transformation, and green technologies, interdisciplinary research, industry–academia collaboration, and policy-driven innovation are essential. This conference provides a platform to explore sustainable solutions, resilient business strategies, and impactful ideas for a greener future.

I sincerely thank the organizing committee, speakers, researchers, and industry partners. May ICSS-2026 inspire collaboration, innovation, and meaningful progress toward sustainability. Best Regards, Dr. Udit Mamodiya Associate Dean (Research), Poornima University, Jaipur.

Best Regards,



Dr. Udit Mamodiya

Convener,

Associate Dean (Research),

Poornima University, Jaipur.

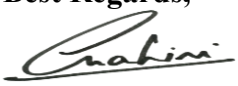
Message

ICSS-2026 has been conceptualized with the vision of fostering sustainable thinking across disciplines. From abstract submission to the design of technical sessions, every effort has been made to ensure academic rigor, transparency in review, and global relevance.

The conference aims to provide an inclusive platform for researchers, academicians, industry experts, and young scholars to engage in constructive dialogue and share innovative ideas that contribute to sustainability and responsible development.

We extend our heartfelt gratitude to the organizing team, reviewers, and participants for their enthusiastic involvement and unwavering support in making ICSS-2026 a meaningful academic endeavor

Best Regards,



Dr. Moon Moon Lahiri, Co – Convener

The successful organization of ICSS-2026 is the result of collective teamwork, institutional support, and enthusiastic participation from scholars across the world. We have focused on ensuring: A structured technical program, Transparent review process, High-quality publication avenues, Seamless coordination for delegates.

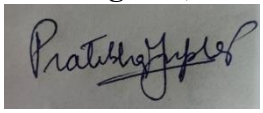
We sincerely thank all participants for being a part of this prestigious international conference and hope you carry enriching academic memories from Poornima University.

Best Regards,

Dr. Hansa Subnani, Organizing Secretary

It is a pleasure to welcome all delegates to the 31st FAI International Conference ICSS-2026. The successful organization of a conference of this magnitude is the result of careful planning, coordinated teamwork, and sustained academic commitment at every stage. From managing the call for papers, peer review process, and technical sessions to coordinating speakers, delegates, and logistics, every effort has been made to ensure a smooth, transparent, and enriching conference experience. We hope that ICSS-2026 provides a productive platform for scholarly exchange, professional networking, and the generation of ideas that contribute meaningfully to sustainability and a greener world.

Best Regards,



Dr. Pratibha Gupta, Organizing Secretary

TABLE OF CONTENTS

Human Technology Synergies in Climate-Smart and Precision Agriculture: Policy Pathways for Resilient and Sustainable Food Systems

Prof (Dr) Manas Mohan Adhikary

Former Vice-Chancellor, Bidhan Chandra Krishi Viswavidyalaya, West Bengal, India – 741252

Contact: dradhikary@gmail.com Phone No. +919433010699

ABSTRACT

Climate change presents unprecedented challenges to global agriculture, particularly for smallholder farmers who face high exposure to climatic risks and limited adaptive capacity. Climate-smart agriculture (CSA) and precision farming have emerged as strategic frameworks to enhance productivity, build resilience, and reduce greenhouse gas emissions. However, their successful implementation depends not only on technological innovations but also on the social, behavioural, and institutional contexts in which farmers operate. It will examines the socio-technical pathways that enable effective adoption of CSA and precision technologies, emphasizing the role of agricultural social science in bridging technology society gaps. It explores how farmers' risk perceptions, digital literacy, access to institutions, and local knowledge systems shape technology uptake. The discussion highlights how participatory approaches, community-based organizations, and inclusive digital ecosystems strengthen the adoption environment. Precision tools such as IoT sensors, drones, weather-based advisories, and AI-driven decision-support systems offer substantial benefits, yet require enabling policies, data governance frameworks, and equitable access mechanisms. The paper argues that climate-smart transformation must be grounded in people-centric strategies that integrate behavioural insights, institutional innovations, and social learning processes. It concludes that socio-technical interventions supported by capacity building, youth engagement, gender-sensitive models, and sustainable digital infrastructures are essential for scaling resilient and future-ready food systems.

❑❑❑

Prospects of Organic Farming with relevance to North-east India

Prof. M. Premjit Singh

Former Vice-Chancellor, Central Agricultural University, Imphal, India & President, FATER Academy of India (FAI), Email ID: mpremjit55@gmail.com

ABSTRACT

North Eastern Region of India includes eight states (Assam, Arunachal Pradesh, Meghalaya, Manipur, Mizoram, Nagaland, Tripura and Sikkim) having a total geographical area of 2.62 lakh km2, reported to have only 2.8% of the total food grain production of the nation pointing to its low level of productivity. Around 84% of the soil of NEH region is found to be acidic resulting in low available

phosphorus and zinc but high to medium in available nitrogen and potash. Depending on the external synthetic inputs becomes the only solution for the people targeting in enhancing the productivity. But, now-a-days people are very conscious about the health and soil issue. The intake capacity of the slow poison by the people on a daily basis is increasing in terms of hybrid food, resulting in high risk of one's health. On the other hand, there is a drastic change in the environment from a very healthy nation to an abnormal state. So, organic agriculture has appeared as a vital precedence area all over the world in view of the increasing perception for long term sustainability and environmental concerns. The basic concept of organic farming mainly focuses on crop rotation, crops diversification, livestock management, pest management and soil improvement. Most of North-eastern states of India are under rainfed condition leading to minimal or no utilization of synthetic inputs which can make huge upgradation in the scope of organic but due to lack in diversified knowledge, people are unaware in practicing more in organic agriculture. Thus, the need arose for an alternative to conventional agriculture to save the soil from degradation, to increase the fertility and productivity, to avoid synthetic pesticides, to prevent pollution and increase biodiversity, to reduce the dependence on costly external inputs and to reverse the trend of borrowing, to make the farmers to rely more on local natural resources to inculcate self-reliance and self-respect. In the present paper, principles and benefits of organic farming; current status of organic farming in North-east India; strategies for popularizing organic farming and problems faced by organic farmers are discussed.

❑❑❑

Climate Resilient Technologies for Sustainable Agriculture in the North East India

Prof. M. Premjit Singh

Former Vice-Chancellor, Central Agricultural University, Imphal, India & President, FATER Academy of India (FAI), Email ID: mpremjit55@gmail.com

ABSTRACT

Global climate change is considerably affecting and will continue to affect the food supply and access through direct and indirect effects on crops, soils, livestock, fisheries and pests. Therefore, concerted efforts are required for mitigation and adaptation to reduce the vulnerability of Indian agriculture to the adverse impacts of climate change and making it more resilient. Development of technologies for adaptation and mitigation and their uptake at speedy rate by the farmers are essential for climate change management.

Some of the potential climate resilient technologies developed by our University like (1) rainwater harvesting and efficient use of water through micro irrigation, (2) promotion of water saving system of rice intensification technology, (3) crop diversification in rice fallow with climate resilient oilseed

and pulse crops through zero tillage cultivation and integrated pest management, (4) promotion of location specific Integrated Farming System, (5) Organic farming, (6) Secondary agriculture including post-harvest technology, and (7) Mobile Agro-advisory system were evaluated in the farmers' field. The results and success stories of these climate resilient technologies in the farmers' field are described in the present paper and results indicate that these technological options can bring second green revolution in North East India by enhancing the farmers' income double.

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Financing public higher education in the Republic of Moldova

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ABSTRACT

In the Republic of Moldova, the economy is marked by accelerated transitions from the post-Soviet model to the European vector, from dependence on remittances and agriculture to the export of services and the green economy, and higher education institutions are trying to survive institutionally, adapt to the labor market, and meet the demands of the external environment.

The higher education system in the Republic of Moldova is undergoing profound reforms, and analysis of the results shows both notable progress and ongoing structural challenges. Higher education institutions in the Republic of Moldova continue to operate in an environment of limited financial resources, demographic decline, and fierce competition in the regional and international education market. At the institutional level, the university merger processes between 2018 and 2023 led to a partial restructuring of the university network, but their effects are ambiguous. In some cases, there has been an improvement in administration, while in others, the lack of a strategy for specialization and academic differentiation has led to overlapping study programs and fragmentation of financial resources.

From a quality assurance perspective, the National Agency for Quality Assurance in Education and Research (ANACEC) has strengthened the regulatory and procedural framework for external evaluation, gradually aligning it with the European Standards and Guidelines for Quality Assurance (ESG 2015).

Digital transformation is another critical dimension. Although the COVID-19 pandemic has accelerated the adoption of digital tools, most institutions still face underdeveloped technological infrastructure, a lack of advanced digital skills among teaching and management staff, and limited integration of modern learning management and institutional data platforms.

In terms of internationalization, progress has been made in attracting foreign students and developing programs in foreign languages, but the share of Erasmus+ mobility and strategic partnerships remains modest compared to the European average.

Bibliometric and international visibility indicators for research are showing slow growth, but funding for university research remains very low, and technology transfer and cooperation with the business sector are still underdeveloped. MEC data indicate a budget allocation for research in higher education of approximately 0.2% of GDP in 2025, below the European target of 1%.

During the research, various research methods are used, such as: synthesis; graphical method and economic analysis, applied in the dialectic of knowledge of the subject matter.

The authors summarize the theoretical aspects of the concept of financing in higher education institutions, emphasizing the particularities of the education system in the Republic of Moldova. The authors' contribution consists in highlighting the factors that determine the financing of higher education institutions, a comparative analysis of the models applied in other countries, and the formulation of practical recommendations for diversifying sources of income and improving the financial management of universities in the Republic of Moldova.

In the coming years, the following urgent changes should be pursued in the field of higher education: expansion of the fee-based education sector; maintaining the public sector as the basis of education; improving methods for determining the scale of education funding; improving the remuneration system in education; reorganizing the financial services of educational institutions; developing the market for information and educational services; developing international cooperation; improving the vocational training system.

Among the challenges facing the higher education system are negative demographics: the decline in the number of high school graduates affects the admission base; urban-rural differences: limited access to universities for young people in rural areas; quality and retention: the completion rate is lower than the European average; insufficient funding: universities depend on the state budget and student fees, which limits investment in infrastructure and research.

Thus, higher education institutions in the Republic of Moldova are undergoing a complex transition phase, marked by an urgent need for strategic consolidation, managerial modernization, and substantial investments in human capital and infrastructure.

Among the main directions of development in the field of higher education institutions, we can list: strengthening university autonomy and international partnerships; expanding dual education and collaboration with the business community; digitizing educational and administrative processes; increasing the attractive of programs through modern curricula and international mobility.

Higher education institutions need to focus on several areas: reorienting their educational offerings towards fields with high demand; internationalization as a strategy for financial survival – attracting foreign students has become an essential source of additional revenue. The main recruitment markets – Romania, India, Ukraine, Israel – are cultivated through targeted campaigns ("Study in Moldova"), English-language programs, and visa facilities. The pragmatism is evident: universities prioritize fields that are attractive to foreign students (medicine, economics, IT), even if these do not always coincide with national development priorities; partnerships with the business community and expanded dual education; digitization as a response to budgetary and demographic constraints. The decline in the student-age population (≈30–35% in the last decade) and limited funding have led universities to invest in digital platforms (Moodle, HEMIS, SIMU) to reduce operational costs and

expand access to education (distance learning, micro-credits). This pragmatic approach allows tuition revenues to be maintained even as the number of local students declines.

However, institutional pragmatism also poses risks: oversizing certain fields (e.g., economics and law) can lead to oversaturation in the labor market; the emphasis on profitable programs risks undermining fields that are fundamental to national development (exact sciences, sustainable agriculture, education); excessive internationalization may create dependence on volatile external flows.

The link between graduates and the labor market is reflected in the degree of alignment between the skills acquired during studies and the requirements of employers. Fields such as business, administration, and law, which attract the most graduates, correspond to constant demand in the market, especially in the private sector. On the other hand, declining interest in engineering or IT may signal a future imbalance, given the growing need for technical specialists. An effective correlation between the structure of university programs and the dynamics of the labor market is essential for reducing youth unemployment and increasing economic competitiveness.

At the end of the research, we will present the research findings materialized in conclusions and recommendations.

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Migration Policy and the Security Environment in Ukraine: A Scenario-based perspective during Wartime

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ABSTRACT

This article focuses on the development of scientifically grounded approaches to enhancing Ukraine's migration policy framework, fostering a secure environment and strengthening the foundations for national recovery.

The primary objective of the study is to develop scenario-based projections for the migration crisis in the EU, triggered by Russia's full-scale invasion of Ukraine. To achieve this aim, a multi-stage research methodology grounded in scenario analysis—specifically the Shell matrix approach—was employed.

In the first stage, the study examined migration flows resulting from the Russian invasion, assessing their scale, dynamics, trajectory, and implications for both the EU and Ukraine. It also investigated Ukrainian migrants' intentions to return to their home country and analyzed the key motivational factors influencing their decisions. Additionally, the study evaluated migrants' perceptions of socioeconomic conditions and the quality of various services in both Ukraine and the EU.

The second stage focused on identifying the principal drivers of migration, isolating the most influential factors affecting migratory trends in Europe since the onset of the war. Based on these findings, a matrix model of migration drivers was constructed.

In the third stage, the study addressed critical uncertainties—those unpredictable yet pivotal elements that shape the security environment of Ukraine. A comprehensive list of these uncertainties and their root causes was compiled to serve as a foundation for the subsequent scenario modeling.

The fourth stage entailed the development of potential migration scenarios. Three core scenarios were identified—optimistic, realistic, and pessimistic—along two principal axes: the duration and outcome of the war (X-axis), and the EU's policy towards Ukrainian integration (Y-axis). A graphical representation of the scenario matrix was also presented.

The fifth stage involved evaluating the feasibility of implementing the identified scenarios through an expert assessment method. This approach entailed analyzing the viability of each scenario and determining the degree of consensus among expert opinions.

The final stage focused on developing a conceptual framework for the legal regulation of migration processes, culminating in the proposal of a state program entitled "Soft Return." This program outlines legal mechanisms aimed at integrating migration policy into the broader architecture of national security, with a particular emphasis on preserving and facilitating the return of human capital.

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Archives and Democratic Sustainability: Reflections from the Japanese Context

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ABSTRACT

This presentation examines sustainability from the perspective of democracy and the sustainability of memory. In this context, sustainability is understood not primarily as the preservation of resources or institutions, but as a society's capacity to continually reflect upon, reassess, and revise its own judgments and institutional arrangements over time. Forms of social discourse frequently observed in contemporary societies—such as the dominance of a single narrative or the uncritical circulation of moralized success stories—may possess short-term mobilizing power. However, by undermining this capacity for self-correction, they tend in the long run to erode social trust and critical thinking, thereby structurally weakening sustainability itself. Focusing on this problem, the presentation seeks to reconsider the concept of sustainability by approaching archives as a core infrastructure of democratic education. In Japan, while libraries and museums have been positioned primarily within the legal framework of social education, archives have been institutionalized under the Public Records and Archives Management Act and the Information Disclosure Act, functioning as mechanisms that ensure administrative accountability and public verifiability. This institutional configuration suggests that archives have been conceived less as cultural or educational resources

than as foundational infrastructures supporting the operation of democracy. Taking this Japanese institutional arrangement as a reference point, the presentation examines how what is here termed “the study of archives” can maintain critical distance from linear narrativization and moralized storytelling. In this presentation, the study of archives is understood as a practice that approaches records not as neutral accumulations of facts, but as sites where discourse, power, and memory intersect, and where the formation and endurance of social narratives can be critically examined. From this perspective, the study of archives adopts a stance that attends to the incompleteness, contradictions, and frictions often embedded in records, treating the very process by which events come to be narrated as coherent stories as a central question. Engaging with such “friction-laden memory” in educational and research contexts fosters citizens’ capacity to question dominant discourses and helps create the conditions under which societies can continue to correct themselves over time. Accordingly, this presentation proposes a perspective that understands archives not as supplementary elements that merely support sustainability, but as one of the conditions that enable democracy to sustain its capacity for long-term self-revision.

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Factors Affecting Access to Finance for Small and Medium Enterprises in Lao PDR: Evidence from the World Bank Enterprise Survey

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ABSTRACT

This study takes a deep dive into what determines access to formal finance for Small and Medium Enterprises (SMEs) in the Lao People's Democratic Republic (Lao PDR). SMEs make up the vast majority of registered businesses and are the main source of jobs in Laos, yet they lag behind their regional counterparts in productivity, a problem made worse by a severe lack of funding. Using data on 208 businesses from the survey, this paper uses a logistic regression model to pinpoint the key factors that influence whether an SME can get a loan or line of credit.

The results show a complex picture, where the manager background, the firm's characteristics, and its performance all play a role. We found that more experienced managers and higher company revenues significantly boost the chances of getting financing. Surprisingly, however, businesses run by women and those with more employees were less likely to secure formal credit. The study also found that businesses located in the capital, Vientiane, and those in the manufacturing sector have a clear edge. Perhaps most surprisingly, several factors that are usually considered crucial in lending like the age of the business, whether collateral was required for past loans, and having externally audited financial statements turned out to be statistically insignificant.

These findings suggest that in Laos's developing financial system, where institutions are still weak, informal signals and possible biases might matter more in lending decisions than formal risk-management tools. This paper adds to the limited research on SME finance in Lao PDR and offers targeted policy recommendations for the government, financial institutions, and SMEs themselves. The goal is to help close the critical financing gap and unlock the growth potential of this essential sector.

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Using Granger Causality to Investigate the Impact of Economic Development Indicators on Environmental Degradation in South Asia

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ABSTRACT

The article examines the relationship between economic development indicators and environmental degradation in South Asian countries using the Granger causality test. The empirical analysis is based on annual World Bank data for the period 2000–2023. Economic determinants include gross value added in agriculture, industry, and manufacturing; GDP per capita; exports and imports of goods and services; gross fixed capital formation; and household final consumption expenditure. Environmental safety indicators include volumes of CO_2, CH_4, and N_2O emissions, as well as total greenhouse gas emissions. A single comprehensive index was constructed for each indicator group. For this purpose, the principal components method was used. Further research was conducted on comprehensive indices. The research methodology includes testing for stationarity of the time series using the Dickey–Fuller test, the Engle–Granger cointegration test, and the Granger causality test. The results of the Granger causality test confirmed a statistically significant short-term effect of economic development on environ-mental degradation. However, research with longer lags found no stable causal effect, suggesting that the economic system partially offsets the ecological im-pacts of growth through technological adaptation, structural shifts, or regulatory mechanisms. The assessment of the causal nexus from environmental degradation to economic development indicated that it is weak and unstable. The conducted empirical study of the relationship between the comprehensive index of economic growth and the comprehensive index of environmental degradation allowed us to formulate conclusions that deepen the understanding of the mechanisms of inter-action of economic and ecological subsystems in the modern conditions of the transformational economy and emphasize the need to integrate environmental priorities into the strategy of economic development of the South Asian countries.

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Sustainable Technological Growth for a Greener World

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ABSTRACT

India's sustainable development initiative significantly focuses on power grid capacity enhancement based on introducing more and more renewable energy sources on one hand, and gradually eliminating its thermal sources on the other. Besides, the benchmark for power quality, reliability, safety and security are to be set keeping in view economy and affordability. The ultimate goal is to maintain continuity and quality of electric supply at all load points, preferably with no load interruptions; and fulfilling peak-load requirements as much as possible by renewable energy sources.

All such initiatives essentially aim at optimized co-ordination among several layers of a multi-level system control structure whereby process automation, SCADA, monitoring and control of key variables, system contingencies and risk assessment, AI-Coud-Fog integration, etc are to be dealt with utmost care.

The paper highlights the prospects of recent technological advancements emphasizing sustainable growth opportunities to achieve under the Viksit Bharat Mission, 2047, India's firm commitments to evolve many a problem solution to hopefully completely discard environment pollution owing to the shut-down of thermal power units, and also, replacing all of thermal units by renewable energy sources such as solar, wind, bio-mass, etc. Also, the paper explores the AI-Cloud-Fog integration to offer support to the mission in a big way.

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Ethical Challenges of Artificial Intelligence: A Holistic Approach to Governance and Regulation

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ABSTRACT

This study examines the ethical challenges of artificial intelligence (AI), focusing on its relationship with data privacy and protection, transparency and algorithmic governance, AI autonomy and control, as well as algorithmic discrimination and social impact. Using Bardin's (2011) content analysis as a methodological approach, the research reviews academic literature to identify trends, gaps, and recommendations in AI governance. The objective is to understand how ethical principles can be

effectively applied in the development of intelligent systems, ensuring a responsible and socially fair use of technology. The findings indicate that, despite regulatory advances in certain regions—such as the Brazilian General Data Protection Law (LGPD) and the European General Data Protection Regulation (GDPR)—significant challenges remain in the implementation and enforcement of data protection frameworks. Algorithmic governance continues to face obstacles related to transparency and oversight of automated decision-making processes, while AI autonomy remains a subject of ongoing debate, particularly due to the risks associated with the transfer of decision-making authority from humans to machines. Furthermore, algorithmic discrimination was identified as a persistent issue, often reinforcing pre-existing social inequalities. The study highlights the importance of collaboration among scientists, ethics specialists, and policymakers in developing safer, human-centered innovation frameworks. Ethical challenges in AI require not only regulatory responses but also a holistic approach that integrates interdisciplinary perspectives from science and philosophy to mitigate risks and maximize social benefits. Future research may further explore the applicability of regulatory standards across different countries, as well as investigate the impacts of AI on labor markets and environmental sustainability. In this context, the need for effective global frameworks for algorithmic governance remains a central issue to ensure that AI is developed and deployed in an ethical, transparent, and equitable manner.

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Kiwi Fruit: An Upcoming Fruit Crop In North East India - Problems And Prospects For Enhancing The Productivity Using Precision Farming Towards Improving Livelihoods Of Small And Marginal Farmers

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ABSTRACT

Kiwi fruit, recently introduced to the North-East Indian Hill states, has gained significant popularity and preference among both growers and consumers. This is attributed to its ease of cultivation and marketing, as well as its notable nutritional and medicinal benefits.

Kiwi fruit, which has been introduced to the North Eastern States, presents significant opportunities for expansion across the region, except for Tripura and Assam, where the warmer tropical climate is less suitable. The North-East's kiwi fruit has achieved commercial recognition in local, national, and international markets, with Arunachal Pradesh established as the largest producer in this area. Other states are also prioritizing kiwi cultivation for further expansion as part of the Horticulture Technology Mission.

Although the climate and soil are suitable, productivity of temperate fruits—especially Kiwi Fruit—remains limited due to issues such as poor-quality planting material, a lack of standardized package

of agricultural practices, limited access to modern precision farming technology, and insufficient trained labor. The ICAR Roving Team for Temperate Fruits suggested a strategic plan for cultivating these fruits in the North Eastern Hill Region. A comprehensive survey has also been conducted in the region's Kiwi-growing areas. Embracing modern horticultural techniques for Kiwi Fruit cultivation in the North East Hill Region could greatly benefit the rural and regional economy, which is largely made up of small and marginal farmers who typically practice subsistence agriculture or forms of shifting cultivation like Jhum.

Kiwi fruit originally comes from China's northern Eastern Sub-Himalayan ranges, suggesting strong potential for commercial cultivation in the southern Sub-Himalayas. This study reviews key technologies for boosting Kiwi productivity, highlights priority areas, and considers economic and organic approaches for enhanced sustainability through organic based precision farming. Kiwi is becoming a leading horticultural crop in the North Eastern states, especially when integrated with large cardamom-based cropping systems.

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Phygital Commerce: New Category or Evolution of Omnicommerce Strategy

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ABSTRACT

The concept of phygital, integrating physical and digital experiences, has gained increasing attention in research on consumer engagement, yet its theoretical status remains unclear. In the literature, phygital is interpreted either as a qualitatively new phenomenon or as a new label for existing offline–online integration strategies, such as omnichannel commerce.

The aim of this presentation is to critically examine the concept of phygital and assess its potential as a distinct analytical category in marketing. The presentation is based on a narrative review of 31 academic publications and focuses on how phygital experiences are conceptualised across different sectors, including retail, education, and banking.

The presentation identifies key definitional debates, clarifies the boundaries of the concept in relation to omnichannel and multichannel commerce, and highlights major research gaps. It concludes by outlining directions for future empirical research needed to determine whether phygital constitutes an independent field of inquiry within marketing.

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Sharp Coefficients and Fekete-Szegö Bounds for the Quasi-Subordination class via the K-Mittag-Leffler Function

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ABSTRACT

In this paper, we introduce a novel subclass $Kq(\prec, \gamma, \delta, k, q, \alpha, \beta)$ of analytic functions, defined through a quasi-subordination approach. We explore the sharp bounds of the Fekete-Szegö functional for functions belonging to this newly defined class. The study presents enhanced versions of previously established results for specific subclasses, incorporating both quasi-subordination and majorization techniques. Additionally, we utilize the k-Mittag-Leffler function extensively to develop a new mapping, $A\gamma,q,\delta\ k,\alpha,\beta(z)$, which is fundamentally based on the properties of the k-Mittag-Leffler function. The findings offer significant insights into the behavior of these classes of functions and contribute to the development of advanced methodologies in geometric function theory.

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Impact of Climate Change on Productivity of Fruits in Indian Himalayas – A Case Study of Apple: Challenges and Way Forward for Mitigation and Sustainability through Precision Farming

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ABSTRACT

The productivity of temperate fruits, especially Apple in Western Himalayas is declining at a fast pace and has become a serious concern for farmers, researchers and development agencies at national and state levels for the last three decades. Average yield of apple in India is estimated at 7.0 tonnes per hectare which is far below the level of 30 tonnes per hectare in some advanced countries. Crucially livelihoods of farming communities suffers the most from low productivity. The situation in Eastern Himalayas is likely to follow suit in the times to come, perhaps with different and bigger issues.

Several factors can be attributed to declining trends in productivity like expansion of apple cultivation to marginal areas, monoculture of Delicious varieties, poor soil fertility, declining standards of soil water management, limited expansion of areas under temperate fruits and the fluctuating abnormal biotic and abiotic conditions.

However, with rise in global warming, the decline in productivity is becoming more attributed to changing climatic scenario. It is clearly reflected that standard apple cultivars Starking Delicious and Red Delicious would not flower and fruit when chilling units are not adequately fulfilled. Hence there is an urgent need to select appropriate cultivars for plantation at low elevation location so that consistent yields are obtained and crop failures be avoided using high tech cultivation under high density plantations (HDP) with new rootstocks and climate resilient cultivars. To meet the bulk requirements of the processing units and horticultural diversification, other temperate fruit cultivation can be extended to mid-hills by planting their suitable low chilling cultivars. Factors and strategies for adaptation to the changing climate scenario will be discussed.

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Sustainable Synergies: Bridging Technology, Policy and Enterprise for a Greener World

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ABSTRACT

Today's rapid technological changes and increasing environmental challenges show that we need strong cooperation between technology, policy, and business. This keynote discusses how new tools especially artificial intelligence, digital systems, and sustainable technologies-can support a greener and more resilient world when they are guided by clear policies and responsible leadership.

The presentation explains how technology can help us use resources more wisely, improve decision-making, and support long-term development. It also highlights the important role of governments, schools, and industries in working together to create practical and lasting solutions. By sharing recent examples from research, policy work, and business initiatives, the talk shows that sustainability works best when different sectors collaborate and share a common goal.

Overall, this keynote encourages a simple but powerful idea: sustainability should guide how organizations plan, innovate, and make decisions. With strong partnerships and thoughtful action, we can turn sustainability goals into real solutions that benefit communities and protect our environment for the future.

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Mindful Governance for National Green Transitions: A Dhamma-Informed Framework for Policymakers and Enterprises to Scale Clean Technologies Now and Over the Decadal Transition

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ABSTRACT

National green transitions demand coordinated action across technology development, policy design, and enterprise adoption to achieve rapid, equitable, and lasting decarbonization. This article proposes "Mindful Governance," a Dhamma-informed framework that adapts core Buddhist principles Right View, Right Intention, Right Effort, Right Mindfulness, Right Livelihood, Right Speech, generosity, compassion, and wisdom to practical policy and corporate tools for scaling clean technologies now and throughout the decadal transition. Framing sustainability as a challenge of interdependent causes and conditions aligns incentives with long-term social and ecological flourishing; pairing that reframing with disciplined, iterative learning reduces risk, strengthens equity, and accelerates diffusion. Drawing on sustainability transitions, adaptive policy design, organizational change, and contemplative ethics, we translate each principle into instruments: adaptive regulation with mindful

monitoring, mission-oriented public investment linked to just-transition funds, strategic procurement and servitization models that internalize lifecycle costs, transparent reporting and stakeholder dialogue, blended finance, and capacity building to sustain effort and institutional memory. Three vignettes renewable energy scaling, municipal circular procurement, and enterprise servitization illustrate application pathways, enablers, and barriers. Emphasizing practice-based verification, social solidarity for affected workers and communities, and systems humility, the framework yields policy recommendations, enterprise strategies, and a research agenda to test effectiveness, equity, and scalability. Mindful Governance offers an ethically grounded, operational roadmap to close the adoption gap and accelerate just national green transitions.

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An Algorithmic Approach to Reciprocal Domination for Optimizing Emergency Medical Supply Hubs

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ABSTRACT

This paper explores the application of reciprocal dominating sets from graph theory to the optimization of emergency medical supply hubs in Chennai, India. Standard domination guarantees coverage, while reciprocal domination ensures resilience by requiring each hub to maintain adjacency to a non-hub node it serves, enabling two-way resource flow and backup accessibility. Using a dataset of 18 zones in Chennai, we construct a graph based on spatial proximity and connectivity. A capacity-constrained greedy algorithm is implemented to determine a minimal set of hubs that satisfies domination, reciprocity, and service capacity limitations. Results demonstrate that six hubs are sufficient to achieve complete reciprocal coverage of the city.

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Mankind's Problems : Climate Change, Scientific fact with Philosophical Considerations and Contributions

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ABSTRACT

Earth’s climate system is fundamentally governed by the balance between incoming solar radiation and outgoing terrestrial thermal radiation. The zero-dimensional energy balance model (EBM)

provides a simplified yet powerful framework to quantify this equilibrium by relating planetary albedo, solar constant, and effective radiating temperature. While this model assumes spatial uniformity, it effectively captures the first-order response of global mean temperature to radiative forcing. In recent decades, a pronounced increase in atmospheric greenhouse gases—particularly carbon dioxide, methane, and nitrous oxide—has disrupted this balance by enhancing the greenhouse effect and reducing outgoing longwave radiation. This study examines the implications of rising greenhouse gas concentrations within the zero-dimensional EBM framework and evaluates associated changes in global temperature. Further, it explores the concept of the carbon budget, defined as the cumulative amount of CO_2 emissions permissible to limit global warming to specific thresholds under different emission scenarios. By comparing low, intermediate, and high-emission pathways, the analysis highlights the narrowing margin of the remaining carbon budget and underscores the urgency of mitigation strategies. The findings reinforce the relevance of simplified climate models in understanding fundamental climate dynamics and in informing policy-relevant assessments of emission trajectories and climate targets.

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Corporate Social Responsibility in Banking: A Strategic Instrument for Strengthening Customer Loyalty

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ABSTRACT

As banking activities increasingly align their development strategies with the global sustainable development objectives established by the 2015 Paris Agreement and the Sustainable Development Goals, the level of banking performance will depend significantly on the extent to which the principles of Corporate Social Responsibility (CSR) are integrated and efficiently implemented. In the banking sector, CSR represents a coherent set of policies, practices, and initiatives aimed at embedding economic, legal, ethical, and social responsibilities into the financial institution's operational processes and the services it provides. This strategic orientation seeks to create value not only for shareholders but also for society as a whole, encompassing all stakeholders involved in the bank's activities. Moreover, it extends beyond the strictly economic dimension of banking operations by promoting sustainable financial products and services, developing responsible financing mechanisms, and adopting high ethical standards in relations with clients and society at large. Banking CSR entails heightened attention to consumer protection through transparency, fairness in information disclosure, and responsible management of the risks associated with each product. At the same time, a central element is the facilitation of financial inclusion for diverse categories of clients, such as vulnerable individuals, rural populations, young people, and small and medium-sized enterprises (SMEs), by ensuring equitable access to financial services and products tailored to their needs.

The financing of green projects, the encouragement of responsible entrepreneurship, and the active involvement in addressing community issues have gained increasing importance in the banking sector, amid rising consumer awareness of the need for environmental protection, the promotion of

sustainable activities, and growing ethical expectations. In this context, banks structure their strategic orientation by integrating the principles of Corporate Social Responsibility, with the objective of strengthening customer relationships and enhancing customer loyalty by reinforcing trust and the institution's reputation.

Given that the fundamental objective of a bank is to maximize profit by strengthening its competitive position on the market, it becomes essential for banking management to identify the ways in which the effective implementation of Corporate Social Responsibility (CSR) can determine customers to remain loyal and contribute to the development of a long-term relationship between the client and the banking institution.In this context, the adoption of responsible, transparent, and sustainability-oriented practices becomes a key determinant of the competitiveness and credibility of banking institutions in the contemporary economic environment.

The purpose of this research is to conduct an in-depth analysis of the relationship between the perceptions of financial banking service consumers regarding Corporate Social Responsibility (CSR) and their intention to maintain loyalty towards their bank. The study aims to investigate the evolution and the manifestation patterns of this relationship in order to understand how CSR dimensions influence customers' post purchase behaviour.

In this regard, the research seeks to clarify the extent to which Corporate Social Responsibility exerts a significant impact on consumer loyalty and to identify the types of activities banks should adopt to strengthen the level of CSR perceived by customers. Thus, the study focuses on determining those CSR practices, such as economic, ethical, philanthropic, and environmentally oriented, that contribute to consolidating the long term bank-customer relationship.

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China's Artificial Intelligence Policy and the Transformation of Green Foreign Trade: Policy Synergies for Sustainable Growth

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ABSTRACT

This paper investigates how China's artificial intelligence (AI) policy influences the structural transformation of green foreign trade within the broader context of sustainable development. By constructing a "policy–mechanism–outcome" analytical framework, it analyzes the dual mechanisms of technological empowerment and institutional coordination through which AI policy promotes green export capacity. Empirical case studies—including AI pilot zones, the Digital Silk Road, and smart customs—demonstrate how AI improves green compliance, optimizes export structures, and enhances global competitiveness. The study finds that effective integration of AI and green trade policy requires horizontal, vertical, and cross-domain collaboration, but faces challenges such as policy fragmentation and data interoperability. Based on these findings, the paper proposes policy recommendations to strengthen green–digital synergy, improve governance interfaces, and expand

China's role in global green trade rules. The findings contribute to ongoing debates on AI governance and sustainable trade transitions in developing economies.

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Improving Customer Engagement in Private Sector Banks Using the TAM Framework: Behavioral Insights for Sustainable Growth

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ABSTRACT

In a competitively dynamic and pressure driven banking industry, actively engaging with their stakeholders, especially customer, is of utmost importance for private banks. The present study investigates the drivers of customer engagement in private sector banks by extending the Technology Adoption Model (TAM) in Nashik District. Data from 469 respondents was collected and analyzed using Structural Equation Model (SEM). The model evaluates how Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Trust and Social Norms determines the adoption of digital banking.

The results demonstrate that customers tend to use the banking services once they feel that banking services are trustworthy, easy and convenient in using, and other people feel good about them. The behavioral insights from this study suggest that customer engagement is a prerequisite for long term sustainability in private sector banking, especially in this AI-Integrated, post-covid landscape. It offers frameworks for management of banks to make a move from merely being digital to enhancing customer engagement for sustainability.

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AI-Driven Green Governance: An Integrated IoT and Policy Framework for Sustainable Urban Enterprises in India

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ABSTRACT

The rapid urbanization, industrialization, and resource consumption in India have increased the need for sustainable governance systems that can create a balance between economic growth and

environmental preservation. Reactive in nature, static data and cross-sector awareness in the conventional regulatory structure is often not available, thus limiting their ability to help companies move in the direction of sustainable development. To address this void, the current research aims at developing an Artificial Intelligence (AI) Driven Green Governance Framework (AIGGF) that brings together the Artificial Intelligence (AI), Internet of Things (IoT) and policy analytics to enable intelligent, transparent and adaptive governance in urban enterprises. The proposed model operates through three interconnected layers: IoT sensor layer that captures data in the form of real-time environmental data and operational data; the AI-based decision layer that includes predictive analytics and optimizations and measures sustainability metrics; and policy alignment engine that aligns the enterprise operations automatically with national and local environmental regulations such as Smart Cities Mission & National Green Policy 2022. Pilot simulation on urban industrial clusters shows that the framework can improve energy efficiency by 20-25%, waste production by close to 18% and improved regulatory compliance by 30% com-pared to more traditional systems. In addition, the framework provides a dynamic dashboard visualization of enterprise-level sustainability performance to enable policymakers to take action based on the data. The report concludes that combining AI and IoT in governance structures can transform Indian enterprises into digitally responsible, environmentally accountable entities that can create a circular economy, and accelerate India's shift towards greener and smarter urban ecosystems.

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Smart Tax Systems: AI-Driven Innovation for National and Economic Advancement

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ABSTRACT

This study examines the role of taxation in building the nation and strengthening the economy through a sentiment-based analytical approach. Using publicly available internet sources, the research evaluates how taxation, tax reforms, and fiscal policies are perceived within economic discourse. Since the independence of India, tax reforms have taken place for the development of the economy. Various countries including developing and developed countries are doing tax reforms. The motive

behind the tax reforms is to reduce the fiscal imbalance in the country. Some tax reforms have also been done to encourage the entrepreneurs to develop the start-up's and their ventures. In the mid-1980s tax reforms were started. The Indian fiscal system includes two types of taxes including direct and indirect tax. Tax plays a very crucial role in building the nation and the economy. This research study also seeks the evaluation of tax reforms in India. The researcher has also discussed the importance of tax reforms for building the enterprises. Tax reforms are also necessary to compete with the world economy and improve the globalization position of India

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Evaluating Sustainable Building Material Selection Methods: A Unified Benchmarking Framework

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ABSTRACT

The selection of sustainable building materials can be difficult because there is a need to manage the impacts of the environment, technical characteristics performance, financial implications, and long-term performance against multiple objectives of sustainability. Currently, most sustainable building material selection processes depend on individual indicators or single criteria decision-making methods which leads to many inconsistencies, lack of transparencies and low comparability of the decision-making processes across different construction projects. This research proposes a comprehensive benchmarking framework for evaluating and comparative analysis of sustainable material selection methodologies through the use of standardized datasets, normalization methods and weighting methods. This benchmarking framework combines environmental indicators such as embodied energy and carbon to the technical attributes of the material such as compressive strength and service life along with economic factors like initial costs and lifecycle costs. In addition, several multi-criteria decision-making methods were used under controlled evaluation settings to assess permission behaviors, stability and sensitivity of the different selection criteria under various levels of sustainable objectives. Experimental data indicates that various methods of selection create varying ranking results for the same materials depending on the selection method used and weightings applied to the materials. This finding confirms the existence of method-based decision bias. The benchmarking framework proposed herein provides a means to compare selection methods in an objective manner through the use of metrics such as consistency, deviation, and rank correlation to aid evidence-based decisions for architects, engineers, and planners. Furthermore, the benchmarking framework provides a procedure to evaluate other selection methods as well as other materials that are tied to location or project requirements in future applications.

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A Bayesian Physics Ensemble for Probabilistic Maritime Fuel Prediction

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ABSTRACT

Accurate estimation of a ship's fuel consumption is of prime importance for safe and efficient operation. Conventional machine learning models return only point estimates, not measuring the uncertainty of a prediction, a crucial step for practical, logic-based decision-making. This study proposes a novel framework, Bayesian Physics Ensemble (BPE), that provides a probabilistic framework for predicting ship fuel consumption. The BPE uses a Bayesian Ridge meta-model to combine forecasts for different strong regression models such as XGBoost, Extra Trees, and an Artificial Neural Network (ANN). The model further incorporates supplementary input features relating to resistance and propulsion of ships—which account for hydrodynamic and aerodynamic components—computed from first principles and physics-based equations. Overall performance was very strong when tested on a fleet of three ships, achieving an R^2 test score of 0.904. More importantly, BPE produced statistically valid 95% predictive intervals that captured true fuel consumption in 96.05% of test runs. Thus, the capability of BPE to offer statistically valid confidence intervals together with accurate point estimates forms a methodological advance because converting a predictive model into a practical system for maritime operations which takes risk into consideration becomes possible.

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Agricultural Crowd Funding in promoting Rural Growth– An Empirical Study in Tamil Nadu

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ABSTRACT

Agriculture plays a vital role in sustaining rural livelihoods in Tamil Nadu district, but access to timely and convenient finance which ruins a firm challenge that is to be faced for small and marginal farmers. The credit system which is followed traditionally often includes complex procedures, indemnity requirements, and delayed distributions, decrease the financial inclusion of rural communities. Agricultural crowd funding has emerged as an innovative financial mechanism that supports to connect farmers with individual investors and social contributors through digital platforms easily. This study through its research explains the awareness, opinion, and adoption of crowd funding as a reasonable funding option for agricultural development in rural areas of selected districts of Tamil Nadu.

Researcher utilizes a descriptive and analytical approach using both primary and secondary data collected from the 240 respondents of the selected districts, which comprising of farmers, agri-entrepreneurs, and rural development organizers. Statistical tools such as regression and Structural Equation Modeling (SEM) utilized help to analyze the digital literacy, trust, and purpose to use crowd funding platforms for finance. The findings of this study reveal that digital awareness, social trust, and crowd funding platform usage suggestively influence the farmers' willingness to adopt the crowd funding for their development. The rural income generation process, infrastructure development, and socio-economic empowerment are enhanced with the help of the agricultural crowd funding. This study reveals that integrating crowd funding with government-supported rural finance programs can improve the financial inclusions. It also promotes the sustainable rural development in Tamil Nadu district. The policy it recommends is to reinforce agricultural crowd funding as a complementary tool for broad growth and farmer empowerment.

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AI for Economic Nowcasting and Decision-Making

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ABSTRACT

Good policy-making is rooted in prompt and precise assessment of the economy, but standard measures like GDP and inflation suffer extensive publication lags. This paper seeks to gaug artificial intelligence (AI) in revolutionizing nowcasting of the Indian economy by merging high fre-quency and multi-modal streams through the country's Digital Public Infrastructure (UPI, GSTN, Aadhaar) with agriculture and satellite-based information. Through a multi-layered analytical structure across macroeconomic indicators, outcomes of agricultural production, and market-level mandi prices, we unearth systemic blind spots that perpetu-ate what we call the "oilseed-pulse-inflation trap." More specifically, we advance a concept design undergirded by AI coupling data lakes, prediction engines, verification procedures, and policy dashboards to facilitate real-time tracking and anticipatory actions. Early detection of price spikes; strategic enforcement of Minimum Support Prices; and local advisory services for farm producers stand to benefit from such a design. But the implementation faces myriad obstacles, including those of governance, data autonomy, confidentiality, explainability, and institutional readiness. Just as India's case speaks internationally in the wider context of AI and nowcasting discourse, so do we advocate a phased approach to transformative resilience, responsiveness, and accountability within the economic governance system.

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An Analytical Study on the Synergy Between Anti-Counterfeiting Measures and Sustainable Practices Through Technology and Policy Integration

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ABSTRACT

Counterfeit goods extant a persistent hazard to fiscal constancy, buyer confidence and eco-friendly sustainability. The blend of technology and policy deals a tactic key to this issues. This study observes the interaction between anti-counterfeiting actions and defensible practices through prime and sub-ordinates data analysis. A survey questions distributed among 150 participants in Coimbatore city, which includes users, retail authorities, and brand influencers, to evaluate awareness, implementation of technology-based authentication and inclination for sustainable goods. Statistical description, consistency analysis and covariance analysis were used to perceive the association among technological, policy, and user's factors. The findings of the study describes, that block chain and virtual authentication systems improve confidence, while policy implementation confirms ethical production. The correlation (r-0.72) between technology and sustainability preference exhibits a durable synergy. The study determines that user participation, reinforced by advance technology and policy integration, is vital for a counterfeit-free and Findings expose that blockchain and virtual authentication systems improve confidence, while policy implementation confirms ethical production. The correlation (r – 0.72) between technology adoption and sustainability preference exhibits a durable synergy. The study determines that user participation, reinforced by advance technology and policy integration, is vital for a counterfeit- free and resilient market ecosystem.

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Analyzing Spending Psychology Before and After UPI: Behavioural Shifts and Macroeconomic Implications in India

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ABSTRACT

The paper will examine the two-fold influence of the Unified Payments Interface (UPI) in India based on the argument that it is a dichotomy; although a macroeconomic achievement that contributes to economic formalization and financial inclusion, its frictionless nature has significant psychological consequences at the micro-level that leads to consumer spending rather than saving. The paper compares the post-UPI period with the pre-2016 cash-based economy, in which the natural inhibitory mechanism of spending was the pain of paying and mental accounting. We maintain that these behavioral fences were broken down by A Frictionless Architecture of UPI. We discuss the major changes with the behavioral economics lens, such as reduced pain of payment and overstated cognitive biases (e.g., present bias). The quantitative analysis of RBI and NPCI data (2016-2024) shows that there is a strong positive correlation between the adoption of UPI and Per Capita Private Final Consumption Expenditure (PFCE) and the growth of UPI is exponentially higher than the growth of consumption. We find that successful UPI requires new psychologically-aware financial literacy measures.

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Empowering Green Entrepreneurs: The Role of Business Model Innovation in Sustainability

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ABSTRACT

This research will analyse the ways in which Business Model Innovation (BMI) can support Green Entrepreneurs and promote Environmental Sustainability within a business. As the world's population continues to grow concerned with Climate Change, Environmental Degradation, Depleting Natural Resources, and Sustainability, Companies are increasingly expected to integrate sustainability into their Business Models. BMI has been widely accepted as a critical method for achieving Sustainable Industrial Development by creating, delivering, and capturing value in an increasingly competitive environment. This study will explore the potential for Innovative Business Models to support Green Entrepreneurship which is defined as addressing Environmental Issues through economic growth. The study also evaluates many Hypotheses related to Environmental Awareness, Green Entrepreneurship Intentions, Green Entrepreneurial Practices, Green Entrepreneurial Innovation, Sustainable Business Performance, and more. Finally, this study finds that Environmental Awareness, Sustainability, and Entrepreneurial Intentions serve as the strongest motivating forces driving Green Entrepreneurship. In contrast, Green Innovation has little correlation with Green Entreprenerial Development. To maximize the probability of success for Green Entrepreneurship, this study highlights the necessity of a Comprehensive Strategy including Environmental Awareness, Intent, and Sustainable Practices. The findings of this study will provide significant value to Entrepreneurs and Policymakers interested in developing Innovative and Flexible Business Models that align with Sustainable Objectives and Enable Long Term Economic Growth.

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Digitization and Sustainable Growth: Examining the Impact of UPI Transactions on India's GDP Growth

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ABSTRACT

Unified Payments Interface (UPI) has emerged as a transformative pillar of India's digital financial infrastructure, reshaping payment behaviour, strengthening financial inclusion, and contributing to macroeconomic modernization. This study examines the long-term impact of UPI on India's economic performance between 2016 and 2025 using a quantitative, time-series research design. By analysing monthly UPI's transaction volume, value, and ecosystem depth alongside annual GDP indicators, the study identifies strong structural correlations between the growth of UPI and India's broader economic trajectory. The findings reveal ex-ponential expansion in transaction value and volume, deepening participation from banking institutions, and clear seasonal patterns reflecting consumer cycles. Regression and SARIMA forecasting models confirm UPI's sustained upward momentum and its potential as a real-time macroeconomic indicator. While UPI has significantly advanced transparency, digital inclusion, and MSME formalisation, persistent challenges remain in cybersecurity, digital literacy, infrastructure gaps, and market concentration. The paper provides targeted recommendations integrating AI-driven security models, inclusive digital frameworks, tools for MSME empowerment, and regulatory innovations to strengthen India's digital payments ecosystem. Overall, UPI is positioned not merely as a payment mechanism but as a digital public infrastructure driving inclusive, resilient, and technology-led economic development.

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Circular Talent Management: Re-skilling and Re-Deployment Strategies for Sustainable Workforce Renewal

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ABSTRACT

In the changing environment of rising technological disruption and demographic transformation, the sustainability of the workforce has become a strategic priority. This paper develops and empirically validates the Circular Talent Management (CTM) model, which incorporates developmental human resource practices into a regenerative system of sustainable capability development. Based upon the Resource-Based View (RBV), Dynamic Capability Theory (DCT), and Social Learning Theory (SLT), the model identifies Reskilling and Redeployment (RSR), Career Mobility (CM), and Employee Empowerment (EMP) as antecedents to Learning Agility (LA) - an adaptive mediator of Workforce Sustainability (WS) with moderation by Organizational Learning Culture (OLC).

Structural Equation Modeling (SEM) with maximum likelihood estimation and 5,000 bootstrap resamples of 340 service sector employees supported a good fit of the model (χ^2/df = 1.59, CFI = .965, TLI = .961, RMSEA = .042) and strong explanatory power (R^2_LA = .870; R^2_WS = .814). Our findings indicate that all three HR practices have a significant positive effect on agility and sustainability through partial mediation, whereas OLC reinforces the CM-WS connection. The research redefines sustainability as a dynamic learning process - that arises not from resource ownership, but from renewing capabilities in adaptive learning cultures - providing theoretical contribution and practical guidance for the future design of human-centered organizations.

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Eco-Conscious Hiring and its Impact on Employer Branding and Talent Attraction: An Empirical Study of Sustainable Recruitment Practices in Jaipur's Corporate Sector

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ABSTRACT

The protection of environment has become one of the most important issues in today's world. The human resource management department is also not un-touched from this issue and has started focusing on environment issue through a more environment friendly approach. In this perspective green recruitment has emerged as a prominent method. Green recruitment means attracting and hiring such candidates who have an inclination towards environment protection and sustainability. The current study investigates the relationship between green recruitment practices, employer branding and talent attraction. The research extends the conceptualization of Green Human Resource Management (GHRM) and Employer Branding Theory to explore how sustainable human resource policies and green recruitment. The research design is quantitative and cross-sectional, and primary data were collected from 300 respondents, who were human resource professionals and prospective job seekers from the information technology, service, and manufacturing sectors in Jaipur, India. The statistical methods used for the analysis are correlation, multiple regression, and ANOVA to test the hypotheses that eco-conscious hiring impacts employer branding and talent attraction.

The analysis of the data revealed that the organizations which practice green recruitment, have stronger employer brand equity, and the level of interest of job seekers is much higher. The study contributes to academic literature by demonstrating how sustainability-focused HR policies can influence corporate reputation and talent attraction. The findings of the study provided useful information for managers to understand the importance of eco-friendly hiring and green recruitment in building corporate reputation and to take actions for being chosen by job seekers.

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Emotionally Intelligent AI: Emotion Crafting, Conscientiousness & Human Centered Tech

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ABSTRACT

The paper highlights the importance of creating emotionally intelligent systems in reaction to rising human dependency on artificial intelligence (AI) in human-related areas like healthcare, education, and customer service. It presents the framework of Emotionally Conscientious AI (ECAI) that incorporates three dimensions: emotion crafting, conscientiousness, and human-centered design. Emotion crafting enables AI to identify, mimic, and act on human emotions based on the principles of affective computing and multi-modal data whereas conscientious AI centers on ethical decision-making, which promotes fairness, transparency, and non-maleficence. The humanistic one focuses more on empathy, inclusivity, and social background, and strives to make AI a supportive system to human agency, not to replace it. The study provides examples of how emotionally intelligent AI can be applied successfully in such fields as mental health (emotion-conscious chatbots), education (affective tutoring systems), and customer service (empathetic virtual agents) via a wide literature review and field case studies to depict the beneficial effects of this kind of AI on user trust, engagement, and satisfaction. The paper also notes the problems in the form of cultural biases in emotion recognition, ethical issues involved in emotion simulation, and the absence of standardized scales of evaluating emotional responsiveness. The authors suggest that there is a need to conduct interdisciplinary studies, to collect cross-cultural data, and to provide strong ethical monitoring to shape the design of future emotionally intelligent technology. On the whole, this publication can be considered as one of the first steps toward building ethical and emotionally conscious AI systems, since, as it is suggested in the article, combining emotional intelligence, ethical values, and user-centric strategies might become one of the decisive factors in the future of technology.

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Impact of Employee Well-Being on Sustainability Competencies: The Mediating Role of Training & Development Initiatives

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ABSTRACT

The growing trend in the world to be more environmentally responsible and sustainable has escalated the necessity of organizations to develop sustainability competence in the workplace. This paper explores how employee well-being and training and development based on sustainability affect the emergence of sustainability competencies in the modern organizational environment. Within the frame of quantitative research design, 180 employees working in different industries were chosen and 180 of them were analyzed using independent sample t-test, correlation analysis and linear regression modeling. The results show that there is a great disparity between the level of competency between trained and untrained employees, with the trained employees having much higher levels of sustainability competencies ($t = 4.18$, $p < 0.001$). There are the results of correlation which show that there is a moderately strong positive relationship between the employee well-being and sustainability competencies ($r = 0.57$, $p < 0.001$). Regression analysis also supports that well-being also has a significant influence on sustainability competencies as it predicts 29% of the variance ($R2 = 0.29$). These findings highlight the fact that the well-being of employees and aligned sustainability training are mutually supporting forces towards development of sustainability capability. The paper concludes that companies should embrace a joint HRM strategy that focuses on the welfare of their employees and training based on competencies to develop a workforce that is sustainability-focused. Future research directions are longitudinal research, more sophisticated modeling approaches, and more studies on the role of leadership and cultural variables in sustainability competencies.

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Festival of Light as a Catalyst for Sustainability: An Opportunity for Environmental Awareness through PM2.5 and PM10 Monitoring

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ABSTRACT

One of the India's most colorful and widely observed holiday is ―Diwali― which is frequently celebrated with fireworks which can cause noticeable but transient drops in air quality. High resolutions measurements of PM2.5 and PM10 were conducted using a portable optical particle counter at two different locations in Jaipur, Rajasthan a residential neighborhood and a busy commercial district in the ―Old Pink City―, in order to evaluate these effects under real world conditions. The Diwali period was observed with the main festival day, 20th Oct 2025, serving as the focal point.

PM2.5 concentrations in the residential area were about 40 µg m-3 the night before Diwali but they rose dramatically during the evening and night of the celebration often surpassing 1,000 µg m-3, with minute-scale peaks close to 1,300 µg m-3. After that, concentrations steadily decreased until by 23 October they were almost back to baseline (~50 µg m-3). On the other hand, in commercial district, daytime PM2.5 levels continued to be higher because of ongoing traffic emissions, while the increase related to fireworks was more moderate. The chorological evolution emphasis how crucial atmospheric dynamics are controlling the intensity and duration of pollution episodes, especially nighttime stability and the ensuing morning boundary layer development. Ambient PM2.5 levels before and after Diwali exceeded WHO air quality guidelines, indicating the need for mitigation beyond the festival period, even though the extreme peaks were only temporary. This study highlights improvement in firework compositions, time window regulations and low emission alternatives like laser and drone-based displays due to the disproportionate health risk to children and other vulnerable populations. Finally, Diwali can also be seen as a chance to promote environmental awareness, reinterpreted as a modern holiday where light triumphs over darkness in a manner consistent with environmental and public health.

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Sustainable Synergies: Bridging Technology, Policy and Enterprise for a Greener World

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ABSTRACT

The current chapter explores the changing trend patterns of consumer behavior towards sustainable products putting them on a platform that approaches technology, policy and business. It integrates the modern theoretical viewpoint and empirical findings in identifying the drivers, obstacles, and decision heuristics in determining sustainable consumption. The chapter presents a comprehensive framework, the Sustainable Consumer Decision Ecosystem (SCDE), which con-siders psychological motivators, digital influence channels, regulatory prompting, and practices of individual firms that lead to quantifiable changes in the purchasing behavior. It offers insights into the key enablers of technology (data analytics, IoT, blockchain), policy tools (standards, incentives, extended producer responsibility) and enterprise strategies (sustainable branding, circular business models, supply-chain transparency). Practical implications to the researcher, policy makers, and practitioners are explained, and an agenda of future research to enhance theory and practical in the age of green consumerism is presented.

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Technology Meets Human: Investigating the Role of AI Driven Chatbots in Determining Online Purchase Decision for Sustainable Personal Care Products: A Multi Group Analysis

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ABSTRACT

The recent advancements in the application of Artificial Intelligence in chatbots have significantly changed the way consumers interact in cyberspace. The effect of chatbot usage on consumers, particularly in relation to differences in experience based on gender in using Sustainable Personal Care Brands Chatbot of Mama earth and Forest Essential Chatbot, is explored in this paper. The survey involved a sample population of 206 people, in a manner that encompasses individuals of a wide range of backgrounds. Multi-Group Analysis was carried out to determine the effect of gender on the structural relationship. The results indicate that chatbots have a major effect on customer experience, customer satisfaction and customer brand loyalty; however, differences based on gender were noted. Male consumers showed a high level of satisfaction in relation to consumer interaction with chatbots, where empathy and understanding were appreciated. On the other hand, females showed a need for speed and efficiency. These points indicate that gender-specific chatbots need to be developed for customer experience personalization. The paper contributes towards existing literature in relation to retail usage of AI, to highlight that gender is one of the factors that need to be considered in relation to existing studies in technology adoption and customer behavior.

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Computing the Impact of Macroeconomic Factors on Sustainable Development of Indian Financial System: An Empirical Study on Nifty50.

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ABSTRACT

This analysis studies the relationship between macroeconomic factors and stock market performance represented by the NIFTY 50 index in India. Specifically, three of the most important macroeconomic variables are discussed: GDP, USD/INR and Broad Money Supply (M3), using quarterly data in a time series framework. The study derived several linear regression model to assess the explanatory power of these macroeconomic variables and significance level. The results reflected that GDP has the highest and positive effect on NIFTY 50 returns at R^2 equals to: 0.94; M3 follows GDP at R^2 equals to: 0.93, and lastly USD/INR showed a modest effect at R^2 equals to: 0.78. The analysis

reflected that growth and liquidity are primary drivers of market performance and exchange movement does have implications, though it remains secondary to correlation with market performance. Residual diagnostics concluded linear models may not be appropriate due to an inability to capture dynamic and time-varying effect. The research re-stated the macro-fundamental role of Indian equity markets and de-livers new empirical evidence and perspective for interest groups to consider relative to the economic indicators effect on the market valuation.

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ImVM-KMA: Energy-Efficient Load Balanced Cloud Operation using an Improved Migration Virtual Machine Clustering Technique

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ABSTRACT

One of the primary advanced technical system in the area of computational sciences has emerged from cloud computing. Live migration is a special cloud computing attribute enabling Virtual Machines (VMs) to change from various physical locations without needing to avoid them down. It also allows active assignment of work of cloud facilities based on the energy organization needs, minimizes interruption by making the movement of the running samples. mVM was an effective technique for live migration of VMs in cloud. This technique mimic pre-copy algorithm which was an iterative process. Initially, entire memory used by the VM was given to endpoint facility during VM is still working. Subsequently, the memory pages were sending iteratively which were made dirty during earlier transfer. The extent for migration was based on the memory erosion proportion and bandwidth assigned to the relocation. After that, the VM was deferred on the introducing server, up-to-date pages of memory and its state are shifted and the VM is continued on the destination server. However, its migration time is high since calculating the dirty rate and bandwidth of all VMs and Physical Machines (PMs) in the data center. In our investigation, migration time of mVM model is reduced by clustering the similar VMs and PMs based on the resource requirement and availability using K-Means clustering Algorithm (KMA). Then, the suitable physical server and potential VM is determined based on resource utilization, resource balance and resource capacity. By grouping the similar VMs and PMs, the computational complexity for finding suitable physical server and potential VM is reduced. Finally, the selected potential VM is migrating to the suit-able physical server based on the mVM model.

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AI-Powered Agri-Marketplace: A Farmer-to-Consumer Platform with Freshness Validation and Multilingual Voice Assistance

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ABSTRACT

The agriculture sector is the backbone of rural economies, yet the smallholder and marginal farmers still suffer from the same problems, such as price exploitation, reliance on middlemen, and poor digital skills. The rise of e-commerce and agritech has started to open up new ways for the farmer-managed supply chains to be modernized through F2C transactions next to the consumer. Unfortunately, the current platforms lack major features like the detection of quality products automatically, fluid pricing, and accessibility for technologically unadvanced users. Previous researches in computer vision and machine learning have thrown light on different approaches for the sorting of produce, supply chain management, and price prediction, but such studies are limited to a specific experimental setup owing to their reliance on static datasets and controlled environments which, in turn, restrict their applicability to the real world. Through an e-commerce model of AI-Customer interaction framed around the Farmer-to-Consumer (F2C) approach, this research has came up with a proposal which integrates the use of CNNs for detecting the freshness of the product, a hybrid LightGBM and Attention based LSTM model for predicting the dynamic price in real-time, and map-ping of the location to the farmer to make it easier to find the farmers of the locality. Furthermore, the system being proposed comes with a multilingual voice interface that makes it easy for poorer farmers, who are usually the victims of these digital divides, to join in. The designed solution guarantees that the process is carried out with fast, precise, and accurate results that in return ensures price fair-ness, and quality authenticate. Upon the integration of these modules, the agricultural marketplace that is environmentally friendly, and transparent and that eliminates post-harvest losses, gives and secures farmer's profits, and is part of the modernization of the agrifood supply chain is created.

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SmartCare: A Federated Explainable AI System for Provider Recommendation and Healthcare Network Optimization with Blockchain Validation

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ABSTRACT

Healthcare is an industry in flux, where everything seems to change frequently, and those making decisions must often make difficult choices without adequate or complete information. In changing situations, experts in the networks of healthcare constituencies are working hard to optimize access, quality, and cost while still following state laws and regulations, and trying to build trust with patients. Traditional systems lean heavily on centralized data storage, non-transparent models, and tenuous verification processes that can lead to inefficiencies, compliance breaches, and little transparency. This work introduces Smart-Care, a federated, explainable AI framework specifically focused on maximizing provider networks in an integrated, future-states manner. SmartCare includes federated data training, which allows healthcare providers and insurance companies to collaboratively develop models without placing sensitive raw data in the same system. The pipeline first applies geo-access filtering, then quality assessments, and finally cost modeling to create optimized provider recommendations. Smart-Care bolsters confidence in decision-making via causal inference models, allowing a user to test "what-if" scenarios, and by providing personalized reports with recommendations that are sensitive to geographic, quality, and fiscal needs. Fur-thermore, SmartCare allows for the blockchain based validation of provider credentials which adds an additional dimension to provider credentialing and can provide proof of secure and immutable credentials and audit trails in fraud and compliance investigations when applicable. Finally, SmartCare has an Explainable AI (XAI) module that provides deterministic rationales for provider recommendations, helping to enhance transparency and trust with patients.

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An Intelligent E-Commerce Platform with Semantic Search and AI-Based Contextual Chatbot Integration

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ABSTRACT

This paper presents an innovative and intelligent e-commerce platform to increase user engagement and improve the online shopping experience. Conventional search engines with inverted indexes and lexical matching typically are unable to solve challenges associated with query vagueness, incorrect vocabulary specification, and lack of personalization. To address these problems, we designed and implemented an efficient, user-centric system which integrates a hybrid retrieval approach with a formal, standardized product representation model based on the deliberated concepts of DPSR and SMM. The retrieval engine of our system is a semantic search engine based on the advanced transformer-based language model SBERT. For an even richer user-hyper-personalization experience, we enhanced the system further to include an emotional preference modelling and sentiment recommendation layer, including an interactive chatbot to provide users more information to understand the product better. A sample of 18,500 product records and 6,200 user activity logs were used to evaluate the test model. The semantic search component increased retrieval relevancy by

21.4%; the chatbot reduced time spent resolving average queries from 18.2 seconds to 9.6 seconds (an improvement of 47.3%). The results of the User Study were an improvement of 32% in Task Completion Efficiency and 27% in Customer Satisfaction Scores versus traditional, keyword-based search algorithm outputs. These findings show that by combining Semantic Search with a Contextual Dialogue Sensor you can improve usability, relevance of information, and Improved Automation in the E-Commerce Environment; an innovative combination of technology! We provided experimental evidence on the system that we deployed to demonstrate the deep learning-based semantic retrieval architecture greatly outperforms traditional searches in accuracy and user-centricity across numerous product categories.

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A Multi-View Hybrid Intrusion Detection Framework Optimized by Firefly-Gazelle Algorithm for Big Data Cybersecurity

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ABSTRACT

Scalable and Intelligent Intrusion Detection Systems (IDS) with an adaptive strategy are essential for handling the heterogeneous data in modern network systems. However, the traditional IDS models have challenges of low false alarm rates for handling such big heterogeneous data due to their static feature learning and limited adaptivity to evolving attacks. This paper proposes a novel and adaptive IDS framework called Adaptive Multi-View Hybrid Intrusion Detection System (FGOA-AMV-IDS), which is optimized by Firefly-Gazelle Optimization Algorithm (FGOA). The proposed FGOA-AMV-IDS framework combines the multi-view feature learning with hybrid Deep Learning (DL) backbones and bio-inspired optimization. The proposed model uses a CNN–BiGRU–Transformer hybrid network to extract spatial, temporal and contextual features and a Cross-Attention Transformer to fuse these features with flow-level and content-level features. The FGOA is developed by combining the exploitation phase of Gazelle Herd Optimization and the exploration phase of the Firefly Algorithm to improve the convergence of hyperparameter tuning of the hybrid DL backbones. The proposed FGOA-AMV-IDS obtained accuracies of 99.92%, 99.40%, and 99.85% and FPR of 0.004%, 0.002%, and 0.003% FPR when evaluated on NSL-KDD, UNSW-NB15, and CSE-CIC-IDS2023 datasets, respectively. Thus, the proposed FGOA-AMV-IDS provide scalable and adaptive intrusion detection with high-performance solutions for the real-time big data cybersecurity environments.

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Importance of Traditional Knowledge of Handicrafts for Sustainable Development: A Comparison of Indus-trial and Handicraft Making Processes Towards Sustainability

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ABSTRACT

This research paper investigates critical and important role of traditional knowledge-based handicrafts making in sustainable development. Handicraft making in India in general uses traditional knowledge focuses on local resources and indigenous making techniques. This paper investigates historical evolution of few traditional handicrafts of India and their contemporary signification. It com-pares handicrafts which have been made with traditional knowledge with its equivalent Industrial process for similar products with sustainability lens. It looks into the deeply embedded sustainability ethos into the traditional handicraft practices. This study of handicrafts investigates vibrant areas of creativity, unique identity, and eco-friendliness. It maps handicraft's historical persistence and adaptation to respond to environmental, social, and technological changes, demonstrating its resilient nature. From comparative tables and extensive literature re-view, the paper differentiates traditional handicraft methods of making including infrastructure for making, raw material sourcing, from industrial processes of mass production that depend on fully or semi mechanized inputs, processed raw materials, and higher energy consumption.

The findings of this paper reveal handicrafts based on traditional knowledge are more sustainable, help to preserve heritage, and provide livelihood to many. All this is evident from finds of this paper.

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Integrating Employee Happiness and Customer Satisfaction Through Sustainable Practices: An Empirical Study of Quick-Commerce Firms in Jaipur, India

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ABSTRACT

The increasing pace of quick commerce in our country, India has changed the consumption pattern and expenditure habit of urban people. This is primarily due to the rapid delivery of goods to customers' doorsteps within a very short time frame. We can quote operational efficiency and digital technology as the factor behind such growth but in recent years the sustainability aspect has become the foremost requirement for making strategic decision of any company managers. But all these have

put a pressure on quick commerce companies to attain two major goals, one is to maintain the pace of economic growth of the company, the other is to maintain and save our planet and its resources by reducing the harmful effects generated for gaining economic profit and also ensuring the employee wellbeing like delivery partners who are the backbone of quick commerce.

The present study investigates the relationship between sustainable organizational practices and employee's happiness as well as customer satisfaction. Jaipur has been selected as the focus area due to the rapid expansion and growing significance of quick commerce in the region over time.

On the basis theories like Green Human Resource Management (GHRM), the Service-Profit Chain, and Stakeholder Theory, the study puts forth as well as empirically tests a Structure that connects the sustainable practices, employee happiness, and customer satisfaction.

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Leveraging Quantum Natural Language Processing Techniques for Enhancing Mental Health Analysis

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ABSTRACT

Artificial intelligence has been growing rapidly and this has resulted in many concerns regarding computational sustainability and resource use. The rapid growth in AI presents many challenges to sustainability, especially in areas such as mental health analytics that are limited by ethical concerns on how to access data and to train large models. Many tradition-al NLP techniques use large amounts of data and consume a lot of power to train. Therefore, NLP techniques are not suitable for use in sustainable digital health systems. In this research article, we explore Quantum Natural Language Processing (QNLP) as a resource-efficient alternative to classical natural language processing models for classification of mental health texts. Using the DisCoCat framework, we created a pipeline comparing traditional ML techniques with quantum augmented linguistic models. Using the lambeq framework, we implemented a quantum work-flow on a PennyLane-based quantum simulator, enabling hybrid quantum and classical optimization. This research demonstrates that quantum-enhanced computational intelligence represents a promising path to producing scalable, resource-efficient, and environmentally-sustainable AI systems. As such, this work forms the basis for the development of future green innovations in digital mental health. The results of this research show that the development of Sustainable AI systems can help create future Digital Mental Health platforms and other Socially Responsible Applications. Also, Quantum-Enhanced Computational Intelligence (QCI) has proven to be one of the best technologies for building Sustainable, Scalable and Resource-Efficient AI Systems in line with Green Innovation and Responsible Technology Growth Goals.

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Narrative Synergies: A Bridge Between Culture, Policy, and Sustainable Enterprise

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ABSTRACT

Cultural narratives have been traditionally living technologies that form common values, transfer knowledge, and maintain community identity. In terms of sustainability, they can be developed as living media that can be used to bridge the culture, policy and enterprise to achieve ecological consciousness and shared responsibility. In this paper, we will examine narrative as an important building block of sustainable synergy, which has become a core aspect of the narrative traditions of India that reflect the ethics of environmental conservation and local community-based conservation. The paper utilises classical texts like the Panchatantra and Jataka Tales, indigenous oral traditions such as the Bishnoi folklore, and modern literature such as The Hungry Tide by Amitav Ghosh to show how narratives long held communication of ideas about coexistence, empathy and care of the environment. The study will use a mixed approach by utilising textual analysis, revealing the qualitative perspective of the problem, and a quantitative survey of students, educators, and community members (n=100) to determine the level of awareness & perception of the sustainability values conveyed in the form of storytelling. The discussion shows that 78 percent of the participants have considered narrative-based learning to be more effective in learning about environmental ethics as compared to traditional training. The study explains storytelling as a pedagogical tool, both ancient & modern, by applying the frameworks of ecocriticism, environmental communication, & cultural sustainability. Connecting the narrative traditions & policy frameworks to digital innovation & green enterprise, the paper shows that storytelling functions as a kind of cultural technology that can work to change the awareness of environmental issues into the form of participatory action. It finds that the combination of culture, data, & policy, which is promised by the ICSS-2026, can help make communities more sustainable in a better world.

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Designing Inclusive FinTech: Gender-Smart, Accessibility-First Mobile Finance to Reduce SDG Inequalities

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ABSTRACT

This small-N exploratory pilot study examines whether inclusive-by-design FinTech can help convert digital access into sustained use and financial resilience for underserved users. We prototype and evaluate two design bundles: (i) accessibility-first features (USSD/IVR, local-language prompts, large-text/icon flows, assisted KYC, error-tolerant steps) and (ii) gender-smart, privacy-by-default onboarding (masked notifications, short auto-lock, granular consent, budgeting/earmarking nudges). Using embedded A/B tests in a partner mobile-finance application in East Godavari district, Andhra Pradesh (India), a staggered rollout analyzed with modern difference-in-differences, and PLS-SEM for behavioral pathways, we assess five preregistered outcomes: active use, savings-buffer stability, on-time bill-pay, short-term credit access, and emergency-expense coverage. In a small-N pilot (N=400), both bundles outperform status quo are associated with, with larger gains for the gender-smart bundle: active use +9.2 percentage points (SE 3.0) and on-time bill-pay +7.0 percentage points (SE 2.7) versus control. Mediation results indicate effects operate primarily through higher platform trust and lower perceived risk; for the gender-smart bundle, the standardized indirect effect via trust = 0.028 (95% CI [0.010, 0.047]). Heterogeneity analyses show amplified benefits for women, persons with disabilities, rural users, and shared-phone users, underscoring the importance of multi-channel access and shared-device privacy. We offer an auditable checklist of inclusive defaults and supervisory guidance linking design standards to equity-disaggregated reporting, positioning design as a causal lever for SDG-aligned financial inclusion.

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A Theoretical Study of Exchanging Plastic Bottle Waste for Internet Access in the Philippines

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ABSTRACT

The Philippines confronts the dual challenges of a severe plastic pollution crisis and a persistent digital divide, which disproportionately affect low-income com-munities. This paper proposes the "PET-Net" framework, a novel, community-based model designed to address these interconnected issues simultaneously. The framework establishes a micro-circular economy where post-consumer polyeth-ylene terephthalate (PET) bottles are collected and exchanged for internet brows-ing hours. Drawing upon successful local models such as the "Aling Tindera" waste-to-cash program and the ubiquitous "Piso WiFi" sachet internet business, the PET-Net framework outlines a low-tech, scalable, and self-sustaining system. It operates through local collection hubs, typically existing sari-sari stores, which act as intermediaries that accept plastic waste from community members in ex-change for internet credits. These hubs then generate revenue by selling the ag-gregated plastic to recycling partners, which in turn finances the provision of in-ternet access. This study details the operational workflow, stakeholder roles, and economic model of the framework. Expected results include a quantifiable reduc-tion in plastic waste, increased digital inclusion for underserved populations, and

the creation of localized economic opportunities. By converting environmental stewardship into a tangible digital reward, the study presents a pragmatic and in-novative solution to foster sustainable habits and bridge the information gap at the grassroots level.

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Role of Generative AI in Designing Sustainable Smart Cities: An Intelligent Framework for Urban Efficiency and Climate Resilience

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ABSTRACT

Unplanned city growth together with global warming has brought about the need for the development of smart design frameworks that would give equal priority to environmental, social, and economic aspects and at the same time would be re-source-efficient. This paper shows a concept of a Sustainable Smart City Frame-work based on Generative AI that combines the multi-modal data fusion, Generative Design Algorithms, and Reinforcement Learning to generate and optimize sustainable urban environments on its own. The use of hybrid models namely Variational Autoencoders, adversarial nets and diffusion based generative models has been deployed to produce the adaptive city layouts, power grids of renewable energy, and green transport systems with the aid of real-time sustainability metrics. The assessment of the system's performance was done in a digital-twin environment using various datasets related to energy consumption, transportation, and environment. The outcome of the study was that all sustainability indices showed better results: Energy Efficiency Index (EEI) went up to 0.89, Carbon Emission Rate (CER) went down to 0.26, and overall Sustainability Performance Measure (SPM) went up by 22% compared to the baseline AI models. The dual-feedback mechanism inculcating internal policy updates and external reinforcement loops secure the adaptability on both algorithmic and system levels. Thus, the proposed work offers a scalable, SDG-aligning method combining AI, Environmental Engineering, and Urban Systems. The introduction of this framework lays down the groundwork for AI-guided sustainable urban governance that through continuous generative learning could turn cities into energy-efficient, carbon-neutral, and socially inclusive ones.

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Green Ethics and Cultural Memory: Traditions as Sustainability Narratives

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ABSTRACT

The Modern sustainability is characterised by technocratic, policy-based, as well as market-based approaches that give preference to efficiency, quantification, and governance systems and disregard the ethical, cultural and non-Western knowledge systems. In this paper, the challenge of such epistemic imbalance is to locate the Valmiki Ramayana as a civilizational repository of ecological ethics that has been maintained by the cultural memory and Traditional Ecological Knowledge (TEK). The purpose of the study is to (i) redefine sustainability as a culturally entrenched moral practice and not merely a managerial process, and (ii) illustrate the role of an epic to hold long-term environmental ethics.

The Ramayana is analysed qualitatively in the paper using eco-critical and hermeneutic approaches to text with an environmental humanities ecological lens, cultural memory theory (Jan Assmann; Aleida Assmann), and eco-ethical philosophy, with a specific emphasis on forest ecologies, human-non-human relations, ascetic practices, and ecological governance models. Such an interdisciplinary approach can be used to decode ecological values in the form of narrative practices, moral role models, and space imaginaries.

It is found that sustainability in the Ramayana is not based on the aspects of resource optimisation or economic growth, but rather on the dharma ethic of restraint, reciprocity, stewardship, and self-regulation. Forests (vana) become ecological moral spaces instead of resources to be exploited, and kingship and government are described as ecological duties that spread to animals, ecosystems, and cosmological order. Ascetic seclusion, relations across the species, and the results of ecological transgression in the story are all significant in expressing a consistent ecological ethics of care instead of domination.

The paper concludes that Ramayana is a mnemonic system of sustainability, which relays ecological ethics over the generations via the cultural memory. This study can be used in the decolonisation of environmental discourse and broadening the sustainability theory in terms of Western technocratic paradigms by foregrounding the existence of an ethical framework based on the epic. The incorporation of these ecological stories that are rooted in culture provides more accommodative, morally sound and sustainable strategies to environmental governance in the Anthropocene.

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An Assessment of the Impacts of Green Chemistry Adoption in Sustainable Pharmaceutical Manufacturing

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ABSTRACT

This research abstract gives an in-depth analysis of the use and application of green chemistry concepts to pharmaceutical production, with a strong focus on its complex effects on the environmental sustainability, economic functions, as well as social implications. The study examines the impact of the application of green chemistry in minimization of hazardous wastes, energy usage and efficient utilisation of resources and increased operating profitability and stakeholder awareness. The methodology combines a strict empirical test that will be backed by structural equation modelling to test these relationships. The findings prove that the implementation of green chemistry has a significant positive effect on pharmaceutical production, making the industry practises sustainable in the world and in accordance with the international regulations. The research results are to the realisation of a transformative role played by green chemistry in ensuring a sustainable development, where awareness and policy support should underline the accelerated adoption. This paper will offer practical recommendations to the stakeholders and policymakers in the industry to facilitate sustainable technologies, enhance regulatory systems, and eliminate obstacles to the adoption of the green pharmaceutical manufacturing.

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Implementing QFD for Analyzing the Language Learners and Improving the Performance

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ABSTRACT

This paper discusses the critical importance of language skill development in to-day's competitive world, particularly in English language proficiency. Effective communication is essential for personnel and professional success and can enhance confidence, understanding and access to Global resources. New tools are employed in the measurement of skill in a language learning and put appropriate factor for improving the performance. In this paper, the authors have attempted to find the competitiveness of the language learners and how to bridge the gap for further improvements. The literature review presents various training methods and strategies for language skill development, including Quality Function Deployment, which is used to evaluate Quality gaps in learners' expectations versus their actual experiences. The importance of the individual needs/ customer satisfaction clearly is shown in this study. Above all, the Quality Function Deployment method is the best way to bridge the gaps like, perception gap, understanding gap, design gap, process gap and operations gap between the learner and the trainer. The study identified eleven factors that language learners prioritize, such as fluency in speaking and understanding grammar. Corresponding to these eleven factors the authors planned eleven control parameters to work on the QFD method. The authors propose that using QFD can significantly bridge the operational gaps identified in language training, ultimately improving service quality in language learning. This study emphasizes the learner perceptions on selecting the training method by using the tool QFD. Furthermore, this study offers some new ways for future research endeavors emphasizing the need of learners including fun related or AI integrated methods for developing language skill. Here, an at-tempt has been made to

implement the QFD for language skill development and which are the factors affecting the performance. A frame work was developed for the implementation, 'House of Quality', of QFD as a quality improvement tool. The customer priority was analyzed through this HOQ. The systematic review design probes into the integration of QFD method with English Language Learning, even though it is a skill development.

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Smart Waste Management for Sustainable Green Innovation through AI and IoT Technologies

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ABSTRACT

The growth of population and the quick development have significantly improved the challenges faced with waste management. The adoption of smart and intelligent solutions is necessary. The green innovation technologies are the critical factors that improve the effectiveness of the sustainability goals. The Eco In-novation and green technology is changing various organizations and surroundings around the world, transforms more sustainable and eco-friendly nature. This article focuses on smart waste management systems that use Artificial Intelligence with IoT technologies to leverage sustainable green innovation. The IoT sensors are embedded in the waste bins to predict the levels of waste, types of waste and the conditions of environment. The Artificial Intelligence techniques and models are used to generate the waste patterns and automation process of waste segregation. The proposed system reduces carbon emissions, enhances the overall efficiency of environment. This article focuses on Green Technology innovations and the role of IoT in environmental issues by creating the sustainability future for the next generations.

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EA-SMA: An Energy-Aware Slime Mould Algorithm for Load Balancing and Network Longevity in Green IoT - Revised version

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ABSTRACT

Load balancing in heterogeneous Green IoT networks endures a critical challenge: "energy-blind" algorithms ignore node-level battery states, leading to premature network failure. This research presents the Energy-Aware Slime Mould Algorithm (EA-SMA) which introduces a Residual Energy Factor (REF) into search mechanism. Simulations comparing EA-SMA against GA, PSO and Standard SMA demonstrate that EA-SMA achieved a superior best fitness of 0.7893, significantly

outperforming Standard SMA(132.90), CA(29.44) and PSO(29.38).Crucially, while all three conventional algorithms depleted the weakest node (ID 81) to 0% or below resulting in network failure, EA-SMA preserved the weak node's energy at 14.90%. These results quantify EA-SMA's efficacy in maximising network longevity while maintaining low-cost task allocation

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Sentimental Analysis on Investors' Awareness Level on Mutual Funds

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ABSTRACT

The study presented in this research paper examines the attitudes, preference and behavior of people toward mutual fund investments based on the survey conducted on 100 people. The study focuses on different areas of mutual fund investment such as the frequency of investment, the preferred companies, the reasons behind the investment and the information sources. The results indicate that there are wide disparities in investment participation as 63% of the respondents indicate that they have never invested in a mutual fund and this may be as a result of the respondents being unaware and uncivilized. The strong brand reputation and trust are seen among those who have invested with a preference being laid on the established brands especially the Reliance Mutual Fund. According to the analysis, the main reason why mutual funds are preferred to other sources of investment is their efficiency in taxation and high returns in the long term. Sentiment analysis also demonstrates that investors are counting on unofficial channels of information about investments, indicating that more investor education should be made. The paper concludes that the mutual fund companies need to overcome these barriers by introducing sound educational programs and enhancing communication programs to create a higher level of awareness and involvement in the mutual fund market. The mutual fund industry can empower people through knowledge and confidence and increase their involvement, making them more informed when making investment choices.

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Data-Driven Models for Solar Energy Forecasting: A PRISMA-Based Systematic Review (2017–2025)

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ABSTRACT

The efficient inclusion of photovoltaic systems in the modern energy grid cannot be done without precise forecasting of solar energy due to variability of solar re-sources. Despite the considerable progress made in the data-driven forecasting methods, there is still a lack of a consolidated and well-methodological synthesis of the latest models. Accordingly, this study demonstrates a PRISMA 2020 compliant systematic review of data driven solar energy forecasting research studies published between 2017 and 2025, focusing on solar irradiance and photovoltaic power pre-diction. A total of 360 records were carefully scrutinized and this eventually resulted in 45 peer-reviewed studies that met the predefined inclusion criteria. The reviewed literature is categorically classified into statistical models (e.g., ARIMA, SARIMA), machine learning algorithms (e.g., SVR, Random Forest, XGBoost, ANN), deep learning architectures (e.g., LSTM, CNN-LSTM) and hybrid and ensemble frame-works. The test interrogates the targets of forecasts, time horizon, performance and geographical location distribution of studies. The results show a clear transition from the traditional statistical models to machine learning and deep learning models, with hybrid and deep learning models showing a very good forecasting accuracy, especially under highly volatile conditions. However, issues of model generalisation, computer cost and region biases of data and lack of consistency in benchmarking are still relevant. This review provides organised knowledge to researchers and practitioners and outlines the future research direction including explainable artificial intelligence, transfer learning and scalable spatiotemporal forecasting models.

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Understanding Consumer Behavior and Motivational Factors in the Adoption of Sustainable Products

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ABSTRACT

This study is conducted to address the main factors influencing customers to buy sustainable products and to understand the motivating factors of buying sustainable products. The writers have reviewed the main consumer studies to pinpoint motivating elements and make judgments about how they affect the purchase of sustainable products. Use of primary data collected through questionnaires has been collected from different parts of the country. Linear regression is applied to the data to examine the relationship between motivating variables and marketing variables. The T-test was applied to get the dominant motivating factors that influence buying behavior. The results show that Consumer Knowledge, Environ-mental Concerns, and Promotional tools are the most important motivational

factors. Moreover, the Marketing variable has a significant not dominant influence on buying decisions. The study assists businesses, authorities, governments, manufacturers, and sellers in understanding what drives consumers to purchase sustainable products and how to encourage them.

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Enhanced Agriculture: Hybrid IoT and Blockchain System for Sustainable Smart Farming

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ABSTRACT

Paradigms for decentralized, trustless data exchange and autonomous device collaboration are created by merging Blockchain (BC) and the Internet of Things (IoT). However, limited resources and energy constraints are the factors for major challenges in achieving sustained participation of IoT devices in such decentralized networks. In this paper, we study incentive archetypes with IoT node participation in blockchain ecosystems. Agriculture is the backbone of many countries. Utilizing technology effectively in agriculture enhances the yield of crops and increases profits. Therefore, in this paper, we integrate IoT with BC in agriculture to create a secure and efficient data-driven smart farming ecosystem. We emphasize the scalability, energy efficiency, and security implications of token-based rewards, reputation systems, and hybrid incentive structures for smart farming. Additionally, we propose an incentive framework integrated with an economic model for addressing challenges related to sybil resistance and incentive manipulation, known as the Hybrid Sustainable Incentive Framework for Smart Farming (HSIF_SF). Efficient and sustainable participation of IoT is assured with energy-based reward distribution, lightweight consensus, and adaptive tokenomics to analyze these challenges. As a result, this precision-oriented recommendation system increases 15% of the crop yield, simultaneously reducing the input cost. Moreover, this archetype empowers rural communities using technology by assisting in boosting income and accessing the market directly. The primary focus of this paper is to provide an IoT incentive design for smart agriculture in the decentralized blockchain network.

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Empowering Sustainability: The Role of Women's Networks and NGOs in Driving Climate-Smart Agriculture, Afforestation, and Disaster Preparedness in Assam

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ABSTRACT

Assam is a climatically vulnerable state in North East India, which is affected by frequent floods, soil erosion and reduced forest cover, which jeopardize agrarian livelihoods. In this scenario, women networks and non-govern-mental organizations (NGOs) have become important community based adapters and ecological restorers. This paper explores how such organizations specifically the North East Network (NEN) and the Grow Billion Trees Foundation (GBTF) can help to promote climate smart agriculture (CSA), afforestation, and disaster preparedness. The study adopted a mixed methods research design, which involves using household surveys (n=120), key informant interviews, focus group discussions, and secondary data in six districts of Assam. The quantitative analysis reveals that there is a statistically significant rise in the level of incomes of the women farmers ($t = 29.3$, $p < 0.05$), CSA adoption increased by 27 to 68, and the resilience capacity increased by 85 percent. The rate of afforestation survival was 65% and the level of the training attendance was positively associated with the adaptive capacity ($r = 0.72$, $p = 0.01$). Qualitative results point towards empowerment via knowledge transfer, building of Eco enterprises, and enhanced institutional collaborations. These findings suggest that the collectives of women can serve as integrative space between technology, policy and enterprise, and thus transform vulnerable sex into strength. The conclusion of this paper is that women networks mainstreaming in climate and disaster governance systems can be effective in supporting the Sustainable Development Goals (SDGs 5, 13 and 15) and the ICSS-2026 vision of inclusive, green development.

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Fiscal Consolidation & Sectoral Growth: A Macroeconomic Analysis of India's Recent Tax Reforms

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ABSTRACT

This paper provides a macroeconomic analysis of recent fiscal reforms in India and the coordinated impact of corporate income tax reforms, Goods and Services Tax (GST 2.0) reforms, and personal income tax reforms. Implemented against a backdrop of strong macroeconomic fundamentals - including steady economic growth and steady inflation - these measures are not being examined as crisis driven interventions, but as a deliberate strategy to catalyze medium to long-term economic growth. Using the standard macroeconomic models, such as the Ag-gregate Demand-Aggregate Supply model (AD-AS) and the IS-LM model, the analysis shows the dual effect of these reforms. On the supply side, there are massive cuts in corporate tax rates for new manufacturing units by reducing the cost of capital, incentivized investment and shifting the long run aggregate supply curve outwards, thereby strengthening the objectives of the Make in India initia-tive. Concurrently, demand-side measures, including reduction in the rate of GST on certain consumer goods and more reliefs under the income tax for the middle class, have led to increased disposable income and private consumption.

The paper goes on to question the traditional Phillips Curve trade-off model by providing evidence of a structural change in the Indian economy in which high growth has been maintained with historically low rates of inflation and unemployment. Supporting empirical indicators, such as high readings of the manufacturing and services PMI indices and a continued increase in the inflows of foreign direct investment, signal the development of a self-reinforcing virtuous growth cycle. Overall, the results indicate that the synchronization of supply and demand orientated fiscal policies has helped to build a complementary relation-ship between the manufacturing and services sectors, putting the Indian economy on a more resilient and sustainable long term growth path.

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AI-Powered Inclusive Credit for Sustainable Financial Empowerment in Developing Economies

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ABSTRACT

The application of intelligent technologies over the past few years has grown at a very high pace in various industries and the financial sector has not been left out of the numerous transformations. One of the most significant changes in that area is the emergence of more sophisticated, intelligence-based credit scoring mechanisms which rely on the modern data analytics and machine learning methods to determine the creditworthiness of a person and a company. Such systems have become particularly relevant in the emerging economies where the classical financial institutions tend to experience fragile infrastructures, documentation and inflexible credit appraisal systems. Traditional credit rating systems generally rely on official economic documents e.g. bank statements, work history, and past borrowing history, but these are not accessible to numerous individuals in the developing world. This has resulted in systematic restrictions on access to credit for large groups such as informal workers, small enterprises, and rural populations, further exacerbating the cycle of poverty and financial exclusion. Intelligent credit assessment is an alternative that has the potential to succeed through a very wide range of non-traditional data. These models are capable of analysing not only traditional financial data, but also mobile money usage trends, utility bill regularity, social media usage, and even geolocation. This wide range of data enables AI systems to create more detailed and accurate profiles of individuals that could not be assessed in traditional systems. This extensive analytical capability allows financial institutions to provide loans to customers who have long been denied access to formal financial services. Yet, despite their potential, these technologies face serious problems. Concerns about justice, openness, and ethical decision-making remain, especially when algorithms are learning based on biased or incomplete data. If existing injustices are inherent in the training data, credit decisions may reproduce or exacerbate existing injustices. This article aims to examine the theoretical underpinnings and practical implications of AI credit scoring, how it can be used to improve financial availability, as well as ethical and operational risks.

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Computational Optimization of Neutrosophic Fuzzy Linear Programming: Ranking Method of Linear System Analysis

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ABSTRACT

In this paper, ranking-based transformations and analyses of linear systems are used to optimize Neutrosophic Fuzzy Linear Programming "NFLP" models with-in a comprehensive computational framework. Neutrosophic fuzzy numbers, which are a type of mathematical value that includes three components—truth (the degree of certainty that a value is true), indeterminacy (the degree of uncertainty or indifference about the value), and falsity (the degree of certainty that a value is false)—pose challenges for direct optimization because of their built-in uncertainty. To address this, the coefficients consisting of neutrosophic fuzzy numbers are systematically converted into precise (crisp) values using a ranking technique that assigns a single representative value to each fuzzy number. The "NFLP" model can be revised as a typical linear programming problem, which is simpler to answer using computer algorithms, due to this ranking mechanism. These adjusted constraints are subjected to linear system analysis—a method for examining the solutions and interactions among variables in sets of linear equations—using Python (3.13.5) computational tools, which results in a more precise identification of the ideal choice variables. The re-search being conducted employs eigenvalue (a number that represents the scale change in a transformation) and eigenvector (a non-zero vector whose direction remains constant under the transformation) analyses to further examine the mathematical characteristics of coefficient matrices (groups of numbers that define the constraints) generated by neutrosophic data. The structure, stability, and change sensitivity of the model are all shown by this evaluation. This method enhances computational tractability (making models easier to solve with computers), interpretability (making model findings easier to be understood), and practical application for decision-making situations involving ambiguous or inconsistent data. The suggested approach's performance in practical optimization issues can be illustrated by numerical results.

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Enhanced Agriculture: Hybrid IoT and Blockchain System for Sustainable Smart Farming

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ABSTRACT

Paradigms for decentralized, trustless data exchange and autonomous device collaboration are created by merging Blockchain (BC) and the Internet of Things (IoT). However, limited resources and energy constraints are the factors for major challenges in achieving sustained participation of IoT devices in such decentralized networks. In this paper, we study incentive archetypes with IoT node participation in blockchain ecosystems. Agriculture is the backbone of many countries. Utilizing technology effectively in agriculture enhances the yield of crops and increases profits. Therefore, in this paper, we integrate IoT with BC in agriculture to create a secure and efficient data-driven smart farming ecosystem. We emphasize the scalability, energy efficiency, and security implications of token-based rewards, reputation systems, and hybrid incentive structures for smart farming. Additionally, we propose an incentive framework integrated with an economic model for addressing challenges related to sybil resistance and incentive manipulation, known as the Hybrid Sustainable Incentive Framework for Smart Farming (HSIF_SF). Efficient and sustainable participation of IoT is assured with energy-based reward distribution, lightweight consensus, and adaptive tokenomics to analyze these challenges. As a result, this precision-oriented recommendation system increases 15% of the crop yield, simultaneously reducing the input cost. Moreover, this archetype empowers rural communities using technology by assisting in boosting income and accessing the market directly. The primary focus of this paper is to provide an IoT incentive design for smart agriculture in the decentralized blockchain network.

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AI-Driven and IoT-Enabled Systems for Waste Moni-toring and Management

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ABSTRACT

Urbanization and high population have greatly contributed to the quantity of solid waste thus making the traditional systems of waste management ineffective, expensive and unsustainably unfriendly to the environment. The traditional methods are mainly based on the set regimes and manual surveillance leading to in-efficient collection, unsatisfactory resource use and high environmental effects. In order to overcome these obstacles, the following paper is going to suggest an AI-powered and IoT-authored smart waste tracking and management system that could allow gathering information actively, making smart decisions, and streamlining the work with waste. The suggested system incorporates IoT sensors to monitor the level of wastes, environmental environment, location, and condition of bins and machine learning algorithms to predict, classify, and optimize a collection route. Giving timely decisions, minimizing operational expenses, and enhancing collection efficiency utilizing minimal carbon emissions are some of the benefits of the AI-based analytics. Experimental testing proves that the suggested system has had a drastic effect on better monitoring of wastes, less trips to the collection facility, and all-around system-awareness in comparison to the traditional

models. It is noted in the findings that AI and the IoT technology have the potential to develop scalable, efficient, and sustainable waste management systems in smart cities and urban ecosystems.

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An Adaptive and Efficient Model to Detect Anomaly and Attacks in Cloud Environment using Fuzzy Technique

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ABSTRACT

Intrusion Detection Systems (IDS) are crucial for identifying suspicious activities or policy violations in network or system operations, thereby reporting potential security threats that could lead to unauthorized access or attacks. The Fuzzy Min-Max Neural Network (FMM-NN) is an advanced model for binary classification in IDS, integrating fuzzy logic and neural networks to manage data uncertainties and imprecision. FMM-NN creates hyperbox fuzzy sets in a multivariable feature space, enabling learning from new samples without retraining. The network uses min-max normalization to define hyperbox boundaries, effectively classifying data points through membership functions. Its ability to handle overlapping classes and incorporate prior knowledge in decision-making makes it suitable for large datasets. Unlike traditional neural networks, which operate like black boxes, FMM-NN is rule-based and easily interpretable. Comparative analysis shows that FMM-NN achieves a 96% detection rate, significantly higher than other state-of-the-art techniques, confirming its effectiveness in binary classification problems where accuracy, detection rate, and interpretability are critical.

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AI-Driven Low-Level Forensic Analysis for Detecting Database Evidence Manipulation in Green and Sustainable Information Systems

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ABSTRACT

Data forensics are also another critical factor in any online investigation since any unethical interventions with the data can eradicate the reliability and admissibility of information. This is a major hurdle in the relational database systems where elaborate manipulation methods accompany the rearrangement or masking of important records without leaving any footprints. To reveal this problem, this paper examines how to detect the digital evidence tampering on the database level, with

the focus placed on how the low-level programming methods help to increase the forensic reliability. The paper analyses typical types of threats to databases, including SQL injection, privilege escalation, log corruption, and rootkit interference and its direct effect on evidence integrity and integrity. Although the classic approach to forensics, such as hash verification, analysis of metadata and audit trail, can be used to detect some types of anomalies, they are ineffective in revealing underlying deep-level manipulations, which are lower than the application or file-system layer. To find a solution to these constraints, this work suggests the combination of assembly-level analysis, disassembly, and reverse engineering as a solution in terms of better owing tamper detection. This is a low-level forensic methodology that lies between digital forensics and system-level programming, which is much more accurate, reliable and verifiable in its evidence analysis. Finally, it renders in search of forensic sound and integrity of data on high stakes investigative and legal activities.

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Application of Unified Theory of Acceptance and Use of Technology (UTAUT) model in understanding the adoption of Application Supported Blocked Amount (ASBA) technology in food delivery mobile applications by Gen Z in South India

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ABSTRACT

The increasing integration of digital payment technologies within mobile applications has reshaped consumer behaviour in India's rapidly evolving fintech eco-system. Application Supported Blocked Amount (ASBA), initially designed for secure IPO transactions, is emerging as a potential mechanism to enhance transparency, reduce refund delays, and strengthen payment trust in consumer plat-forms such as food delivery applications. This study examines the adoption of ASBA-enabled payment systems among Generation Z users in South India using the Unified Theory of Acceptance and Use of Technology (UTAUT) framework. A quantitative approach was employed, collecting data from 198 respondents, and the structural relationships were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM).

Findings reveal that effort expectancy and social influence significantly and positively affect behavioural intention, while facilitating conditions and behavioural intention have a strong influence on actual usage behaviour. Interestingly, performance expectancy shows a significant but negative relationship with behavioural intention, indicating concerns regarding perceived utility or trust in ASBA-based mechanisms. The moderating effects of gender and experience are partially significant, whereas voluntariness shows no significant influence.

In addition to contextual novelty, the study also adds to technology adoption theory by revealing a negative counterintuitive performance expectancy to behavioural intention relationship in fintech payment systems in the form of escrow. Such finding implies that the perceived usefulness in high-security financial set-tings might cause risk sensitivity as compared to adoption confidence, which in turn expands the conditions of the UTAUT framework.

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Corona Covering Number Analysis for Boundary Edge Comb Product of Canonical Graphs

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ABSTRACT

Recently authors initiated the concept of corona covering number of graphs. A vertex cover set $S \subseteq V(G)$ is a corona cover set if every vertex $v \in S$ such that $d\langle S\rangle(v) = 1$ or there exist a vertex $u \in S$ with $d\langle S\rangle(u) = 1$ and $uv \in E$. The least cardinality of a corona cover set is the corona covering number of a graph and it is expressed as τC. In this paper, we initiate study on boundary edge comb product & investigate corona covering number for boundary edge comb product of standard graph.

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Analysis of Series Parallel Hybrid Electric Vehicle using Energy Management System

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ABSTRACT

In recent years, hybrid electric vehicles (HEVs) have become increasingly popular, and their market share is expected to grow rapidly in the future. Their success hinges on their ability to offer a compromise solution compared to conventional internal combustion engine vehicles and battery electric vehicles. The research presented in this paper demonstrates the role of HEVs in vehicle design by considering energy consumption, performance, and the effectiveness of a specific powertrain configuration compared to conventional internal combustion engines and battery electric vehicles. Detailed models of the four main types of components—electric motor, internal combustion engine, battery, and auxiliary components—are presented, which can be used to model and simulate drivetrains of all-electric, series hybrid, and parallel hybrid configurations. The simulation is performed in the simulation in MATLAB/Simulink and is usable on most computer platforms. This paper also discusses a methodology for vehicle drivetrain design. A series-parallel HEV, and a conventional internal combustion engine (ICE) driven drivetrain are discussed.

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Employment, Employability barriers faced by Third Gender

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ABSTRACT

Transgenders are a minority in a society and are there in every society all over the world. Several journals have published articles related to their discrimination, equity and upliftment in the society. The government of India has come forward and gave them a status as third gender and have provided schemes for education, reservation in jobs in the government sector categorising them as other backward communities. Garema greh schemes are available to provide amenities and shelter. This study has focussed on the employment of the third gender in the private sector and the barriers faced by them which involves transphobia and heteronormal attitude of the society. Education empowers a gender and increases their subject knowledge as well as their general awareness of the environment. The third gender approached in this study are educated and had employment and also face the issue of sustainability in the job. Transphobia is an area that works against transgenders in employment. Male and female genders are found to have transphobia, and it varies from one person to another. Transgender entrepreneurs encounter barriers mainly to bringing capital to the business and access to innovative thinking. Employment in the private sector is still a distant dream for them a few corporate companies that have made provisions for it. The remote working aspect looks favourable for them.

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Barriers and Utilization of e-Sanjeevani Telemedicine Services in Jaipur District, Rajasthan Smart Farming

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ABSTRACT

Background: India has come a long way toward providing health care for everyone, but a large chunk in rural areas still have trouble finding skilled physicians; have to travel long distances and have to pay a huge sum of money out of their own pockets. The National Rural Health Mission (NRHM), which started in 2005, aimed to make sure that those who do not have access to healthcare can now get high-quality, inexpensive treatment[1]. The government started Ayushman Bharat in 2018. Its Health and Wellness Centers (HWCs) provide full primary care and use digital tools including teleconsultation, free tests, and computerized record-keeping[2]. Telemedicine, which is roughly defined as the use of information and communication technology to provide healthcare services at a distance, has become a key part of this plan[3]. The Ministry of Health and Family Welfare (MoHFW) started the national telemedicine platform, e-Sanjeevani, during the COVID-19 epidemic. The AB-

HWC variant connects community health workers in rural HWCs with specialists in tertiary hospitals. The OPD variant lets people get video consultations from home. By September 2021, the platform had given more than 12 million consultations and was handling roughly 90,000 consultations every day[4], [5]. Even while things are growing quickly, we still do not know much about its usage by the people, how providers feel about them, or the problems faced by the patients.

Objective: This study investigates the use of e-Sanjeevani in Jaipur District, Rajasthan using a Consolidated Framework for Implementation Research (CFIR) and explains the operational, technical, and social obstacles encountered by healthcare practitioners and patients. This showcases the importance of telemedicine services and portrays the larger picture of this platform in relation to telemedicine policy and research.

Methods: In 2023-24 we conducted a descriptive cross-sectional study. Fifteen health institutions including Sub Centers, Primary Health Centers and Community Health Centers in Jaipur District were selected using stratified random sampling, and only those centers were included that had utilized e-Sanjeevani for at least a year. A structured questionnaire, which included demographics, usage of telemedicine, training received, barriers faced, and suggestions for improvement, was used to get the views of various stakeholders in the study (Community Health Officers (CHOs), Medical Officers (MOs), and Specialists). Secondary data on were sourced from the e-Sanjeevani portal and governmental documents. Quantitative data were descriptively summarized, and qualitative responses were evaluated thematically. Approval of this study was given by the institutional ethics committee.

Results: Out of all the people who answered, 60% of them were CHOs. The remaining 40% were MOs or specialists. Most of the providers were between the ages of 25 and 35 and stated they used telemedicine sometimes. More than half had never used the platform before. Few providers had received official training on the e-Sanjeevani program. The others learned via videos online or from each other. Providers said there were a number of problems, including operational problems, like when patients come in and specialists were not available, subpar telemedicine equipment, and inconsistent medicine supply; technical problems such as slow internet connections, poor audio/video quality, and trouble logging into the platform; and social problems like patients being digitally inexperienced, preferring face-to-face consultations, not having enough private space, and not trusting remote care. Only forty percent of people responded that medications were always available at their facility after the consultation. Providers thought that specialized consultations, tele-psychiatry, and remote monitoring of chronic conditions were all useful services. Most of the providers used their own smartphones or PCs for teleconsultations.

Conclusions: E-Sanjeevani, an innovation bridging rural-urban healthcare, is rarely used in Jaipur District. Poor infrastructure, digital literacy, training, and socio-cultural hurdles make it difficult to use, the report says. Improving digital infrastructure, training providers, having medicine available, and incorporating communities to create trust can expand telemedicine. Telemedicine problems have been reported worldwide. They offer politicians, program designers, and health administrators customized solutions.

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Design of a Hybrid Renewable Generation Grid for a Medium-Sized Educational Campus

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ABSTRACT

Distributed energy resources are transforming conventional distribution networks into generation grids in which local generation, storage, and controllable loads interact dynamically with the upstream utility. Educational campuses are particularly attractive environments for this transition because they combine relatively high and diverse electricity demand, large roof surfaces suitable for photovoltaic installations, and the presence of engineering expertise capable of operating and studying advanced energy systems. This paper presents the conceptual design of a hybrid renewable generation grid for a medium-sized educational campus located in a hot and sunny coastal region. The proposed system integrates rooftop solar photovoltaic (PV) arrays, small wind turbines, a diesel generator, and a hybrid energy storage system that combines a battery bank with a supercapacitor bank. The elements are connected through a coordinated AC/DC architecture and con-trolled by a multi-layer energy management system. The design seeks to supply roughly 30–40% of daytime demand from on-site renewable sources, reduce grid-import peaks by approximately 15–20% through coordinated use of storage, provide limited islanded operation for critical loads during grid outages, and function as a living laboratory for teaching and research in smart grids and microgrids. The paper discusses the load and resource characteristics of the campus, describes the proposed architecture and sizing of key components, explains the control and energy management strategy in detail, and identifies performance indicators to be used in simulation and in later field trials. The expected benefits include lower energy costs, reduced greenhouse-gas emissions, improved power quality, extended battery lifetime thanks to supercapacitor assisted peak shaving, and a replicable reference model that can guide similar campuses and institutional clusters.

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From Work Ambiguity to Disengagement: The Importance of Eco-Conscious HR Strategies in Building Sustainable Employee Commitment

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ABSTRACT

The rapid expansion of hybrid and digitally mediated work arrangements has intensified work ambiguity, particularly regarding role expectations, task boundaries, and performance criteria. This

ambiguity has emerged as a critical antecedent of employee disengagement and quiet quitting. This article explores how work ambiguity is related to employee disengagement and how eco-sensitive human resources (HR) practices, particularly Green Human Resource Management (GHRM) practices, can develop sustainable employee commitment. The study explores the relationships between work ambiguity, employee disengagement, perceived GHRM practices, and sustainable commitment using data on cross-sectional pilot survey of 50 full-time workers. It has been found that work ambiguity is positively linked to dis-engagement and negatively linked to sustainable commitment and the reverse is true in perceived GHRM practices. Findings of the regression also prove that eco-sensitive HR practices diminish disengagement and increase sustainable commitment despite trying to eliminate obscurity of work. Through an empirically based connection of role clarity and sustainability-based HRM, the present study makes a contribution to the existing literature of Green HRM and provides informative insights that a company should consider in order to resolve the issue of engagement and achieve a higher level of sustainability.

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Evaluating the User Experience of Voice Assistant for Smart Home Applications Using Expectation - Confirmation Theory

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ABSTRACT

The study investigates user experience by using a voice assistant for smart homes using the expectation–confirmation theory. Responses to the research were gathered through the use of a structured questionnaire. The instrument targeted homeowners who have voice assistants for smart home purposes. For this study, the sample size was 208. These participants responded to items that reflect their perceived experiences related to information quality, interaction quality, compatibility, trust, satisfaction, and continuity of usage. These attributes are representative of the constructs in expectancy-confirmation theory. Through regression analysis of the findings, the research pointed out that compatibility predicts satisfaction, while satisfaction predicts continuity of usage. This research is important in that it assesses voice assistants as installed in smart homes and also yields information that is useful for the future development of interaction devices.

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Integrating Sustainable Development Goals into Peacekeeping: UN Mission in South Sudan (UNMISS)

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ABSTRACT

Peacekeeping is traditionally viewed as being dissimilar to sustainable development. But most of the new wars are a result of bad governance, resource scarcity, and absence of sustainable development and therefore, there is a need to redefine the boundaries of peacekeeping. In this context, UN peacekeeping can no longer remain only security focused; rather it has to ensure sustainable development by the host nation which is the sole way to establish lasting peace.

Based on informal and semi formal interviews with subject matter experts, as also secondary data from various documents, this paper highlights initiatives undertaken by UNMISS to ensure environmental sustainability, local employment and other such objectives. Such initiatives contribute to improved legitimacy and improve community trust amongst the local population.

However, there are immense challenges due to lack of inherent capabilities and resource constraints within UNMISS also the absence of strong institutions and capacity in the host country. Notwithstanding the same, suitable frameworks need to be developed since the integration of sustainable development with the tenets of peacekeeping, is critical for lasting peace.

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Exploring Greenwashing in India's E-Retailing Sector: Strategies, Impacts and Remediation

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ABSTRACT

. Greenwashing, a marketing ploy that overstresses the environmental benefits of products, has been more widely used lately due to the growing popularity of e-retailing. This situation is particularly challenging in India, which has become a rapidly expanding e-commerce market. This paper seeks to investigate green-washing in the Indian e-retailing industry and its effect on consumer behavior and trust. The strategies used by e-retailers to greenwash-products are identified through a literature study. Recommendations are made for consumers, regulators, and the industry to combat greenwashing. The paper concludes with some future research perspectives that will influence greater transparency and sustainability in the Indian e-commerce sector.

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Literature Review: Training and Development in India's General Insurance Sector – Supporting Employee Well-being and Building Sustainability Skills

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ABSTRACT

India's general insurance industry has reshaped over the last 10-15 years in re-sponse to new regulations, technological advancements and increasing customer demands. Training and development, in particular, have changed from mandatory standard practices to purposeful strategies. These initiatives build capabilities and increase the morale of employees within the organization preparing them to face future challenges.

Traditional programs used to enhance technical knowledge and compliance awareness for building employee confidence, leading to better performance. But the evolving industry landscape has impacted the way in which training programs are structured and delivered. The focus has broadened with topics like work-life balance, mental health, ethics and ESG awareness.

Organizations provide continuous learning opportunities in various areas impact-ing customer service, digital literacy, adaptability, accountability and critical think-ing. This results in higher job satisfaction and also helps employees think ahead and take responsible decisions.

We reviewed existing research and industry reports to study the current training and development practices adopted by various general insurance companies. They are increasingly adopting new learning trends like hybrid learning and AI-powered platforms. Concentrated efforts are made in developing leadership and sustainability skills.

We have identified few challenges in effectively implementing training and devel-opment plans and provided suggestions based on the insights gathered from our review of existing literature and emerging approaches.

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Multimodal Sentiment Analysis: A Comprehensive Analysis of Diverse Modalities and Datasets

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ABSTRACT

Multimodal Sentiment Analysis (MSA) has emerged as the important domain in the field of Artificial Intelligence (AI) which effectively depict the human emotions by merging data from multiple modalities like text, audio, and videos. Traditional Sentiment Analysis (TSA) primarily focused on unimodal data by shrinking its ability to analyze the precise emotional expressions. By utilizing the advancements in Machine Learning (ML) and Deep Learning (DL) algorithms the fusion of multimodal plays a pivotal role in using the important features of various modalities to improvise the performance of the TSA. This article presents extensive survey of various fusion such as early, late and hybrid fusion with attention mechanism - based approaches. Additionally, this paper points up the key challenges such as biases in the existing datasets, difficulties in preparation of data, intermodal imbalance, outliers' removal, missing modalities and choosing fusion methods. By an in-depth study of the issues, this paper presents the future directions for strengthening the fusion methodologies.

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Narrating Responsibility: Archetypal Branding and Cultural Meaning in India's Jaago Re Cause Marking Campaign

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ABSTRACT

This paper analyzes the role of archetypal storytelling as an ethical brand meaning construction strategic tool in cause-related advertising as applied longitudinally to the Jaago Re campaign created by Tata Tea. Jaago Re is a cause marketing effort spanning more than 10 years and dealing with civic engagement, gender equity, community health and climate accountability. Based on the theory of archetypal branding, the paper examines thirteen aired and online advertisements published between 2008 and 2023 to learn how archetypes are utilized and redefined based on the changing socio-cultural and ethical issues. Based on the principles of a qualitative content analysis, guided by the Archetypal Criticism framework and Cultural Branding theory, the research paper recognizes the primary and secondary archetypes and investigates their narrative and ideological roles. The results have shown that archetypes that include the Hero, Sage, Caregiver, Everyman, and Outlaw, together with the Magician are well-planned layers that deploy civic actions, promote ethical contemplation, and maintain symbolic continuity in the campaign stages. The work proves that Jaago Re goes beyond episodic cause promotion, including the responsibility and social awareness as a part of the cultural identity of the brand. This study can be of use in the literature on ethical branding and responsible advertising because it links the progression of archetypal arrangements through time, providing a conceptual framework to build a sustained social and cultural value in the marketing communications.

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From Policy to Practice: Advancing Social Equity and Environmental Responsibility in Indian Healthcare Settings

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ABSTRACT

Reducing emissions, eliminating waste, and addressing social inequities are necessary steps for the improvement of the system. A sustainable healthcare system is one that uses modern tools and techniques to provide high-quality healthcare to the entire population in the present as well as in the future. The notion of sustainability in healthcare is based on the need to implement social equity, accessibility, and environmental responsibility. Accordingly, this study is dedicated to the understanding of the importance of integrated sustainability in healthcare institutions as a means of promoting social equity, better accessibility, and enhanced environmental responsibility. The random selection brought to the fore twenty experienced healthcare professionals from five major healthcare institutions in the Jaipur district of Rajasthan. Identified health professionals, feeling the pulse of the discussion, actively participated in the focussed group discussions to share qualitative insights. Each discussion was thoroughly examined with the help of a qualitative data analysis tool (ATLAS.ti, version 22), and then, a thematic approach was applied. The results pointed to the fact that the integration of sustainability as a single framework with all three aspects: accessibility, equity, and environmental responsibility, could lead to the healthcare practice becoming more robust. In addition, the results suggested that we should not limit ourselves to going beyond socioeconomic classes alone. Thus, the study treats healthcare as the most basic human right rather than a privilege. Hence, it certainly should not be the case that only a few rich people are the ones who have access to it. Although the analysis brings to the fore numerous problems that are related to the healthcare system, it also has significant implications for the future. Widespread public awareness is a point stressed in the present study as a prerequisite to adopting and implementing new technologies, policy changes, and the provision of quality healthcare services.

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Eco Printing from Floral Waste: A Circular Economy Approach for sustainable Textile practices in India

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ABSTRACT

India, a global leader in floriculture, produces more than 800 million tons of flower waste every year. Unfortunately, much of this waste is either dumped in landfills or washed into rivers, which harms public health, pollutes water, and adds to greenhouse gas emissions. At the same time, the textile industry continues to be a major source of pollution, largely because it depends on synthetic dyes that contain harmful heavy metals and contaminate water bodies.

This study brings these two concerns together by exploring a simple but meaningful solution: turning discarded flowers into a resource. It explores how discarded flowers can be given a new purpose through eco-printing — a gentle, eco-friendly method that uses the natural colours of flowers and leaves to imprint patterns directly onto fabric.

The research utilized a systematic methodology, collecting floral debris specifically marigolds, hibiscus, roses, and chrysanthemums from local sources in Pune. These pigments were applied to mordanted cotton and silk fabrics using both direct eco-printing and pigment extraction techniques. Quality analysis revealed that marigold and hibiscus yielded the most vibrant colors, and silk fabrics demonstrated superior color fastness and durability compared to cotton textiles. Crucially, the process was found to be cost-competitive with traditional synthetic dye printing, especially when floral waste is procured locally.

These results show that using flower waste to make textile dyes is a simple and smart step towards a circular economy, where materials are reused rather than thrown away. This approach lightens the burden on landfills and reduces our reliance on harsh, harmful synthetic chemicals.

It also offers meaningful social and economic benefits, like creating local job opportunities and providing consumers with safer, chemical-free fabrics. Overall, the study shows that eco-printing is not only beneficial for the environment but also a practical and financially viable option. It supports India's sustainability efforts and contributes to important global goals, including clean water, decent work, and responsible production.

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A Study on Sustainable Tourism and Economic Development in India

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ABSTRACT

Tourism is a major activity supporting the economy in several ways. Tourism sector is accountable for 9% of world GDP. In the past years there has been a substantial growth which is estimate to continue, exclusively in developing countries which have seen a rate of rise in tourist entrances that significantly overpass the global average. Tourism records for 29% of exports in services universal

and for many developing countries it provides a important, and sometimes the principal source of foreign exchange incomes. Academic studies have long-established the involvement of the sector to economic growth and many international forms, through conventions and official communications, the sector has been formally recognized as a key driver of sustainable development. In recent years, tourism has become a significant economic activity for almost all the countries. Well deliberate sustainable tourism programs provide chances for the visitor to experience natural areas and human societies, and learn about the reputation of local culture. Additionally, sustainable tourism activities can create income for both local communities and the government. Achieving sustainable tourism is a constant process and it requires continuous monitoring of impacts, introducing the necessary precautionary and corrective measures whenever necessary. Sustainable tourism should also maintain a high level of tourist satisfaction and ensure a meaningful experience to the tourists, raising their awareness about sustainability problems and promoting sustainable tourism practices amongst them. An attempt has been made to understand various concepts of sustainable tourism and the system followed all over the world. The economic characteristics of sustainable tourism were also studied by incorporating the number of tourists arrival to India, foreign exchange earnings and employment. Also discussed the connection between the economic growth and earning from tourism and employment. The study found that there is a positive relationship between density of population and the pollution.

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Entrepreneurial Motivation, Stress and Coping Mechanisms among Women Entrepreneurs

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ABSTRACT

The research looks at this creative Workplace norms and procedures that different Indian enterprises have put in place. Employees now need to manage their individual and occupational life due from the rise in nuclear families, two-earner households, and the quantity of female in this workforce Businesses are providing a range of work-life programs in an effort to improve the quality of life and retain their brilliant workforce. The goal of This document is to illustrate this current state of balancing work and life programs also advantages provided by a number of reputable Indian companies, as well as their prospects and upcoming obstacles. The study is predicated on secondary data, empirical research, and a thorough literature assessment. It was discovered that a lot of businesses have begun to take the initiative to resolve work-life problems. Flexible scheduling,

parental leave, child care support, counseling, and other practices have enhanced, and an employee's performance and attitude toward their company are improved by these assistance. The work-life balance literature will benefit from this paper's comprehensive approach, which will also address the implications for further investigation.

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Sustainable Banking Practices: Driving the Green Economy

Sub-topic: Green Finance and Sustainable Investment

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ABSTRACT

Today the world wide green economy is evaluated with the survival systems and its emerging crucial importance in the economic structure and nation’s development. The structure of the substantial investment is integrated with Environmental, Social and Governance (ESG) regulations through the financial institutions with banking prototype. This study reveals the sustainable banking regulations with environmental dialogue and economic stability. It analyses the green finance on the sustainable footsteps and find the challenges to implement and adopt the best practices in the banking sector in and around the global environment. In this research article the valuable insights of financial stability with green initiatives impact and to find the sustainable practices in future.

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Influence of Institutional Leadership in Nurturing a Sustainability-Oriented Culture in Universities of Rajasthan

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ABSTRACT

Universities show a vital part in ensuring sustainable development through proper education systems, extensive research and development with maximum involvement of the community. The institutional leadership is the determining factor to a great extent to which sustainability is embedded within the university structures. This study researches on how leadership commitment, communication and policy integration influence the sustainability development- oriented culture in higher level institutions of Jaipur district in Rajasthan. A quantitative and survey-based research design was

selected and data were placid from 300 respondents across five universities of Jaipur encompassing two public universities, two private universities and one autonomous university. The statistical analysis opted for getting the results which revealed strong positive correlations between leadership commitment and sustainability culture ($r = 0.73$, $p < 0.01$) and between communication and awareness ($r = 0.71$, $p < 0.01$). The results significantly show that transformational and participatory leadership models enhance sustainability awareness and institutional practices. So, the study concludes that effective and visionary leadership, strong and effective communication and inclusive governance are the main drivers for integrating sustainability with university systems.

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Green Marketing and Ethical Branding combined with Responsible Advertising: Based on Contemporary Practices, Challenges and Global Case Studies

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ABSTRACT

Marketing methods are changing since climate change, digital transparency and stakeholder scrutiny are reshaping the marketing field. Responsible advertising, ethical branding and green marketing are the most effective methods for organizations to communicate and meet their environment, social and corporate governance (ESG) obligations. Between 2020 and 2025, this chapter analyses theory and global industry practice. It focuses on the most recent corporate practices, legislation and worldwide examples. It looks at the ways that the meanings of sustainability and ethics have transformed from simple, symbolic meanings to strategically fundamental meanings. The meanings are focused on, consumer trust, brand equity and the authenticity of the brand. The author analyses the implications of such marketing phenomena as greenwashing, ethical inadequacy of digital advertising, sustainability claims and the inadequate measurement of sustainability. The chapter develops the case for responsible marketing using both global and emerging market examples and provides scholarly practitioners and policymakers clear usable contributions as they work in markets that are increasingly transparent and demand accountability.

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Digital Public Infrastructures' Impact on India's Economic Growth

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ABSTRACT

. Digital Public Infrastructures are one of the most recent and major tools in the economy that help in various spheres. The current work focuses on examining how these infrastructures are influencing the economy of India based on secondary data of 2010-2025. The results show that there is a high correlation between DPI adoption and gain in GDP contribution, volume of transactions and efficiency in the delivery of services to the populace. By 2025, the UPI transaction values had surpassed 205 trillion, users of the DigiLocker had topped 250 million and Aadhaar enrollment had topped 1.36 billion. Taken separately, these systems further improved fiscal efficiency, decreased leakage by 25-30, and improved inclusive growth. The paper concludes that DPI is a pillar of macroeconomic modernization of India, which enhances scalable, inclusive, and sustainable developments

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AI-Enabled Price-Sensitive Digital Payment Recommendations for India's Bottom-40% Income Groups

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ABSTRACT

In today's 21st century we have witnessed that Digital Payments have changed the scenario of financial environment, market forces, habits of making payments via different modes such as smartphones, debit or credit cards, online net banking etc. AI has brought a drastic change in various functions of Digital Payments yet, but the bottom 40% income group of people still confront various challenges such as hidden transaction charges, lack of awareness of cheaper payment options, limited awareness of cost-saving options, difficulty in navigating complex payment ecosystems and limited digital literacy.

These issues disproportionately impact India's bottom 40% income group, for whom even small transaction fees reduce disposable income and financial stability.

Although the transactions done by the digital payments have crossed the level of billions in volume annually. In-spite of this price sensitivity remains a fundamental obstacle to sustainable financial inclusion. In this study we tried to investigate that how AI-enabled price-sensitive digital payment recommendation systems can promote the use of most economical payment option (UPI, wallet, cards, BNPL) for low-income consumers based on real-time charges, cashback benefits, user preferences, developing transparent fee-disclosure systems supported by regulators and FinTech firms so that they can save their money and thus increases the percentage of Financial Inclusion which is also a goal of sustainable development (SDG).

In this investigation, we conducted a primary survey on 120 respondents representing low-income sectors in India to evaluate price sensitivity, perceptions of AI-based support systems, trust in digital tools, and intention to adopt cost-optimizing features.

We investigated their views, willingness to implement AI payment ideas, and the perceived role of AI in lowering financial strain. Descriptive statistics and Pearson correlation analysis were used to examine relationships between income level, price sensitivity, AI trust, and intention to employ AI technologies. Through the findings we got to know that there is a high positive correlation between price sensitivity and readiness to accept AI-based recommendations which indicates that financial inclusion can be greatly raised by AI tools created especially to lowering the cost of payment. Moreover, respondents also expressed their high interest in using AI tools which simplify transaction choices, reduce financial burden, and provide transparent information on fees.

From the view point of policy recommendations, Government-sponsored AI literacy programs, multilingual AI interfaces, transparent cashback comparison tools, integration of AI-based cost calculators into UPI apps and developing transparent fee-disclosure systems supported by regulators and FinTech firms can bring a drastic change in bringing the lower income groups towards the path of 'Financial Inclusion'. We tried to contribute a novel perspective about an underexplored area in Indian digital payment research by linking AI-based decision support system and AI-driven cost optimisation with financial inclusion which can raise the level sustainable financial inclusion. This research highlights the potential of AI as a scalable, socio-economically sustainable intervention for enhancing digital payment equity in emerging economies.

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Beyond Quick Commerce: Kirana Partnerships, Developments, and Regional Participation in Greener India's E-Grocery Ecosystem

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ABSTRACT

The advent of digital marketing has largely transformed how customers find, evaluate, and buy groceries. This research addresses the impact of consumers' targeted advertising, marketing through social media, email communications, and social marketing on urban India's online grocery shopping behaviour. A mixed research method was adopted; primary data was collected through an online structured survey with 420 respondents and 15 online grocery shoppers were selected for semi-structured interviews. The impact of marketing activities on the frequency of purchase, brand trust, convenience perception, and purchase with a pro-environmental motive was assessed using descriptive statistics, factor analysis, and multiple regression analysis. Sustainability digital marketing and its behaviour were correlated. The Presence of Sustainability initiatives within descriptive marketing was appreciated most by consumers. The targeted promotions coupled with social marketing trust explained the purchase frequency and customer loyalty, and the pro-environmental intent strengthened through sustainability messaging, yet convenience and low price were the only barriers to actual purchases. It explained the role of trust in perceived convenience as a moderating variable on digital marketing and the intent to purchase sustainably. It is recommended that personalization be created with clearly articulated simplified sustainability communication, communication of environmentally friendly delivery alternatives, and clearly defined ESG

commitment to trigger green buying intentions. This study integrates the efficacy of sustainable consumer behaviour in emerging India's online grocery market, providing marketers and policymakers with a practical reference that contributes to the advancement of the current body of scholarship.

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Sustainable Business Strategies: An Empirical Analysis of Telecom Sector in India with Special Reference to Reliance Jio

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ABSTRACT

The telecommunication industry in India has experienced tremendous growth over the last ten years to become the engine of the digital transformation and eco-nomic growth of the country. The industry has experienced challenges of high cost of operating in the industry, uncertainty in regulation, tariff wars, and shift-ing tastes of consumers despite substantial expansion. All these, alongside the economic slowdown in the world and the effects of the pandemic in recent times, have occasionally limited profitability and increased revenue in the sector. This paper focuses on the correlation between the key performance variables, includ-ing Subscribers, Average Revenue Per User (ARPU), and Tariff rates, and how these three variables have an overall effect on telecom revenue in India. Employ-ing econometric analysis, the study investigates the role of change in these pa-rameters in driving the overall revenue, and it aims at identifying the most influ-ential factors to determine financial performance. The results propose a high posi-tive correlation between subscriber growth and ARPU and the revenue, and the higher tariffs have a slightly negative influence, which shows that the Indian market is price sensitive. The research finds that value-based service innovation, product diversification via digital, and rational tariff are the strategies that will help to ensure sustained growth in revenues. The research can be used in future research on telecom policy formulation and strategic decision making to achieve sustainable growth in the telecommunications industry in India.

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The Dual Strategy for Zero UI Marketing: Does Voice Utility and Gesture Interaction Drive Customer Experience?

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ABSTRACT

Screenless technologies are the beginning of a new era where all technologies coincide with marketing. This seamless integration of screenless technology and marketing has given rise to Zero UI Marketing, which is refining the way marketers interact with consumers. This has also eliminated the need to touch screens by using voice-based interactions and gesture-based communication. Amazon Alexa and Apple Siri are some of the examples that have understood Zero UI Marketing. This paper explores how Zero UI technology can be a paradigm beneficial in marketing, and whether it enhances the customer experience and brand loyalty. This paper investigates how voice interaction (VI) and gesture-based (GB) interfaces impact customer experience (CX), specifically mediating it with immersion (IE).

This research validates a structural model using Partial Least Squares Structural Equation Modeling (PLS - SEM). The analysis of the structural model uncovered two distinct pathways, providing mixed support for the hypothesis. This paper establishes a crucial framework for Zero UI marketing strategy, prioritizing utility and accuracy for voice interaction and empirical quality and seamless flow for gesture interfaces

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Global Transformational Challenges and Prospects for Fisheries in the Digital Era

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ABSTRACT

The fisheries and aquaculture sector occupies an increasingly strategic position in the global food system, serving as a critical source of high-quality animal protein, essential micronutrients, and bioavailable amino acids. In the context of accelerating population growth, resource scarcity, climate change, geopolitical instability, and structural disruptions of global supply chains, the role of fisheries extends far beyond traditional perceptions of food production. Today, fisheries and aquaculture are directly linked to issues of food security, economic resilience, employment, environmental sustainability, and technological modernization. While contemporary global discourse often prioritizes energy security and mineral resources, the biological foundations of human development particularly protein availability and nutrient density are no less significant. Fish and aquaculture products play a unique role in this regard due to their high feed conversion efficiency, comparatively low carbon footprint, and capacity to be produced within diverse ecological and technological systems. At the same time, the sector faces profound transformational challenges that require a fundamental rethinking of governance models, production technologies, accounting systems, and analytical tools. One of the most significant structural challenges facing global fisheries lies in the growing imbalance between production capacity, regulatory requirements, environmental constraints, and market expectations. The issue is no longer limited to increasing production volumes. Instead, the emphasis has shifted toward ensuring traceability, quality assurance, ecological compliance, and

transparency throughout the entire value chain. In this context, digital transformation emerges as a key enabling factor for enhancing the adaptive capacity and long-term competitiveness of fisheries and aquaculture.

A comparative perspective illustrates the scale and complexity of these challenges. In both India and Ukraine, fisheries and aquaculture constitute important segments of the agri-food sector, contributing to national income, export earnings, and regional development. India, in particular, has become one of the world's leading aquaculture producers, ranking second globally after China. A substantial share of its output is concentrated in shrimp farming, especially the species Penaeus vannamei, which has become the backbone of India's export-oriented aquaculture model.

Through the expansion of aquaculture operations in states such as Andhra Pradesh, Gujarat, Odisha, and West Bengal, India aims to strengthen its position in global seafood markets. According to FAO data, India accounts for approximately 4% of global fish and seafood export value, with total exports reaching around USD 15.1 billion in 2020. The European Union represents a key destination for Indian exports, particularly shrimp, squid, cuttlefish, and shellfish. For instance, in 2022 alone, exports of shellfish products to Spain generated revenues exceeding EUR 800 million, reflecting sustained demand and high market integration. Ukraine's fisheries sector, although significantly affected by military conflict and infrastructural losses, remains an important component of national food supply and rural employment. Under conditions of heightened uncertainty, restricted access to marine resources, and damaged production facilities, the need for efficient management, accurate data collection, and digital governance becomes particularly acute. In such circumstances, digitalization is not merely a development tool but a prerequisite for sectoral resilience and recovery. A central aspect of digital transformation in fisheries concerns the formation and aggregation of reliable production information. This includes data on stocking material, broodstock, feed consumption, production volumes, losses, and environmental impacts. Aquaculture, despite its relatively long production cycle, is increasingly recognized as one of the most promising sectors for ensuring food security due to its controllability, scalability, and potential for technological integration. However, these advantages can only be realized if supported by robust accounting and analytical systems. In Ukraine, an important step in this direction was the introduction of the administrative reporting Form 1A-Fish, approved by the Ministry of Agrarian Policy. Unlike previous statistical reporting mechanisms, this form applies to all legal entities and individual entrepreneurs engaged in aquaculture production. Its implementation marked a transition from fragmented statistical observation toward a more comprehensive administrative data framework. Subsequent research revealed that effective completion of this reporting form requires standardized primary documentation at all stages of the production process. In response, a system of specialized primary accounting forms was developed to document key technological operations, including caviar incubation, larvae rearing, broodstock formation, feed and fertilizer usage, stocking and harvesting of ponds, cages, and basins, as well as the recording of production losses. These forms were designed in accordance with national accounting standards, including Standard "Biological Assets", and sector-specific legislation regulating fisheries and aquaculture activities. Beyond governance and accounting, digital transformation increasingly affects production technologies themselves. One of the persistent challenges in aquaculture is the economic damage caused by piscivorous birds. In many regions, bird predation can result in losses of up to 30% of production, including direct fish mortality, stress-induced growth reduction, feed inefficiency, disease transmission, and physical damage to cages and enclosures. Recent innovations in artificial intelligence offer promising solutions to this problem. In Israel, AI-based systems have been developed that combine high-resolution detection

cameras, real-time data analytics, and adaptive water-spraying mechanisms to deter birds without harming ecosystems. These systems continuously analyze bird behavior, learn from past interactions, and adjust deterrence strategies accordingly. The result is an environmentally responsible, economically efficient, and scalable approach to loss reduction in aquaculture. Additional AI-driven technologies further illustrate the transformative potential of digital tools in fisheries. For example, AquaDetector, developed in Germany, employs artificial intelligence, image recognition, and cloud computing to automatically sort fish based on size, health status, deformities, sex, and disease indicators. This technology enhances inventory management, reduces labor costs, and supports data-driven decision-making. Similarly, OnDeck Fisheries in Canada utilizes AI-based monitoring systems to automate catch identification in commercial fisheries, ensuring compliance with regulatory requirements and improving resource management. Artificial intelligence, when integrated with digital accounting, monitoring, and governance platforms, enables a transition from reactive regulation to proactive management. Such systems support sustainability, and competitiveness in an increasingly complex global environment.

In conclusion, global fisheries and aquaculture are undergoing a profound transformation shaped by technological innovation, regulatory evolution, and changing market expectations. Competitiveness in this sector is no longer determined solely by production volumes or cost advantages. Instead, it increasingly depends on the ability to generate reliable data, ensure traceability, adopt digital tools, and integrate artificial intelligence into both governance and production processes. Digital transformation thus represents not only a response to current challenges but also a strategic pathway for ensuring the long-term sustainability and resilience of fisheries in the global food system.

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Critical Analysis of Workforce Competencies Development for Green Jobs and Role of Green HRM Practices

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ABSTRACT

Current organizations around the global platform have enhanced their concern towards realizing the importance of environmental sustainability to gain long-term success. However, most of the Indian organizations are still struggling with adhering green practices due to improper HR practices and using traditional production techniques which are damaging the environment. To address this issue, it is essential to adhere green human resource management (GHRM) practices. Effective GHRM practices helps in developing skilled and environmentally conscious workforce which further supports in driving innovation, and leading more sustainable future success and enables businesses to enhance green jobs market. Hence, this research paper is focused towards investigating the impact of GHRM practices on green performance used by large Indian organizations and also recommend the strategies to improve the adherence of green practices in India. To collect the data, survey questionnaire method and convenience sampling technique is used. For this purpose, survey is conducted with 200 employees who are working in the well-known Indian organizations that are

practicing Green HRM. The findings of this study will help to critically analyze the role of green jobs and role of green HRM practices in developing workforce competencies in the current highly competitive market. Hence, the findings can be further used by scholars and managers to develop understanding about the ways to develop workforce competencies in the current market where the demand of sustainable practices from the businesses is increasing.

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Factors Affecting Access to Finance for Small and Medium Enterprises in Lao PDR: Evidence from the World Bank Enterprise Survey

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ABSTRACT

This study takes a deep dive into what determines access to formal finance for Small and Medium Enterprises (SMEs) in the Lao People's Democratic Republic (Lao PDR). SMEs make up the vast majority of registered businesses and are the main source of jobs in Laos, yet they lag behind their regional counterparts in productivity, a problem made worse by a severe lack of funding. Using data on 208 businesses from the survey, this paper uses a logistic regression model to pinpoint the key factors that influence whether an SME can get a loan or line of credit.

The results show a complex picture, where the manager background, the firm's characteristics,

and its performance all play a role. We found that more experienced managers and higher company revenues significantly boost the chances of getting financing. Surprisingly, however, businesses run by women and those with more employees were less likely to secure formal credit. The study also found that businesses located in the capital, Vientiane, and those in the manufacturing sector have a clear edge. Perhaps most surprisingly, several factors that are usually considered crucial in lending like the age of the business, whether collateral was required for past loans, and having externally audited financial statements turned out to be statistically insignificant.

These findings suggest that in Laos's developing financial system, where institutions are still weak, informal signals and possible biases might matter more in lending decisions than formal risk-management tools. This paper adds to the limited research on SME finance in Lao PDR and offers targeted policy recommendations for the government, financial institutions, and SMEs themselves. The goal is to help close the critical financing gap and unlock the growth potential of this essential sector.

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Intercultural Communicative Competence as a Sustainability Skill in English Medium Instruction Classrooms in Indian Higher Education

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ABSTRACT

Sustainable higher education requires more than disciplinary expertise and language skills-it demands communicative capacities that foster inclusion, equity, and meaningful participation in diverse learning environments. Medium (EMI). English-Medium Instruction classrooms in Indian universities present unique opportunities to develop such sustainability-oriented competencies, as students navigate linguistic, cultural, and regional differences in their academic interactions. While existing research addresses EMI policy and intercultural awareness broadly, few studies examine intercultural communicative competence (ICC) as a core sustainability skill implant in academic communication.

This study investigates ICC as a framework for sustainable, equitable oral interaction in Indian EMI contexts, focusing on speaking and listening practices. Drawing on Byram's ICC model, we employ a qualitative-dominant exploratory design involving semi-structured interviews, focus groups, and classroom observations with undergraduate and postgraduate EMI students across selected Indian institution. Thematic analysis reveals how intercultural attitudes, knowledge, skills, and critical awareness shape oral engagement in multilingual environment

Preliminary findings indicate that ICC enables adaptive interaction, respectful dialogue, and collaborative participation—essential elements for inclusive academic communities and sustained learner engagement. By positioning ICC explicitly as a sustainability skill rather than an incidental EMI outcome, this research advances sustainability-oriented applied linguistics and provides practical guidance for integrating intercultural capacity-building into EMI curricula.

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Platinum-free direct hydrazine the fuel cell vehicles: Demonstrating an Enduring Hypothesis

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ABSTRACT

Reducing transport related emissions is one of most difficult task in creating a low-carbon future. Transportation is a crucial area for climate action because it now contributes transport one-fifth of the world,,s CO2 emissions. Although electric and hydrogen-powered vehicles are widely promoted as the next big solutions, their widespread adoption is not without obstacles. Their move from promising alternatives to everyday solutions for the general population is still being slowed by high upfront prices, a lack of infrastructure of charging refueling and growing concerns about the availability of crucial raw materials.

This study outlines a long-term endeavor to integrate cutting edge materials and intelligent system designs to produce feasible fuel cell vehicles. The creation of non-precious metal catalyst, the application of anion-exchange membranes and the direct production of electricity from liquid hydrazine monohydrate (N2H4.H2O) as a carbon-free fuel source are the three main pillars of our strategy. Catalyst development was a key focus of this investigation. To detect active catalyst structures under actual working settings, we specifically used in- situ X-ray absorption fine structure (XAFS) studies at the SPring-8 facility. When durability was identified as a key limitation, we further investigated the cathodic reactions intermediates responsible for component degradation. By uncovering degradation mechanisms that had previously gone unnoticed, we were able to design more effective mitigation strategies and accelerate progress toward practical applications. The significance of monitoring electrochemical processes in real-time insights that conventional ex-situ methods are unable to offer- is highlighted by this study. Furthermore, this fuel cell technique lowers expenses and diminishes reliance on limited and geopolitically restricted resources by using fewer precious metals. Additionally, there is a definite logistics benefit. Since the fuel is liquid, it can be transported and stored in conventional polyethylene containers without risk which significantly reduces the infrastructure needed. The system high power density and small size it extremely adaptable, making it suitable not only for automobiles but also a reliable power source for stationary applications and emergency scenarios.

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Art, Culture, and Cognitive Paths to Sustainability Awareness: Narrative

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ABSTRACT

Data, facts, and policy-driven communication play vital role in sustainability awareness. Despite being crucial, these approaches fail to set long-term consistency, cognitive struggle or emotional detachment. And, this raises an important question - how can sustainability awareness be internally generated than understood? In opposition to traditional data-based communication, which avoids emotional processes, this study focuses on art, cultural and narrative storytelling which offer a cognitive approach.

With the theory of narrative transportation, dual-process theory of cognition, and research on affective involvement, the study view narrative fiction as a psychological path that can shape values by emotional experience. Novels by Preeti Shenoy (Life Is What You Make It; A Hundred Little Flames) and Nicholas Sparks (The Notebook; Dear John) are studied as informative cultural novels that encourage emotional stability, and empathy. Though these novels are not working as direct environmental texts, but these novels are viewed as cultural crafts that talk about psychological

characteristics such as care, responsibility, and long-term commitment that are fundamental to sustainability awareness.

The study focuses on storytelling as a human-centered motivator of sustainable thinking by re-examining sustainability awareness as a cognitive and emotional process. The study contributes to interdisciplinary sustainability awareness by portraying how art and culture can enhance data-centric narratives, by offering insights for educators, communicators, and politicians seeking lasting ways to sustainability awareness.

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Renewable Energy Technologies as Drivers of Sustainable Engineering Solutions: A Systematic Review and Future Outlook

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ABSTRACT

The ever-increasing world transition of fossil fuels to renewable sources of energy has changed the concept of sustainable engineering. System integration and socio-economic ramifications of renewable energy. It is apparent in the examined literature that solar, wind, hydro, biomass, and geothermal technologies constitute the core of clean energy transitions, each of them has its distinctive contributions to efficiency, environmental conservation, and resilience. The progress in engineering, smart grids, hybrid systems, and artificial intelligence allow making them more efficient and flexible. Nevertheless, it is still obstructed by long-term obstacles such as intermittency, high start-up prices, and inconsistencies in policies. Sustainable engineering comes out as the integrative approach that connects renewable technologies to the models of the circular economy, infrastructure design, and human development. The review based study comes to the conclusion that the ways to attain net-zero emission are all about coherence of policy, technological advancement and social inclusivity. The areas of AI-based system optimization, recyclable materials, and cross-sector integration should also be examined in future research to take global sustainability to the next stage.

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Art, Culture and Storytelling for sustainable awareness: A study of selected chapters of Valli by Sheela Tomy

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ABSTRACT

Art, Culture and Storytelling are considered as the robust equipment for communicating values, preserving collective memory and forming sustainable relationships between nature and humans. Contemporary environmental crises demand not only scientific solutions but also cultural and ethical alterations. Modern societies disregard the sustainable practices that indigenous narratives possess. This study highlights the selected chapters focusing on the contribution of sustainable awareness through literary storytelling from the novel "Valli". The study explored how myths, cultural memories and indigenous narratives effectively demonstrated in text from the angle of ecological consciousness and ethical responsibility. The study is based on qualitative textual analysis of oral traditions, symbols and narrative patterns with cultural practices to understand how sustainability is inherent within storytelling traditions. The paper examines storytelling as an independent tradition that preserves ecological wisdom and marginalized histories which are removed due to modernity. As a result, the paper contributes to interdisciplinary literature cultural ecology and sustainability, provides a narrative art inspire environmentally responsible measures and awareness. Women played a vital role in transferring the culture to other generations, while a storytelling act as a powerful resistance against ecological destruction. The forest is depicted as a living thing not as a property to gain financial profits. Ecological balances are maintained through maintenance of community practices such as storytelling and cultural traditions. The paper concludes that the indigenous environmental knowledge can be preserved through oral traditions, myths, community practices and rituals.

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Storytelling at the grassroots level: Community engagement and empowerment in Tomb of Sand

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ABSTRACT

This paper examines Gitanjali Sri's ‘Tomb of Sand’ (2021) as a literary remediation that harnesses storytelling for community management, participation, engagement, awareness and capacity building, explores the ideology especially, ‘Ma’s silence of voice’. Set against the backdrop of the enduring hardship of the Partition of India, the novel highlights the marginalized voices of women, the elderly and the displaced and transforms personal loss into communal resilience. Its experimental narrative and multilingual drama hindrance dominant histories and establish storytelling as a non-participatory and ethical practice.

The study shows that Sri's text structuralizes memory as a dynamic communal property, intertwined with discourses on empowerment at the grassroots level. Through the words and wisdom of women, demonstrates the role that literature plays in building strong understanding and social skills.

This analysis, based on postcolonial feminist theory and the ethics of care, highlights the role of storytelling in social construction. The story presents storytelling as a form of engaging with people to raise awareness and empower in political situations. The story is an example of the social understanding and factors involved in the development of support during colonial times

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Blended Finance Models for Climate Innovation: Integrating Venture Capital and Green Bonds

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ABSTRACT

Climate change poses significant risks to economic systems, ecosystems, and human well-being across both developed and emerging economies, creating an urgent need for large-scale investments in climate adaptation and sustainable development. While public funding remains essential, it is widely recognised as insufficient to meet growing climate finance requirements. As a result, increasing attention has been directed toward mobilising private capital through market-based instruments such as green bonds and climate-focused venture capital. These instruments play complementary roles by supporting large-scale climate projects and early-stage climate innovation. In this context, blended finance has emerged as a key approach that strategically combines public and private capital to address investment barriers and enhance risk-sharing. This review synthesises existing literature on blended finance models that integrate green bonds and venture capital to support climate innovation. The paper identifies key themes related to capital mobilisation, public–private coordination, and innovation financing, and contributes to the literature by highlighting the potential of blended finance frameworks to strengthen climate-resilient and low-carbon development pathways.

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From Ṛigveda to Agenda 2030: Bridging Rigvedic Wisdom with the United Nations Sustainable Development Goals

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ABSTRACT

The United Nations adopted the Sustainable Development Goals (SDGs) in 2015 and provided a framework to address the global challenges of environmental crisis, social inequalities, climate change and growth-centric development. This Agenda 2030 was built on Millennium Development Goals (2000-2015) and expanded the MDGs to include climate change, sustainability, inequality, peace and governance. This was an effort to ensure inclusive, integrated, and sustainable development for all nations and relied on technological, economic solutions and policy mechanism. This sustainability framework overlooked the ethical and cultural dimensions of ecological balance and sustainability remained just an enforced idea as it did not turn into internally cultivated practice. The Rigveda, one of the world's oldest philosophical texts of Indian Knowledge System, provides insights into holistic and sustainable living. The paper examines the Rigvedic wisdom in relation to modern sustainability framework and the United Nations Sustainable Development Goals. It analyzes selected hymns bringing to the fore the concepts such as Ṛta (cosmic order), Prakṛti-Upasana (worship of natural elements), Aparigraha (non-possessiveness), Yajna (spirit of sharing) and Sanghabhava (collective responsibility) and map them with the SDGs focusing on clean water, climate action, responsible consumption, biodiversity conservation, and social harmony. The paper adopts a qualitative, descriptive, and comparative methodology and attempts to establish a conceptual bridge between ancient environmental ethics and modern development frameworks. The findings reinforce that Rigvedic concepts promote ecological balance, ethical governance, and community-based living and can address the modern sustainability challenges providing an indigenous model of sustainability.

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AI-Powered Gamified Platforms and Traditional Methods of Soft-Skill Training - Comparative Analysis

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ABSTRACT

This research paper offers comparative analysis of AI-powered gamified platforms and traditional methods of soft-skill training. For this purpose, case study method is used. It explores case studies of AIGP (Duolingo, Replika, LinkedIn) as well as traditional methods (Harvard Business School, Deloitte) and identify their strengths and weaknesses. AIGP has the strength of scalability, accessibility, engagement and personalization, whereas, traditional method has the strength of real-world context, emotional intelligence development, human interaction and mentorship. On the other hand, traditional methods have limitations of high costs, inconsistency in delivery, and scalability issues, whereas AIGPs have limitations of lack in deep human interaction, ethical concern, limitation

in addressing interpersonal soft skills completely, etc. After that, this paper also discusses the case of IBM to elaborate the importance of using hybrid approach to enhance soft-skill training's effectiveness. This paper recommends that use of hybrid approach allows creating more accessible, engaging, and ethical training models for soft-skill development as it supports including strengths of both the methods while dealing with their weaknesses. Research finding of this study contributes to develop more accessible, engaging and ethical training models for the development of soft-skill.

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AI–IoT Synergies for Climate-Resilient Agriculture through Predictive Analytics for Water Management and Crop Productivity

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ABSTRACT

Agriculture is getting more susceptible to climate change and water scarcity and irrigation is also one of the most resources-intensive options of farmers. Most of the existing digital systems continue to use threshold- driven triggers, or out-of-band data displays, and irrigation decisions are still reactive and do not reflect the actual crop conditions. There is still a distance between perception, forecasting and purposeful action. This paper suggests a combined AI-IoT system, in which irrigation is viewed as a forecasting and adaptive control system but not a manual or rule-based process. The system integrates a multimodal environmental sensor, LSTM-based soil moisture prediction, and a reinforcement learning controller that is able to optimize irrigation regimes and schedules of irrigation dependent upon crop development, weather variations and field historical responses. Edge computing guarantees real time performance when connectivity is weak whereas cloud synchronization ensures periodical retraining. Seasonal validation demonstrated definite improvements: the accuracy of the forecasts was up to R 2 = 0.92, and the frequency of irrigation was reduced by 38.6 percent without affecting the health of vegetation or indicators of yield. Latency was also stable with the system working in low-bandwidth field environments reliably. These findings imply that predictive, learning-based irrigation has a substantial potential to minimize the unneeded water consumption and enhance its sensitivity to the environment, indicating the future significant change in the character of climate-resilient agricultural systems design and implementation.

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Sentimental Analysis on Investors' Awareness Level on Mutual Funds

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ABSTRACT

The study presented in this research paper examines the attitudes, preference and behavior of people toward mutual fund investments based on the survey conducted on 100 people. The study focuses on different areas of mutual fund investment such as the frequency of investment, the preferred companies, the reasons behind the investment and the information sources. The results indicate that there are wide disparities in investment participation as 63% of the respondents indicate that they have never invested in a mutual fund and this may be as a result of the respondents being unaware and uncivilized. The strong brand reputation and trust are seen among those who have invested with a preference being laid on the established brands especially the Reliance Mutual Fund. According to the analysis, the main reason why mutual funds are preferred to other sources of investment is their efficiency in taxation and high returns in the long term. Sentiment analysis also demonstrates that investors are counting on unofficial channels of information about investments, indicating that more investor education should be made. The paper concludes that the mutual fund companies need to overcome these barriers by introducing sound educational programs and enhancing communication programs to create a higher level of awareness and involvement in the mutual fund market. The mutual fund industry can empower people through knowledge and confidence and increase their involvement, making them more informed when making investment choices.

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AI-Enabled Adaptive Solar Tracking Framework for Smart Photovoltaic Systems in Smart Cities

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ABSTRACT

The high rate of proliferation of photovoltaic systems within the urban settings has escalated the demand of smart solar tracking systems that can function within extremely dynamic climatic conditions. The traditional methods of tracking are still mostly reactive and as such, orientation changes are delayed and unnecessary energy is wasted in cases where the weather conditions suddenly shift. The current AI-based solutions tend to solve climate prediction and control over tracking as two independent issues, thus they cannot convert predictive understanding into operational value at real-time. To minimize this gap, the given work suggests an AI-powered adaptive solar tracking system that tightly combines a hybrid CNNLSTM-based climate forecasting system with a reinforcement learning-based orientation control. The forecasting module absorbs spatio-temporal climatic dynamics, the learning-based controller is based on the use of such predictions so as to facilitate anticipatory, smooth, and energy-efficient tracking decisions. Through experimental analysis, it has been shown that the proposed framework attains an energy gain of 34.8 % which is better than the traditional single-axis tracking (18.6 %) and non-predictive reinforcement learning-based tracking (26.9%) energy gains. Besides, the average changes in orientation are also minimized, which implies that the mechanical stability is enhanced, and the energy yield is increased. These findings underscore the relevance of predictive-adaptive solar tracking and position the suggested framework as a valid building block to resilient and smart energy infrastructure of smart cities.

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IoT-Driven Climate-Resilient Framework for Real-Time Environmental Monitoring and Sustainable Resource Management

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ABSTRACT

The increasing environmental stress coupled with climatic variability has put pressure on monitoring systems that can respond to environmental change, not merely record it. Traditional IoT implementations offer real-time data streams, and frequently run on inflexible sampling rates, and use resources that they do not need, and are incapable of adjusting to increased environmental variability. This is where the lack of resilience-oriented sensing is demonstrated, which is able to strike a balance between accuracy, bandwidth, and operational life. The paper presents a climate-

adaptive IoT framework comprising of distributed sensing, edge-cloud intelligence and resilience-based decision engine. Its fundamental working principle, CAMRE, dynamically varies the rate of sampling, measures the state of the environment with a real-time resilience index, and optimally manages resources on its own, among other things. It is an adaptive sampling, predictive analytics, and optimization-based actuation system that can help manage the environment sustainably. When the same experiment is conducted across 14 days of mixed condition deployment, it is found that transmission overhead is reduced by almost half, the energy consumption of nodes is reduced by a factor of 35 and the loss in precision in the detection of anomalies is very small. The adaptive model also minimized unwarranted interventions and enhanced operational availability than fixed-rule and learning-based baselines. These results indicate that environmental sensing systems should adopt adaptive intelligence to make them sustainable over the long term and more resilient environmental governance in the changing climatic conditions.

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IoT-Based Smart Water Management Framework for Enhancing Urban Sustainability and Resource Efficiency

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ABSTRACT

The growing demand, aging water infrastructure and the lack of visibility in its operations are forcing current water systems in cities into an ever stricter situation, which is why efficient and adaptive water management is still a thorn in the side of the water management community. Although IoT technologies elevated the degree of monitoring, a large portion of the existing solutions are unable to transform the data into effective and promptly acting control responses. The existing IoT-based water management systems are mostly reactive, cloud-based or fragmented, and are therefore not flexible, energy efficient, or scalable to the real world. The paper offers a proposal of a combined IoT-based smart water management system that closely integrates real-time sensing with predictive analytics and an adaptive control system, which is abbreviated as ASWAM. The structure is planned as a closed cycle system com-prised of cyber and physical, edge assisted processing and a short-horizon demand view coupled with sustainability conscious optimization to aid in proactive decision-making. The proposed approach provides an intelligence entrenched within operational control as opposed to the

rule-based or purely monitoring-focused systems. Experimental testing shows that the proposed framework has a 25-29 percent greater water conservation levels than traditional IoT monitoring solutions and hybridizes less energy per node than cloud-based solutions by about 41.9 per-cent. The response latency between the end and the sensor also decreases steadily with sensor load increase. These results indicate that predictive intelligence and adaptive control may make significant contributions to the sustainability, efficiency and expediency of the urban water management structures.

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AI-Enabled Peer-to-Peer Energy Trading in Decentralized Microgrids

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ABSTRACT

With the continued evolution of renewable systems of energy to the modern day, it is more apparent that there is a need to have a flexible market structure and mechanisms that are transparent. Traditional utility- focused models are not well able to adapt to intermittent supply, different prosumer behaviour and the real-time pricing requirement in decentralized microgrids. Current peer-to-peer trading models provide an encouraging line of reference, but most of them are restricted by strict pricing policies, failure to coordinate dynamically, and sluggishness in the settlement of transactions. The paper presents a peer-to-peer trading architecture, which is an AI-based system that should facilitate autonomous negotiation, dynamic pricing, and verifiable settlement of decentralized energy systems. The model further integrates a multi-agent reinforcement learning model with a thin layer of blockchain execution enabling prosumers to bid, learn and exchange energy without a centralized intervention. The decision making is informed by forecasting modules and pricing fairness and transactional integrity are enabled by smart contracts. The results of experimental assessment demonstrate the obvious improvement of performance: trading efficiency is 92.7% and the use of renewable is 91.4% and are even better than current benchmark systems. There was also an increase in cost savings with the mean of 22.1% decrease over similar P2P or DRL-based trading research. The results indicate that both adaptive learning and decentral- ized settlement can be used to create both efficient and socially scalable energy markets. The suggested frame- work provides a future

trajectory of more independent, resilient, and equitable energy exchange systems that would suit future smart microgrids.

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Personalized Learning Through AI: Impact on Employee Skill Retention and Performance

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ABSTRACT

Climate change poses significant risks to economic systems, ecosystems, and human well-being across both developed and emerging economies, creating an urgent need for large-scale investments in climate adaptation and sustainable development. While public funding remains essential, it is widely recognised as insufficient to meet growing climate finance requirements. As a result, increasing attention has been directed toward mobilising private capital through market-based instruments such as green bonds and climate-focused venture capital. These instruments play complementary roles by supporting large-scale climate projects and early-stage climate innovation. In this context, blended finance has emerged as a key approach that strategically combines public and private capital to address investment barriers and enhance risk-sharing. This review synthesises existing literature on blended finance models that integrate green bonds and venture capital to support climate innovation. The paper identifies key themes related to capital mobilisation, public–private coordination, and innovation financing, and contributes to the literature by highlighting the potential of blended finance frameworks to strengthen climate-resilient and low-carbon development pathways.

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Green Technology Innovation, ESG Ratings, and Corporate Sustainable Performance: A Review of Empirical Evidence

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ABSTRACT

Green technology innovation (GTI), environmental, social and governance (ESG) ratings, and corporate sustainable performance (CSP) have been found to intersect as one of the most critical areas

of modern sustainability studies, especially in the developing economies, such as China and India. In this paper, 24 empirical and conceptual studies will be reviewed that will further synthesize how technology development and financial structures are the drivers of corporate sustainability. The analysis shows that GTI is a major improvement in CSP, which is mainly due to its improvement of the environmental performance, but its short-term financial performance is ambiguous because it is expensive to install and has a time-lag aspect of RCD investments. More importantly, the ESG ratings are an important form of mediating variables, with robust governance and reputation allowing companies to turn technical innovations into the whole sustainability benefit. Moreover, the review is impressive in terms of digitalization changes; the ability of digital technology embeddedness can enable firms to go beyond passive regulation compliance to active low-carbon innovation, which generates network spillovers throughout supply chains. Financially, there is some reason to believe that whereas green bonds and special credit support developed companies, at the early-stage clean-tech start-up there were severe financial limitations that require hybrid financing models and venture capital funding. Lastly, the review also looks into the institutional settings of China and India and it identifies policy consistency, mobile organizational capabilities, and green-innovation ecosystems as the key to spinning renewable energy and green entrepreneurship. The paper closes with a conclusion that to reach long-term sustainability, an integrated solution based on digital capabilities, sound ESG frameworks, and specific green finance should be achieved.

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Design of a Distributed AI-Driven Computing Framework for Context-Aware IoT Ecosystems

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ABSTRACT

More and more IoT devices are being connected to the internet, creating environments with large quantities of devices that need highly intelligent, real-time computation solutions that function at low latencies and are capable of scaling to accommodate massive amounts of harnessable resources. Furthermore, these environments will become more diverse and dynamic as time goes on; it is essential for them to continue operating seamlessly as their characteristics change. Many traditional cloud-centric architectures have not kept up with the growing demand for these types of computing due to multiple factors, including the overhead associated with communication, the existence of latency constraints, and a lack of contextual adaptability. To meet the growing needs of society, there is a need for an AI-based architecture, which is designed in accordance with the future growth of IoT, for context-aware (IoT) ecosystems by integrating edge intelligence and cloud-level learning through adaptive orchestration to provide a framework for supporting these needs. The framework will enable context inference in real time, location-based, real-time, distributed decision making, and continuous optimization of the system through the deployment of AI models across the sensing, edge, and cloud layers. Lightweight ML models would be utilized to perform local inferences on data gathered by the sensing layer, while deep learning models in the cloud would extract and optimize global knowledge and support long-term optimizations. Reinforcement learning policies would be employed by an AI-

based orchestration layer – coordinating computation, communication, and resource usage across the various layers. The introduction of mathematical models will provide a method to quantify the accuracy of any contextual inference, latency, and resource use through the various layers of the proposed framework. In a series of comprehensive experiments, we have shown that Distributed AI-based systems (using a decentralized architecture) lead to much greater inference accuracy, responsiveness and scalability com-pared to Centralized Architectures. We validate our framework against many different kinds of real-world IoT workloads, such as smart cities, Industrial IoT, and Context Aware Cyber-Physical Systems. We provide a scalable Architectural Blueprint, analytical model, and empirical evidence that support our assertion that Distributed Intelligence is a vital enabler for creating the Next Generation of IoT Ecosystems.

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