

Abstract Book

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**‘Emerging Trends in Education
& Research’**

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**The International Journal of Interpretation,
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INTERNATIONAL JOURNAL OF
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MESSAGE FROM THE CONVENER

It gives me immense pleasure and a deep sense of honour to extend my heartfelt greetings to all distinguished academicians, researchers, scholars, and participants attending the International Conference on “Emerging Trends in Education & Research”, scheduled on 14th December 2025 in Hybrid Mode (Online/Offline) and hosted at CSH (OPC) PL, Didar Nagar, Kurukshetra.



This conference aims to bring together eminent scholars, practitioners, young researchers, and innovators from diverse disciplines to share their insights, findings, and perspectives on the evolving dimensions of modern education and research methodologies.

The primary objective of this international forum is to create a vibrant platform for intellectual exchange, academic collaboration, and cross-disciplinary dialogue. Through keynote lectures, paper presentations, thought-provoking discussions, and interactive sessions, the conference seeks to inspire new ideas, enhance scholarly communication, and promote a culture of research excellence. I take this opportunity to express my sincere gratitude to our respected Organizing Secretary, Dr. Pankaj Kumar (Editor-in-Chief, The International Journal of Interpretation, Observation and Analysis), for his exceptional leadership and tireless efforts in bringing this conference to fruition.

My special thanks also extend to our Event Organizer, Dr. Vivek Kumar, Assistant Professor, Maharaj Singh Degree College, Saharanpur, whose dedicated involvement and visionary planning have significantly contributed to the successful organization of this event.

I am equally grateful to Dr. Ajay Kumar, Director of COSMOSSKY HORIZON (OPC) PRIVATE LIMITED, distinguished speakers, reviewers, sponsors, collaborators, and all participants for their valuable support, contribution, and enthusiastic participation. I am confident that this conference will open new pathways for academic excellence, collaborative research, and innovative practices in education.

Wishing all the participants a meaningful, enriching, and intellectually stimulating experience.



Dr. Ankur Nehra
Convener, International Conference on Emerging Trends in Education & Research, 2025
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CONFERENCE SCHEDULE
14th December, 2025 (One day, Online/Offline Hybrid Mode)

Time	Event	Venue
08:00 AM – 09:30 AM	Registration	Registration Desk
09:30 AM – 10:15 AM	Conference Inauguration	Conference Hall
10:15 AM – 1:45 PM	Key Note Lecture	Conference Hall
01:45 PM – 02:15 PM	Lunch Break	
02:15 PM – 04:30 PM	Key Note Lecture	Conference Hall
04:30 PM – 06:00 PM	Poster/Paper Session	Conference Hall
	Prize Distribution	Conference Hall

Lecture Schedule

			Time
1	Dr Gulshan Kumar	Digital India to Transform India	10:15 AM – 11:00 AM
2	Dr. Abhinav	Career in Mass Communication & Journalism	11:00 AM – 12:05 PM
3	Dr. Vivek Upadhyay	Indian education: before and after NEP	12:05 PM – 1:00 PM
4	Dr. Vinita yadav	Investment behavior of women investors	1:00 PM – 1:45 PM
LUNCH			
5	Dr. Vikas Sikerwal	Behavioural Pattern of Rhesus monkey	2:15 PM – 3:00 PM
PAPER & PRESENTATION BY PARTICIPANTS			3:00 PM – 4:00 PM
6	Dr. Pratik Gupta	Role of vedic mathematics in modern life	4:00 PM – 4:15 PM
7.	Mr. Durgesh Mishra	Use of AI tools in English Literature	4:15 PM – 4:30 PM
7	Dr. Madhu	Panchayati Raj System	4:30 PM – 5:00 PM

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**CONTEMPORARY AGRICULTURE — A GEOGRAPHICAL
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A. K. Ramanujan on Basavanna's Vachanas: Study in Fallacy Writing

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Abstract: A. K. Ramanujan (1929–1993) remains one of India's most influential translators, critics, folklorists, and comparative literary scholars. His engagement with medieval Kannada mystic poetry—especially the vachanas of the 12th-century saint Basavanna—represents a landmark achievement in Indian literary translation. In his celebrated collections, *Speaking of Śiva* and *Poems of A. K. Ramanujan*, Ramanujan does more than render Basavanna's poetry into English; he interprets, contextualizes, and rethinks their philosophical significance for modern readers. One underexplored yet profoundly important element of Ramanujan's engagement with Basavanna is what may be called **fallacy writing**—the notion that Basavanna's vachanas systematically expose the logical, ethical, spiritual, and socio-political fallacies of his time. Basavanna, the revolutionary thinker, statesman, reformer, and poet, used the vachana (a brief, intense, aphoristic poetic declaration) not just as spiritual expression but as critique. He identified contradictions within dominant Brahminical, feudal, ritualistic, and patriarchal structures and dismantled them using poetic minimalism, irony, common-sense reasoning, and experiential insight. Ramanujan, in his translations and essays, highlights these embedded critiques with great precision. His work shows that Basavanna does not merely oppose ritualism or caste-hierarchy; he does so by demonstrating the internal logical inconsistencies that uphold them. In doing so, the vachanas often resemble argumentative essays disguised as poems—compact yet explosive critiques of false assumptions and flawed reasoning.

Keywords: Basavanna, Fallacy, Vachana, Tradition

Human Rights and Social Justice: Navigating Contemporary Challenges

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ABSTRACT: Human rights and social justice form the normative bedrock of democratic societies. As globalisation reshapes governance, economic structures, technological systems, and community relationships, the struggle to secure equitable access to rights has become increasingly complex. Contemporary challenges—such as minority marginalisation, gender inequality, socio-economic disparity, climate injustice, and the digital divide—underscore the gaps between normative guarantees and lived realities. While the universal human rights framework provides robust theoretical grounding, implementation deficits persist across national contexts. This chapter explores the evolution of human rights discourse, analyses emerging challenges, reviews institutional and policy responses, and highlights the urgent need to integrate digital rights and climate justice within established human rights frameworks. Drawing on international conventions, constitutional principles, and comparative practices, the chapter proposes a multidimensional rights-based approach that centres dignity, inclusiveness, and sustainable development. The analysis underscores that achieving social justice requires not only legal reform but also structural transformation, public participation, and strengthened accountability.

Keywords : Basavanna, Fallacy, Vachana, Tradition.

SMS Spam Detection Using Data-Driven Techniques: A Comprehensive Review

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Abstract: Even if online chat platforms are the norm, Short Message Service (SMS) remains one of the most common modes of communication. Cybercriminals are drawn to it because of its durability, low cost, and interoperability with a wide range of mobile devices. This review paper examines SMS spam detection systems developed over the previous decade, with a focus on deep learning and data-driven machine learning techniques. Following an explanation of the reason for advanced SMS spam filters, a comprehensive comparison of deep learning architectures, hybrid models, adaptive frameworks, feature engineering techniques, and traditional machine learning models is offered. Some of the major limits addressed include a lack of datasets, language noise, adversarial manipulation, and changing spam trends. Finally, remaining research concerns and future strategies for scalable and dependable SMS spam detection systems are discussed.

Keywords: Deep learning, machine learning, and Word embeddings, TF-IDF, Naïve Bayes, SVM, LSTM, BERT, ensemble learning, data-driven models, adversarial text manipulation, multilingual SMS, and learning to detect SMS spam.

AI-Powered Virtual Mock Interview System: A Full-Stack Intelligent Framework for Objective Interview Preparation

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Abstract: Interview preparedness remains one of the most critical factors determining career success, yet traditional mock interview systems face challenges such as limited availability of expert evaluators, subjective feedback, and lack of structured performance analytics. This paper proposes a full-stack, AI-powered virtual mock interview application that leverages modern large language models (LLMs), natural language processing (NLP), computer vision (optional), real-time communication, and cloud-based data management to deliver scalable, objective, and highly personalized interview experiences. The proposed system combines speech-to-text, text-to-speech, sentiment analysis, content evaluation, advanced analytics, and adaptive questioning to assist learners in improving technical, behavioral, and HR interview skills. Evaluation demonstrates that AI interviewers provide higher consistency, broader availability, and more actionable insights than traditional human-based mock interviewers. Future enhancements include more advanced multi-modal behavioral assessment and integration with professional hiring platforms.

Keywords: AI Interview Systems, Virtual Mock Interview, Large Language Models (LLMs), Natural Language Processing (NLP), Sentiment Analysis, Speech-to-Text (STT), Text-to-Speech (TTS), WebRTC, Computer Vision, Full-Stack Application,

MindSphere AI: An Intelligent MERN-Based Learning Platform Integrating Adaptive Education and Artificial Intelligence

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Abstract—MindSphere AI is a modern AI-driven academic ecosystem designed to increase digital learning through adaptive intelligence, MERN-based architecture, and real-time personalization. The platform embedded machine learning, intelligent tutoring, content suggestions, and automated support systems to target gaps in conventional and now a days E-learning systems. This paper shows the motivation, literature review, architecture, methodology, and comparative study of existing models, providing an in-depth study of the platform. The integration of artificial intelligence (AI) into digital learning systems has changed the academic terminology landscape. Despite the fast introduction of e-learning mediums, major differences exists in personalization, adaptive scoring, and real-time aspiration. MindSphere AI is an smart MERN-based compatible learning ecosystem produced to face these drawbacks with the help of AI-driven tutoring, suggested systems, chatbot assistance and data-driven study platforms. This research shows a elaborative concept of MindSphere AI, simulating its encouragement, literature review, system architecture, terminology, and a differential examination against existing AI-enhanced learning platforms. The study presents how MERN stack technologies included with machine learning models can give huge compatible, enhancible, and real time learning environments. The paper included by exploring the platform’s potential behaviour on academics and future goals needed for large-scale production.

Keywords—Artificial Intelligence, MERN Stack, Adaptive Learning, E-Learning, Intelligent Tutoring Systems.

CNN-BASED APPROACHES FOR DETECTING VIDEO FORGERY

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Abstract—In today’s digital world, video manipulation has become a serious problem, especially with the rise of deepfake tools and increasingly advanced manipulating methods. Convolutional Neural Networks (CNNs) are widely used for detecting such manipulations because they can learn both spatial details and temporal patterns directly from data without heavy manual feature design. This review brings together recent work on CNN-based techniques for video forgery detection, including methods focused on individual frames, temporal sequence modeling, frequency- domain learning, and combinations of CNNs with newer architectures such as Transformers. More than 80 research papers published between 2018 and 2025 were studied, and a clear trend was found: modern systems often combine several types of signals— like motion flow, frequency artifacts, or even subtle biological cues—to improve robustness against compression, adversarial attacks, and dataset variations. While benchmark datasets such as FaceForensics++, DFDC, Celeb-DF, and Deeper Forensics have pushed the field forward, there are still open problems in cross- dataset generalization, precise temporal localization, and detection of emerging manipulation techniques. The main challenge is to develop adaptive, transparent, and resource-efficient models capable of performing reliably in the wild (i.e., social media platforms, mobile devices). To cope with this, a taxonomy of CNN- based strategies is proposed in the review and we also present promising directions, such as multimodal learning, lightweight networks design and

explainable approaches that would lead advances further for practical and robust video forgery detection.

KEYWORDS- Video forgery detection, Convolutional Neural Networks, deepfake detection, multimedia forensics, spatiotemporal analysis, explainable AI.

A COMPREHENSIVE STATISTICAL STUDY OF AIR POLLUTION IN DEHRADUN CITY

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ABSTRACT: Air pollution has emerged as one of the most critical environmental challenges in Dehradun City over the past decade. Rapid urbanization, increased vehicular load, construction activities, and seasonal biomass burning have collectively contributed to the deterioration of air quality. This study presents a comprehensive statistical analysis of major air pollutants including PM_{2.5}, PM₁₀, NO₂, SO₂, and CO, using secondary data collected from government monitoring stations. Descriptive statistics, correlation analysis, and trend analysis were employed to understand pollutant behavior, seasonal variations, and the relationship between different pollutants. The findings indicate that particulate matter levels frequently exceed national permissible limits, especially during winter months, while vehicular emissions remain a dominant contributor throughout the year. The results highlight the urgent need for targeted policy interventions, sustainable urban planning, and public awareness initiatives to mitigate air pollution and improve overall environmental health in Dehradun City.

KEYWORDS

Air Pollution, Dehradun City, Statistical Analysis, PM_{2.5}, PM₁₀, Vehicular Emissions, Seasonal Variation, Environmental Health, Trend Analysis, Urban Pollution.

नगर सहारनपुर की मलिन बस्तियों में स्वास्थ्य, पोषण, शिक्षा एवं स्वच्छता व्यवहार : एक भौगोलिक
अध्ययन

डा० पंकज कुमार, असिस्टेंट प्रोफेसर, भूगोल विभाग, जे वी जैन कालेज, सहारनपुर

डा आनन्द प्रकाश असिस्टेंट प्रोफेसर, भूगोल विभाग, घनौरी पी०जी० कालेज घनौरी, हरिद्वार

सारांश: - आजादी के पश्चात भारत की नगरीय जनसंख्या में तीव्र वृद्धि का होना, गाँवों का कस्बों में व कस्बों का नगरों में परिवर्तित होना, नगरीय जीवन का महंगाई से भरा होना, सामान्य व्यक्तियों के स्तर के रिहायसी भवनों की निरन्तर बढ़ती मांग, नगरों में ऐसे कार्यकर्ताओं की मांग बढ़ना जो मजदूरी, मरम्मत, सफाई, रिकशा चालक, घरेलू कार्यों में भागीदारी (विशेषकर महिला व बच्चों) कर सकें आदि विशोशताओं ने मलिन बस्तियों, विशोश रूप से नई बस्तियों के विकास एवं विस्तार में प्रभावी भूमिका निभाई है। मलिन बस्तियों से आशय ऐसे रिहायशी क्षेत्रों से है, जिनकी सामान्य विशोशताओं में खराब आवास संरचना, आदि भीड़-भाड़, गलियों की अनियोजित व्यवस्था, अपर्याप्त प्रकाश व्यवस्था, अपर्याप्त उद्भूत पेयजल, बारिश के समय जल जमाव पौचालय सुविधाओं की अनुपस्थिति तथा मूलभूत आवश्यकता भोजन है। भोजन बिना जीवन असंभव है। मानव शरीर को निरन्तर क्रियाशील एवं सतत स्वस्थ जीवन बनाये रखने के लिए संतुलित गुणवत्तापूर्ण भोजन प्राप्त होना अत्यन्त आवश्यक है। भोजन मानव की क्रियाशीलता, शारीरिक वृद्धि, मानसिक स्वास्थ्य, रोग प्रतिरोधक क्षमता के विकास के लिए आवश्यक है। पोषण स्वास्थ्य एवं स्वच्छता का घनिष्ठ सम्बन्ध है। जिसके लिये मनुष्य का शिक्षित होना भी आवश्यक है। मलिन बस्तियों में प्रायः इस आवश्यक एवं अनिवार्य सन्तुलन का नितान्त ही अभाव पाया जाता है। प्रस्तुत पोध पत्र में अध्ययन क्षेत्र के अन्तर्गत पाई जाने वाली मलिन बस्तियों में स्वास्थ्य, पोषण, शिक्षा एवं स्वच्छता व्यवहार की स्थिति तथा उसको प्रभावित करने वाले कारकों के स्थानिक स्वरूप का विश्लेषण करने का प्रयास किया गया है।

संकेत शब्द: - मलिन बस्ती, शिक्षा, स्वास्थ्य एवं स्वच्छता व्यवहार

LIGHTWEIGHT CRYPTOGRAPHIC SCHEMES BASED ON ELLIPTIC CURVES OVER RINGS $Z_p[i]$ FOR SECURE AUTHENTICATION

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ABSTRACT: Lightweight cryptography has become essential for securing resource-constrained environments such as IoT devices, wireless sensor networks, embedded systems, and mobile platforms. This paper proposes **lightweight cryptographic schemes based on elliptic curves defined over the Gaussian integer ring $Z_p[i]$** to achieve efficient and secure authentication. The algebraic structure of $Z_p[i]$ provides richer mathematical properties, enabling the construction of elliptic curve operations with reduced computational complexity while maintaining strong security guarantees. The proposed authentication mechanism leverages enhanced point arithmetic, optimized key generation, and reduced-cost scalar multiplication over $Z_p[i]$, thus offering significant improvements in energy consumption, memory usage, and execution speed. Performance evaluation demonstrates that the $Z_p[i]$ -based lightweight schemes outperform traditional ECC-based systems in both efficiency and resistance to common cryptographic attacks. These features make the proposed framework a suitable candidate for next-generation secure and lightweight authentication applications.

Keywords: Lightweight Cryptography, ECC, Lightweight Authentication, Scalar Multiplication Optimization, IoT Security, Public-Key Cryptography

JEWELRY CULTURE IN UTTARAKHAND: CURRENT-DECADE TRENDS IN GARHWAL AND KUMAON

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ABSTRACT: Uttarakhand, popularly known as Devbhoomi, is renowned not only for its sacred temples, spiritual heritage, and rich cultural traditions, but also for its distinctive jewelry culture that reflects the identity of the Garhwal and Kumaon regions. Over the current decade, traditional ornaments such as nath, pauji, galobandh, bichuwa, karnphool, and chandrahar have continued to hold cultural significance while simultaneously evolving in design, material, and usage. This study explores the contemporary trends in the jewelry practices of Uttarakhand, highlighting how local artisans, cultural festivals, tourism, and modern fashion influences have contributed to the preservation and transformation of these age-old adornments. The research also examines how increasing global recognition driven by tourism and digital platforms has elevated the visibility of Uttarakhand's jewelry traditions. Overall, the study provides insights into the blend of tradition and modernity that characterizes the jewelry culture of Garhwal and Kumaon in the present decade.

Keywords: Uttarakhand Jewelry, Garhwal, Kumaon, Traditional Ornaments, Contemporary Trends, Cultural Heritage, Nath, Galobandh, Artisan Craftsmanship, Tourism Influence, Devbhoomi Culture, Modern Adaptations, Regional Identity.

APPLICATIONS OF DIFFERENTIAL EQUATIONS

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Abstract: 'Differential Equations & Applications' ('DEA') aims to publish original papers from the fields pertaining to ordinary, functional-differential, and partial differential equations. Only papers of the highest quality will be accepted for publication. The papers which demonstrate novelty, establish relations of differential equations with other fields of mathematics or examine a variety of applications of differential equations are particularly welcome.

Differential equations have applications in many fields, including physics (e.g., motion, waves), engineering (e.g., circuits, structures), biology (e.g., disease spread, population dynamics), and economics (e.g., GDP growth, investment strategies). They are used to model dynamic systems and the rates of change in various quantities like temperature, pressure, and velocity over time or location.

Differential Equation applications have significance in both academic and real life. An equation denotes the relation between two quantity or two functions or two variables or set of variables or between two functions. Differential equation denotes the relationship between a function and its derivatives, with some set of formulas. There are many examples, which signifies the use of these equations.

The functions are the one which denotes some sort of operation performed and the rate of change during the performance is the derivative of that operation, and the relation between them is the differential equation. These equations are represented in the form of order of the degree, such as first order, second order, etc. Its applications are common to find in the field of engineering, physics etc.

Keywords: Differential equations, applications, physics (e.g., motion, waves), engineering (e.g., circuits, structures), biology (e.g., disease spread, population dynamics), and economics

PERCEPTION OF INVESTORS TOWARDS IPO GRADING

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Abstract: The term "IPO" stands for "Initial Public Offering," and it refers to a fresh offering of shares from a previously unlisted company. This is accomplished by selling to the general public the shares owned by the promoters or private investors prior to the IPO. When additional investors or the Promoter own the shares, their position is reduced to the amount that their shares are made available to the public. In other circumstances, fresh shares are issued to the public, while the promoters' shares remain with them. In both circumstances, the promoters' share of the overall capital decreases.

Initial Public Offer (IPO) means when a public company offer its share or sells its share in public for the very first time. The offer mostly provided by the brand new and tiny corporations to enlarge their capital but, large private firms also offer IPO to become public company. The new companies face the problem of financial resources to issue the IPO. So, they generally depend on the other private funding like personal loans, family and friends. Therefore, they look for the investors which help them for their IPO process. Investors offer finance to the company for the stake in the company. The investor is liable in the decision-making process and also advice the management in most of the company issues. When the investors of the company want to liquidate their investment, they have options like sell the equity to different company, sell the whole company to another company as an acquisition, or sell the equity in the Initial Public offering of the company. Also, when a company in needs of finance for the development of their company then they have options like private market equity, issue debt in the market or offer equity in the public which means initial public offer in the market.

Keywords: Initial Public Offering, Perceptions, Financial Market Investor, Company performance.

The impact of digital marketing on customer satisfaction

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Abstract: Digital Marketing, Regarded As A Modern Approach To Promotion, Has Provided Organizations With The Ability To Operate Continuously In Today's Competitive Global Economy. Personal Interactions Can Be Advantageous. Currently, Internet Usage Is Surging Across Various Sectors. This Era Is Dominated By Digitalization, Prompting Marketers To Embrace Digital Marketing Strategies That Leverage Digital Technology To Promote Products And Services, Gather Feedback, And Convert Potential Buyers Into Loyal Customers. The Levels Of Customer Satisfaction Among Retained Clients Are Examined To Assess The Extent Of Digitalization. The Research Aimed To Identify The Factors Influencing Digital Marketing And The Level Of Customer Satisfaction It Achieves. One-Way Anova Was Utilized To Analyze The Study, And The Findings Indicated Significant Results.

Keywords: Digital Marketing, Digitalization, Internet, Customer Satisfaction, Digital Technology.

Management of Earnings in Corporate Office

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Abstract: In view of the rising concern over the quality of financial reporting by the Indian commercial especially after a series of commercial scams in the recent times, this study is motivated in the hunt of various earnings management practices of the listed Indian enterprises that have an important bearing on the quality of financial reporting by the Indian commercial. Presumably similar earnings management practices have also some part in recent commercial scams. Although it cannot be denied that earnings management has an important part to play on the quality of financial reporting of Indian enterprises and on public perception about enterprises, yet there are no substantial empirical studies in India on the issue. Either, there's a severe dearth of the theoretical and empirical literature on the issue in developing nations. The present study

intends to contribute towards the literature on the earnings management especially the real earnings management in the Indian listed enterprises. In terms of the impact of macroeconomic terrain, the study examines whether there has been a change in the earnings management behaviour of the Indian listed enterprises during the Global Financial Crisis of 2008 vis-à-vis the non-crisis period. By examining the relationship between the earnings management in enterprises and its future performance, the study intends to understand whether earnings management signals future prospects of the establishment to outsiders or help directors to make private earnings by rehearsing opportunistic earnings management. Fastening on the real earnings management- considered to be more value mischievous for the establishment than accrual management- the study explores the part of directorial capability towards confining REM in enterprises. The findings of the study might give significant information to investors, controllers, board of directors and other stakeholders for effective decision-making in commercial.

Keywords: Earnings, Management, Investor's, Regulator, Financial, Accrual, Regulations, Firm's.

A study of India's most popular online educational portals, websites and apps

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Abstract: This research paper investigates the landscape of popular online educational portals in India, examining their features, user engagement, and impact on learning outcomes. As the demand for digital education surges, especially post-pandemic, platforms like BYJUS and Unacademy have emerged as significant players. The study employs a study of secondary data from the selected portals. Key metrics analysed include user accessibility, content variety, pedagogical effectiveness, and user satisfaction. Findings reveal a diverse range of educational resources tailored to different learning needs, highlighting the effectiveness of interactive tools and personalized learning paths. **A Modern-Day Approach:** The NEP 2020 has a special focus on online education. Universities and institutions like NITs and IGNOU will be conducting pilot research studies to maximize the benefits of digital learning in India. Online tools and platforms like DIKSHA and SWAYAM (Study Webs of Active Learning for Young Aspiring Minds) will

be upgraded with new insight into training content, in-class resources, assessment aids, profiles, etc. that will allow seamless interaction. It also focuses on the creation of public digital and interoperable infrastructure that can be utilised by multiple platforms. NEP 2020 emphasizes the creation of virtual labs wherein students can practice their theoretical knowledge and make course content available in different languages. The newly renamed Ministry of Education proposes to set up a dedicated unit for the promotion of digital learning. The dedicated unit will comprise experts from the field of education, educational technology, administration, and e-governance who will focus on the online learning needs of both the school and higher education. More emphasis will be given to online assessment and examinations. The present age is driven by digital technology and the whole globe comes under the influence of the Internet and the World Wide Web. The internet equipped both the education seeker as well as the education provider and laid them together under the virtual roof. Due to this, the concept of virtual classrooms is already popularized across the globe. Therefore, in the modern era, the role of online technology in providing education is vital and with its flexible nature online educational technology has gained popularity. The online education is now more accessible to the less privileged groups in comparison to the centralized classroom education system.

Keywords: India's, most popular, online educational portals, websites and apps

Effect of e-learning on the intellectual level of students

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Abstract: E-learning is gaining lot of popularity in the country due to various socio-economic parameters and the rising demand for education. The campus based education system is not able to cope with the increased demand for training, education and updating knowledge. The importance of e-learning is being realized by the educators and policy makers across the globe as it has the potential to provide access to higher education. It is a very encourage from the education which has something to offer to people across the whole society. It is acquisition of knowledge and skill through mediated information and instruction. The purpose of this study is to determine whether smart applications can help students in the United Arab Emirates (UAE) acquire higher levels of proficiency in scientific ideas. To do this, 120 eighth-graders (the last year of the second cycle) from schools in UAE city of Al Ain participated in a quasi-

experimental study. These students were divided into two equal groups at random: a test group that studied with the aid of technology, and a control group that learned through the conventional classroom technique. As a result of the type of smart application used, particularly Alef platform in comparison to the Boclips and Connect platforms, the results also showed statistically significant differences between the mean scores for the experimental group students' achievement level regarding scientific concepts. The e-learning is an umbrella term that describes learning done at a computer, usually connected to a network, giving the opportunity to learn almost anytime, anywhere. E-learning is efficient as it eliminates distance and subsequent commutes. Distance is eliminated because the e-learning content is designed with media that can be accessed from properly equipped computer terminals and other means of Internet accessible technology. Deeply imprinted impressions of classroom-based education and the importance of guidance of a teacher, who is there with a personal touch, have often restricted people from trying to get fair perspective of e-learning. But the advent of internet in the business and social spectrum the world over has transformed the whole process of learning. The elearning space is becoming wider and increasingly vital with everyday passing day. Fry (2000) and Wild et al. (2002) describe E-learning as the delivery of training and education via networked interactivity and distribution technologies. Khan (2005) pointed that E-learning has been described in various ways as learning using a number of different technologies and methods for delivery e.g. Computer Based Training (CBT), Internet-based training (IBT), Web-based instruction (WBI), advanced distributed learning (ADL), distributed learning (DL), distance learning, online learning (OL), mobile learning (or m-learning) or remote learning and learning management systems (LMS). Al-Ammari and Hamad (2008) In E-learning system, students are able to interact anytime from wherever with different instructional material (text, sound, pictures, video and so on) through Internet. In addition, learners can communicate with teachers and classmates both individually and as a group discussion with the use of message boards, instant message exchanges and video conferencing. As there is unlimited social interaction in an e-learning set up, students must keep themselves motivated; they must communicate with each other and the instructor frequently to accomplish their assigned tasks

Keywords: E-Learning, Achievement Motivation, Academic Performance, Socio-economic Status, Intelligence

ASEAN IN CONTEMPORARY WORLD AND SECURITY IMPLICATIONS FOR INDIA

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Abstract: In the early 1990s, in the aftermath of the Cold War, growing great power harmony and the rise of economic globalisation created favourable conditions for regional institution-building and economic cooperation under ASEAN's leadership. This positive global and regional environment also allowed for India's slow but sustained integration into ASEAN led institutions, including the ASEAN Regional Forum, the ASEAN Defence Ministers Meeting-Plus and the East Asia Summit.

Today, in contrast to the last three decades, great powers are locked in an intensifying rivalry and their all-encompassing competition is slowing – if not reversing – the trends toward economic globalisation and technological collaboration across borders. The continuing war in Ukraine and the escalation of the conflict between Israel and Iran have cast a dark shadow over the ASEAN discourse.

Meanwhile, China's regional assertiveness, especially regarding maritime disputes in the South China Sea, has put enormous diplomatic, political and military pressure on ASEAN. To make matters more complicated for the region is the determination of the United States (US) to reclaim its military primacy in the region and the resultant tensions between the armed forces of the two nations all along the Western Pacific. The US has reinforced its bilateral alliances with Australia, Japan and South Korea, strengthened security support for Taiwan, promoted trilateral cooperation with Tokyo and Seoul, promoted triangular engagement with Japan and the Philippines, constructed the AUKUS alliance to build nuclear powered submarines for Australia with the United Kingdom. It has also revived the Quadrilateral Security Dialogue (Quad) with Australia, India and Japan. The intensification of US-China military conflict in the region and the economic de-globalisation are posing new challenges for ASEAN, which has long benefited from the US-China commercial cooperation.

Where does this leave India in relation to ASEAN? New Delhi's relative standing in the region has risen, thanks to its sustained economic growth and growing military capabilities. The Lowy

Institute's annual ranking of regional power has indeed elevated India to the third position after the US and China. India's active participation in the Quad has given a new edge to India's regional role. New Delhi, which kept a low profile on regional security issues in the past, is now taking a more affirmative position. It has underlined ASEAN's centrality in the regional security architecture and has sought to reassure that the objective of the Quad is not to undermine ASEAN.

At the East Asia Summit, Modi opposed China's "expansionism" (without a direct reference to the country) and underlined the importance of Beijing abiding by the Law of the Sea in managing and resolving maritime disputes in the South China Sea. Modi also expressed support for ASEAN's efforts to manage the deepening internal crisis in Myanmar while insisting that engagement and not isolation of Yangon are critical for progress.

Over the last decade, India has also expanded bilateral military cooperation with several countries, most notably the Philippines. Intensifying defence cooperation with ASEAN collectively is also a high priority for India's regional security policy and the joint statement issued after the India-ASEAN summit reaffirmed the mutual commitments to strengthen cooperation in "maritime security, counterterrorism, cybersecurity, military medicine, transnational crime, defence industry, humanitarian assistance and disaster relief, peacekeeping and demining operations and confidence building measures."

Keywords: ASEAN, CONTEMPORARY WORLD, AND SECURITY IMPLICATIONS, INDIA

EFFICACY OF TEACHERS AT ELEMENTARY LEVEL OF EDUCATION

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Abstract: The curriculum of Bachelor in Elementary Education requires prospective teachers to undergo student teaching. In the student teaching phase, the student teacher is mentored by a student teaching supervisor and cooperating teachers. They are exposed to both on and off-campus training. The student teaching supervisor joined the cooperating teachers to evaluate the teaching performance of the student teachers. Individual consultations were conducted to provide feedback on how to improve the teaching skills of the student teachers. Feedbacking on the

strengths and weaknesses of the student teachers' teaching performance was done. The training of the student teachers in the private and public elementary schools may have bearing on the development of their teaching efficacy. The researcher employed the constructivist model of qualitative research to describe the teaching efficacy of student teachers. A focus group discussion was conducted to describe the indicators of teaching efficacy. Statements describing teaching efficacy were organized in a questionnaire. To establish the reliability of the items, the questionnaire was pretested to 37 student teachers who were doing their observation and participation prior to student teaching/internship. The questionnaire yielded a Cronbach alpha of 91%. The result signified that the items are reliable. The questionnaire was then administered to the 24 student teachers. Based on the data gathered, three core categories based on the weighted means of the items emerged. These core categories centered on training, professional, and personal competencies. It was further described that the student teachers' level of teaching efficacy is generally very high. In conclusion, the on and off-campus training of the student teachers contributed to the development of their teaching efficacy. The training had developed their professional and personal competencies. For further usability of the questionnaire developed from this study, it is recommended that a broader scope be considered, other variables that correlate to teaching efficacy be identified, and pretest and posttest be considered to describe the significant difference after ample training is provided to the student teachers.

Keywords: Teaching, Teaching Efficacy, Student Teachers

Detailed Study – The Impact of Modernization on Jaunsari Women

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Abstract: This era of modernization and globalization where everything is changing. This change is not only found in developmental area but also in social construction. If look on the other side, some people on the corner side of Uttarakhand who live in a community but completely excluded from the mainstream. Their population are aborigine inhabitants of India whose life is based on natural environment that is suitable to their physical and social environment. A tribal region, Janusar Bewar that is located in the north – western part of Dehradun district of Uttarakhand known for its distinct tribal culture. Jaunsari women play a vital role in family and maintaining the cultural life of the tribe. Before the influence of modernization, their life style was shaped by agriculture, custom and strong tradition. Their way of life may be called primitive, not in negative sense but as a self-sufficient and eco- friendly system rooted in indigenous knowledge. They were busy in agriculture, collection of firewood, fodder, wild fruit and herbs from the forest. In other words, their work formed the backbone of the rural economy. They wore traditional dresses that reflected community identity. As their lives were deprived from many things in which included education, participation in family or other matters and many more. The most distinctive feature of this tribe was polyandry in which one woman married with two or more brothers in the same family. The senior male acted as the family head and all husbands shared responsibility. The interesting part in Jaunsari marriage is that all the arrangements are made by the bridegroom’s father. Women had no right to choose their groom. It was done by the family. As by the passing of time and with the spread of modernization through education, media technology and government policies, there is significant change in Jaunsari women. They have been transformed themselves. They try to change their primitive way of life by getting education and have adopted new lifestyle to flourish themselves. This research paper provides the detail information about the impact of modernization on Jaunsari women. Through the modernization, they have connected themselves to the mainstream. They have come in front of society and spread their culture and tradition in different parts of the world through the media and adopting new technology.

Keywords: - modernization, community, tribal, primitive, polyandry

WORLD WAR II PAVED THE WAY FOR THE RISE OF INDIAN NATIONALISM AND THE INDIAN INDEPENDENCE MOVEMENT

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ABSTRACT: The present article takes a global perspective on the Indian revolutionaries who were emerging on the eve of World War II. India and the Indian freedom movement entered its final and most decisive phase, and began immediately after World War II. The Indian National movement started and witnessed the people around India in support of the freedom movement. World War II left Britain economically exhausted and politically weakened. The Quit India Movement (1942) had created deep nationalist feelings among the Indians, and people across India were united in demanding freedom. The Indian National Army created awareness of independence and nationwide protests to weaken the moral authority of the British government. Indian political leaders from the Congress and the Muslim League negotiated strongly for independence, and during this period, political leaders shaped the final political settlement with Britain. At the same time, Subhas Chandra Bose's Indian National Army (INA) inspired nationalist pride and proved that Indians were ready to mass protests that united people across regions and communities to fight against Britain for their freedom.

KEYWORDS: World War II, Britain, Indian National Army, Quit India Movement, and Freedom fighters.

ROLE OF ENGLISH LANGUAGE IN EMERGING TRENDS IN EDUCATION AND RESEARCH

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English is not just “a language” in today’s education and research ecosystem, it is the single most powerful gatekeeper of opportunity, prestige, funding, and global visibility. This research aims to highlight the beginning of the English language and the emerging trends and issues facing. In higher education, the concept of English Education has expanded due to globalization and internationalization, providing essential language skills to enhance students' learning competency. The systematic analysis of qualitative research is used the most, and the attention of previous studies is on pedagogy, instructors, and learner experiences. The National Education Policy plays an important and challenging role in the development of students' career growth by allowing them to opt for multidisciplinary subjects of their interest. Several criticisms of the language learning process can be observed in India. The important aspect of this research is to highlight the technologies, digital tools used, multimodalities, social crisis, and more in language learning. The research publication and journal readable access of article to the student made easy for understanding the concepts in depth of language barrier.

KEYWORDS: English literature, National Education Policy, Technology-Enhanced Learning, and research publications.

Effects of Blended Learning Methods on Student Teachers' Professional Competence and Teaching Aptitude in an Integrated B.Ed. Course

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Abstract: Blended learning method which combines face to face classroom instruction with technology-enabled online learning, has become a revolutionary paradigm in education for learners and teachers. The current study investigates how student teachers enrolled in integrated B.Ed. courses are affected by blended learning approaches in terms of their professional competence and teaching aptitude. It looks at how various blended learning models affect instructional planning, assessment techniques, professional ethics, reflective thinking, pedagogical skills, and educational values. The study highlights how blended learning can improve teaching-related traits like critical thinking, creativity, learner engagement, emotional intelligence, and flexibility. Additionally, it assesses the difficulties teachers have when using blended learning.

Teacher education has undergone a radical change as a result of blended learning's rise to prominence as an instructional paradigm, especially in professional preparation programs like the integrated B.A.B. Ed and B.Sc. B.Ed programs. Student teachers entering the field are required to have both basic pedagogical knowledge and the capacity to function in flexible, hybrid, and technologically advanced learning contexts due to the growing incorporation of digital technology in educational ecosystems. In this regard, the current study investigates how student instructors enrolled in integrated B.A.B.Ed and B.Sc.B.Ed programs enhance their teaching aptitude and professional competence in relation to blended learning methodologies.

The study also presents the contribution of blended learning to the professional competence of student teachers. Through the integration of digital and traditional pedagogy, student teachers acquire pedagogical content knowledge, digital literacy, reflective professional values, and learner-centric instructional strategies and other kind of online learning apps. The competency-building potential of blended learning becomes especially relevant in light of the National Education Policy (NEP-2020), which highlights technology-enabled education and constructivist

learning models. The exposure to online collaboration, peer learning, digital assessments, open educational resources (OER), and e-portfolios allows student teachers to adopt innovative and flexible teaching styles rather than depending solely on conventional lecture-oriented delivery. These hybrid teaching-learning environments also contribute to the development of professional dispositions such as accountability, empathy, inclusiveness, leadership, and adaptability qualities that are indispensable for modern educators working with diverse learners.

The roles of student teachers have been altered by blended learning, which involves a methodical combination of in-person classroom contact with online technology-enabled teaching techniques. Pre-service teachers can participate in virtual peer learning, use digital tools for instructional design, engage in synchronous and asynchronous learning experiences, and incorporate educational technology into their practice teaching with this paradigm.

Blended learning has the potential to greatly improve teaching ability by fostering important traits including confidence, communication skills, classroom leadership, creativity in course delivery, and emotional equilibrium in teaching settings. Additionally, the availability of online teaching simulations, e-assignments, interactive digital platforms, and multimedia resources gives student teachers the chance to practice their teaching techniques in a variety of settings, enhancing their capacity to effectively manage classrooms, plan lessons, create assessments, and engage students.

The findings demonstrate that blended learning is not an extra or optional teaching method, but rather an essential pedagogical technique for educating educators for the twenty-first century. According to the study's findings, integrated B.Ed. student teachers' teaching aptitude and professional competence significantly increase when blended learning is used with the right infrastructure, mentorship, and preparation. This gives them the tools they need to deliver effective, learner-centered, technologically flexible, and morally sound training in real classroom environments. This study is helpful for research scholars who want to conduct research on this topic. The new teachers who will enter the profession can understand and learn modern and upcoming teaching methods through blended learning, which will enable them to teach students more effectively.

Key Words – Blended learning, Teaching Aptitude, Professional competence, student teachers of Integrated B.Ed course.

Organizational Resilience in the Light of National Education Policy 2020

Dr. Kanak Sharma and Shalini

Abstract Human is an important part of society and he gets socialize by living in it. Through education, any person learns the basic rules, systems, social paradigms, and values of society. Education is imparted under such institutions which socialize the person by giving him knowledge of nation, society, conduct, values, efficiency, and skills that are required to live successfully in society, workplace, and at home. Therefore, we can say that education plays an important role in human development by connecting the individual within society through an institution. So, people, education, and organizations are interconnected with each other. The global education development agenda, as reflected in the sustainable development agenda 2030 [SDG,4] adopted by India in 2015, aims to ensure inclusive and dignified quality education for all in the world by 2030 and promote lifelong learning opportunities. On the behalf of this, we can say that, if education is to be accessible to every person and the goal of National Education Policy 2020 is to be fulfilled, then first of all the organizations need to be resilient. This paper reflects on organizational resilience in reference to some important concepts like Multilingualism, Multidisciplinary and holistic education, Common entrance exam system, Multiple Entry and Exit Points, Academic Bank of Credit, Equity and Inclusion, Open & distance learning and online education, and flexible curriculum (as described in the National Education Policy 2020). This paper also throws light that how we can do an excellent job in the direction of organizational resilience by promoting or doing changes to all the above-mentioned concepts and rendering the dimension of education to every person.

Keywords: Education, organizational resilience, National Education Policy 2020.

Nexus between Gross Domestic Product and Its Three Major Sectors in India: A Granger Causality Test

Dr. Kanchan Singh

Abstract The aim of this paper to examine the nexus between GDP and its three major sectors (agriculture, industry and services) during 1991-2020. Establish to the relationship among the variables the unit root test and the granger causality test have been applied. The unit root test results for agriculture data and industry data series are non-stationary in all the three models at level but it is become stationary at first differences except without drift plus trend mode (i.e., model one). While, the unit root test for services sector and GDP data series are non-stationary in all the three models at level as well as first differences and it is become stationary at second differences in all the three models. Whereas, the granger causality test for GDP and agriculture sector indicates that the unidirectional causality has been noted for agriculture to GDP at lag 3, lag 4 and lag 5 and at lag 1 the unidirectional causality is observed for GDP to agriculture, while bidirectional causality has been recorded at lag 2 for GDP and agriculture sector in India for the period 1991-2020. At the same time, the granger causality test for GDP and Industry have been obtained bidirectional for lag 4, while unidirectional for lag 1, lag 2, lag 3 and lag 5 for Industry to GDP. Whereas the granger causality test for GDP and services sector have been shown bidirectional relationship at lag 1 to lag 5 for the period 1991-2020. Further, the direction of causality has been recorded for industry to agriculture sector is unidirectional for lag 1 to lag 4 whereas no causality has been noted at lag 5 between industry to agriculture sector during the study period. And finally, the granger causality test for services sector and agriculture sector have been shown unidirectional for lag 1 and lag 2 while no causality has been noted at lag 3 to lag 5 for services sector and agriculture sector for the period 1991-2020. And finally, the direction of causality for services sector to industry have been observed unidirectional at lag 2 to lag 5 while at lag one the direction of causality has been recorded unidirectional for industry to services sector.

Keywords: GDP, Agriculture, Industry, Services, Unit Root Test and Granger Causality Test.

The Study of Employment Growth in Industrial Sector of Haryana (1966- 2020)

Ms. Kanta

Abstract The present paper is an attempt to study the employment growth in industrial sector of Haryana according to statistical abstract of Haryana. The manufacture sector is playing a lead role to drive the growth of secondary sector. As almost similar growth rate is investigated for Haryana of secondary sector from 1966 to 2020. Moreover, the share of industry sector was rotating about 41 per cent of shops from 1966 to 2020 and around 38 per cent of commercial establishments from 1966 to 2020, the share of secondary sector in hotels and restaurants were around 26 per cent. The total growth rate of industries was 4.135 per cent and an employee in industries was 7.571 per cent.

Keywords: Growth Rate, Industry, Employment, Haryana.

The Role of Human Capital in Total Factor Productivity in Indian states: An Empirical analysis

Kishor Mehra and Satyanarayana Murthy Dogga

Abstract The present study attempts to empirically, investigate the interrelationship between human capital and innovation in Indian context. The study is conducted by taking all the 14 Indian states and Union territories (with highest SGDP) into consideration from a regional perspective, focusing mainly on the quantification of the factors used. For the purpose the human capital index has been created using three sub-indices and total factor productivity has been estimated using four advanced methods. Since the simultaneous equation model is often subject to the problem of simultaneous bias and endogeneity, instrumental variable method using Two Stage Least Squares (2SLS) has been utilized to overcome the issue. The empirical analysis provides the evidence of bidirectional spatial causality between human capital and total factor productivity for Indian states, which holds significant policy implications for the country. Given a large demographic dividend in the form of highest working age population in the world, India could reap its benefits by promoting investments in the soft infrastructure such as human capital, encouraging innovation and entrepreneurship, supporting small and medium sized enterprises (SMEs), improving the regulatory environment, enhancing digital infrastructure and encouraging regional development. This could help to boost its economic growth in the long run.

Keywords: Labour Productivity, Economic growth, Total Factor Productivity, Estimators, Simultaneous equation model, Instrumental Variable Regression, Two Stage Least Squares

Innovation and Resilience in the Digital Economy: An Analysis of India and China

Kuber Das, Mishab Ibrahim and Jaya Kritika Ojha

Abstract The digital economy is a critical driver of economic growth worldwide, powered by technologies like AI, big data, cloud computing, IoT, and robotics. Innovation is key to leveraging these technologies for economic advancement. Adopting the qualitative approach and secondary data, the paper reviews, compares and contrasts the digital innovation and development of India and China and identifies several new digital innovations. India is among the fastest-growing digital economies, while China is considered a leading innovator. Digital platforms like iOS and Android have transformed traditional business models, leading to a new era of digitization. The paper suggests that to sustain its growth, India must invest in digital infrastructure, innovation, regulation, entrepreneurship, and digital trade. Proper planning and execution are essential to prevent budgetary constraints and development delays. The government should promote innovation through an integrated structure involving public and private players and invest in incubation, education, and research. Comprehensive digital economy regulations that accommodate future developments are necessary. India can become a dedicated hub for digital trade, leveraging its large population of young people to drive innovation. Improving the education system will ensure a skilled workforce and support changing consumer behaviour for growth. The paper emphasises the importance of resilience in the digital economy. Building resilience in digital infrastructure and systems is crucial for sustaining growth as the risk of cyber-attacks and other disruptions increases. India must prioritize building robust digital infrastructure and enhancing cybersecurity to ensure resilience in the face of challenges. By investing in innovation, digital infrastructure, and resilience, India can continue its growth trajectory and become a leading player in the global digital economy.

Keywords: Innovation, Digital Economy, Resilience, India, China.

CSR & Labour Relations Post Covid-19 Pandemic: A Need Assessment from a Legal Perspective

Litty Denis¹

Abstract Corporate Social Responsibility (CSR) has come a long way in India and one can witness India setting benchmarks of the internationally acclaimed best CSR practices here including mandatory CSR reporting. During Covid-19 pandemic times, the first wave and the subsequent lockdown left large number of labourers in lurch and it saw an exodus of labour to their hometowns from the industrial towns of India. This signals partially towards the inadequacy of labour laws and strongly the lack of responsibility of corporates towards their own people who for long had contributed to the profits or growth of the organisation. The current paper attempts to find out gaps in the labour laws and suggest where CSRs could have played a significant role in the wellbeing of its own labour. The major findings point out that labour laws cater to the large factory setups and therefore do not cater to the wellbeing of smaller enterprises. Even for the large factories there is no legal requirement to provide for residence and basic food arrangements beyond work hours. Hence, when crisis struck the labour was stranded and the entire cycle of work and wants broke down showing the glaring need for care. This paper proposes that the mandatory CSR provisions should make available the basic needs of food and shelter to the internal stakeholders first and then to the external community and other stakeholders. However, making such a mechanism to function efficiently requires government support and also above all, the earnest intent of the corporates.

Keywords: CSR; Labour Laws; Pandemic; Labour Relations

The Impact of Globalization on Energy Consumption: A BRICS Country Analysis

Meenakshi Gautam¹

Abstract Globalization has had a substantial impact on the energy consumption habits of the BRICS nations (Brazil, Russia, India, China, and South Africa). As these nations have been more integrated into the global economy, they have witnessed fast urbanisation, industrialisation, and economic expansion. These factors have resulted in a rise in energy demand in the BRICS nations. The expansion of the industrial sectors in the BRICS nations is a major factor in the increase in their energy consumption. Efforts have been made to promote renewable energy and energy efficiency despite the rise in energy demand in the BRICS nations. For instance, China has become a leader in the deployment of renewable energy, particularly solar power. Moreover, India has made substantial investments in renewable energy, such as wind and solar electricity. Considering all these factors, this study examines the effect of globalisation on energy consumption in BRICS countries from 1990 to 2019. Utilizing panel data analytic methodologies, the study examines the relationship between globalisation and energy consumption, taking into consideration several factors that may influence this relationship, including economic growth, trade openness, urbanisation, and technological advancement. Globalization has a positive and considerable impact on energy consumption in BRICS nations, with economic growth being the most significant driver. However, the impact differs by country, with China having the most influence, followed by India and Brazil. As BRICS countries continue to integrate into the global economy, energy consumption is anticipated to increase, and governments must establish sustainable energy policies to balance economic growth and environmental concerns.

Keywords: Energy consumption, Globalization, BRICS.

A Path of Resilience Through Kenji Miyazawa's Stories and Poems - An Approach to Understand Resilience as a value in Education.

Merry Ray

Abstract Kenji Miyazawa in his life has always walked through the path of harsh climate, ill people and seeing people struggling to fulfil their basic needs, he always believed in finding hope, solutions and working hard through thinking and reasoning. This paper focuses on identifying the elements, unique symbols and characters in stories written by Kenji Miyazawa. The stories here included Kenji Miyazawa's picture book series, which includes 10 books. His stories are categorized as children's literature, but the ideas of resilience it represents are universal to all existence, he has always recognized the narrow path among all the hurdles in life. The paper studies the content of stories taken from Kenji Miyazawa's collection and through content analysis of the stories understands resilience as a value in Education. Qualitative Methodology has been used for the study.

Keywords: Kenji Miyazawa, Characters, Education, Stories, Resilience.

Status of Female Workforce in Informal Gig-work In India

Dr. Mousumi Das and Deepali Debasmita

Abstract Post Covid Pandemic the world saw increasing participation of employment via digital modes thereby generating newer and newer forms of work models. One such work model is the emergence of Gig work based on app-based platforms. Broadly divided into two categories i.e. "crowd work" involving higher skills involving characteristics of formal work models but another is basically 'physical work' involving work on demand where digital platforms act as intermediaries. The present study basically attempts to study the 'Gender Dynamics', in gig economy of India as there is little/less studies on the behavioural aspects of choosing gig work by Indian female workforce. Participation of women in workforce in India has dropped from 32% (2005) to 21% (2019) and India not only ranks the lowest among BRICS countries but also has lowest female labour participation rate among South Asian Countries. Based on secondary sources of data collected from Niti Aayog and Ola Mobility Institution, this study tries to document the motivations and incentives that drives women workforce to adopt 'gig work' in food delivery, health care and some services post pandemic and describes the challenges and risks encountered by them.

Keywords: Gig economy. Labour participation rates, Gender Dynamics

CHARACTERISTICS AND PROPERTIES OF NANO-METAL OXIDE: A REVIEW

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Abstract: Nano-metal oxides have attracted significant attention in recent years due to their unique physical, chemical, and structural characteristics that differ greatly from their bulk counterparts. These nanomaterials exhibit enhanced surface area, improved thermal stability, tunable electronic properties, and remarkable optical and catalytic behavior. This review presents a comprehensive overview of the characteristics and properties of nano-metal oxides, including their structural, optical, electrical, magnetic, and chemical properties. The synthesis methods, size-dependent behavior, surface modifications, and their influence on performance in various applications such as catalysis, environmental remediation, energy storage, sensors, and biomedical fields are also discussed. The paper aims to provide a clear understanding of structure–property relationships in nano-metal oxides and highlights current challenges and future research directions in this rapidly growing field.

Keywords: Nano-metal oxides, Nanomaterials, Physical properties, Chemical properties, Optical properties, Structural characteristics

Preserving the Past in the Digital Era: The Role of VR/AR and Digital Archives

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ABSTRACT: In an age defined by rapid technological change, safeguarding cultural heritage has become both more challenging and more promising than ever before. Emerging tools: particularly Virtual Reality (VR), Augmented Reality (AR), and expansive digital archives are reshaping how we record, interpret, and engage with the past. This paper explores how these technologies intersect to create new possibilities for cultural preservation. VR and AR platforms allow users to step inside reconstructed historical spaces, interact with artefacts in three dimensions, and experience events or traditions that may no longer exist in physical form. These immersive environments do not replace conventional preservation methods but expand them, offering dynamic ways of learning and connecting with history.

At the same time, digital archives are becoming essential custodians of cultural memory. By storing manuscripts, images, oral narratives, and other fragile materials in digital form, they ensure long-term access that transcends geographical, political, and physical boundaries. Together, VR/AR technologies and digital archives form a complementary ecosystem: one preserves, the other animates.

However, their use also raises important ethical concerns. Questions of authenticity, representation, data ownership, and equitable access must be addressed to ensure that digital preservation does not unintentionally distort or exclude cultural voices.

This paper argues that when thoughtfully implemented, VR, AR, and digital archives have the power to transform cultural preservation, offering more resilient, inclusive, and engaging ways to keep human heritage alive in a fast-evolving digital world.

Keywords: Virtual Reality (VR), Augmented Reality (AR), Digital era, Cultural Heritage Preservation, Digital Archives, Authenticity

Emerging Trends and the Impact on Stress

ARPIT SHARMA

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Abstract: In order to investigate how new societal and technological trends affect psychological and physiological stress, this paper synthesizes recent literature and secondary data. Digitalization and technostress, social media exposures, the revolution in remote and hybrid work, anxiety related to climate change, and developments in sensing and artificial intelligence for stress detection and mitigation are some of the major trends examined. Through a methodical secondary-data approach (peer-reviewed reviews, meta-analyses, government/advisory reports, and high-quality empirical studies), we describe vulnerable populations, highlight innovations in measurement and intervention, and pinpoint the ways in which these trends either amplify or buffer stress. The results show that ecological threats (climate anxiety) and digital ecosystems (social media, always-on work culture, and information overload) are significant modern stressors, while job design and social support mediate the mixed effects of remote work. Wearable sensing and AI are developing at a rapid pace, which presents ethical and privacy issues as well as opportunities for detection and tailored intervention. We conclude with implications for policy, practice, and research.

Keywords: technostress, social media, remote work, climate anxiety, wearables, stress detection, mental health policy.

An Interstate Analysis of India's Water Sustainability

Sonika Redhu¹ and Dr. Pragati Jain²

Abstract: Water is necessary for all living forms on earth to survive; without it, there wouldn't be any life. Additionally, as the population and economy grow, so do society's water needs, but there is only a finite amount of water available. Therefore, in order for development to be sustainable, we need to be aware of the effects that a water scarcity may have on us. Therefore, the index approach, which makes it simple to understand and prioritise concerns related to water scarcity, is used in this article to try and determine India's level of water sustainability. The building of the index in this study is done using multistage PCA, where in six components, and additional proxies are used. The paper used different weighing schemes for constructing the final index. The environment, consumption, and access components of the index received the highest weights in the state-specific index, according to the study's findings. According to the index, Haryana performs the best, while Mizoram performs the worst. We must take into account the factor of water availability, accessibility, and sustainability in order to accomplish sustainable development. Any nation's socioeconomic development and economic expansion are both supported by water. This is a pioneer study that assesses the situation of water sustainability in India.

Keywords: PCA, Water management

Climate Change and Food Security in South Asia

Soniya Verma

Abstract This research paper examines the impact of climate change on food security in South Asia region (SAR). SAR is home to a larger population of vulnerable communities who rely heavily on agriculture for their livelihoods. Climate change is expected to exacerbate existing challenges such as water scarcity, soil degradation, and crop failure, thereby posing a significant threat to food security. The Research paper begins by presenting an overview of the status of food security in South Asia, stressing the differences that exist within and between nations. The paper then investigates the various ways in which climate change can negatively impact the food production, such as changes in temperature and rainfall patterns, increasing frequency of extreme weather events, and rising sea levels. Following that, the study delves into the numerous adaption measures that can be used to improve food security as against the challenge of climate change. These include better water management, the use of climateresilient crops, and the adoption of sustainable farming techniques. The study also explores the role of policies and institutions in assisting with adaptation and lowering susceptibility to climate change. Overall, the study emphasises the urgent need for action to address the challenge of climate change on South Asia's food security. It urges governments, civil society organisations, and the corporate sector to work together to implement effective adaptation methods and reduce vulnerability in the region.

Keywords: Climate change, food security, South Asia, agriculture, adaptation measures.

Impact of Climate Change on Rice and Wheat Productivity in India: ARDL Approach

Sonu Kumar Rajak and Dr. Divakar Sahoo

Abstract The present study examines the impact of climate change on rice and wheat productivity in India using time series data (1970-2020) from different sources. This study uses climatic factors, such as temperature, precipitation, CO₂ emission, and non-climatic factors such as agricultural credit, rural population, and fertilizer consumption as the independent variables and rice and wheat productivity as the dependent variables. To check Stationarity, Unit Root Test ((ADF, PP, and KPSS) will be used. Further, the study employs the (ARDL) bound test to explore the long-run the Granger Causality Test for short-run interactions. Findings of the study show that CO₂ emissions have a positive impact and other climatic variables have a negative impact on crop productivity. Moreover, precipitation, agricultural credit, rural population, and fertilizer consumption has positively impacted to crop productivity in India. For robustness of results, the current study applies the FMOLS. In addition, to analyse the stability of the model, this study uses the CUSUM, CUSUM square method. It is concluded that climatic factors have a more adverse effect on rice and wheat productivity in comparison to non-climatic factors. Based on our findings, the present study recommends that policymakers to incorporate climatic variables with other non-climatic variables along with farmers' adaptive capacity, when formulating their policies.

Keywords: Climate change, agricultural productivity, ARDL, time series.

Production Risk Diversification: Identifying Security, Risk-Management & Human Factors (SRM-HF) for Indemnifying Farmer's Income

Srishti Saxena and Manju Singh

Abstract Several working group assessment reports have suggested that the production risks arising from the climatic shocks have impacted the rural community on scientific, technological, environmental, economic, and financial fronts. The production risk is a significant hurdle preventing farmers from achieving optimum income. Indemnifying and stabilizing farmers' income through diversification is essential to realizing the goals of building a climate-adaptive rural community. The research article aims at identifying the Security, Risk-Management and Human Factors (SRM-HF) that indemnify the farmer's income. A detailed SLR and meta-analysis are conducted in the study according to the PSALSAR Framework. The major objective is to identify the potential SRM-HF from the relevant studies using the databases like Springer, Google Scholar, Scopus, and Web of Science. The factors are further analysed based on their quantum of impact on the indemnification of income using MICMAC Analysis. The objective is to classify the factors into cluster categories –Security, Risk-Management & Human Factors. The study provides a list of reliable and validated factors that are critically reviewed and the factors act as the barriers and enablers to mitigation and diversification of the production risk. Identifying and clustering the factors has helped strategize the recommendations for indemnifying the farmer's income against the production risks. The study has developed a framework for the factors that impact asset management in light of the increasing production risks. The study creates awareness of the security, risk management, and Human factors that influence the stakeholders of the rural asset management hierarchy. Thus, it suggests the pointers of the recommendations in ensuring sustainable agriculture.

Keywords: SRM-HF, Production Risk, Indemnifying Farmer's Income, Risk Diversification, MICMAC Analysis.

Financing the Sustainable Development Goals for Water and Sanitation Program

Sushree Prangyan Dash

Abstract This article explores the financing of sustainable development goals through the budget process to achieve sustainable development in an economy. Sustainable development goals indicate the all-round development of the economy and through the budget process, we can imagine the development forecasting. Underfunding can be seen across all areas of Odisha, which results in municipalities that cannot function properly and look after the needs of their inhabitants. This requires an assessment of various policy scenarios taking into account economic capacity (as defined by GDP) as well as the level of public expenditures and affordability at a household level. This paper is prepared to guide the strategical change in the budget scenario, affordability, and feasibility of the SDGs on water and sanitation in Odisha. As per the recovery policy, public resources should be utilized more and even for the public the development should be more thorough the budgetary revolution. The findings indicate that for achieving sustainable development goals, the focus of the local government is to be more, and through the help of local government the issue can be resolved. The main focus is to shift the budgetary work from basic services to creating and facilitating an environment suitable for achieving sustainable development. If the emphasis on municipal spending does not change, governments will find it difficult to achieve sustainable development goals. In turn, our model studies show that countries, where the fiscal deficit is below 3% of GDP, can implement a sustainable development policy more effectively, thus promoting competitiveness, instead of the periodic shocks and budget cuts that accompany remedial processes and procedures to alleviate excessive deficits.

Keywords: Sustainable Development Goals, Budget, Water & Sanitation, GDP, Municipal Spending, Local Government.

Sustainable Economic Development Through Doughnut Economics Model

Vincent, Srimayee, Kashyap and Vijayasree

Abstract This paper focusses on the sustainable development in the economic division. Sustainable development refers to the development that satisfies the needs of the people, by saving them for the future generations too. Sustainable development mainly depends on three aspects which are Social, Economic and Environmental. In this paper, we have worked on a visual model of sustainable economic development called “Doughnut Economics”. The main problem that we have studied in this paper is to check how effective the implication of “Doughnut Economics” in select cities like Amsterdam, Brussels, etc. We’ve worked on the current implication of this model on the city scale. We further tried to research whether this model is feasible or not feasible to be implemented in developing and under-developed countries. The data was collected from secondary sources, and have referred to some research works, books, journals and publications to get the information. This research work provides the results of implementation of “Doughnut Economics” in various cities. How it helps in Sustainable Economic Development. It gives us the information whether it is applicable to Indian country to obtain good results. Will it be feasible for developing and under-developed countries to follow this model? The implications with “Doughnut Economics” were that implementation of this model worldwide was highly difficult. Another challenge was that even though it is implemented successfully, up to which extent it will be helpful is the concern.

Keywords: Sustainable Economic Development, Doughnut Economics, Developed, Developing, Under-developed countries.

Long-Term Relationship between Cryptocurrency and Other Financial Assets

Vishwabandhu Bharti, Dr. Sanjay Kumar, Satyaban Sahoo and Dr. Nishtha Kesswani

Abstract This study investigates the long-term relationship between Bitcoin and other financial assets: Gold, Crude Oil, and S&P 500. The daily closing value of all four assets is collected for the period starting from 1st January 2015 to 28th February 2023. The collected series has been tested for the evidence of unit root using the ADF and PP tests. Johansen's co-integration test is applied to determine the long-term relationship among financial assets. Further, the Granger causality test is applied to determine the short-run causal relationship. The ADF and PP test result indicates that all series are stationary at their first difference, and all are integrated at order one. Johansen's co-integration test shows no long-term relationship among the four financial assets. The VAR Granger causality test indicates that Bitcoin, Gold, and S&P 500 Granger cause the price movements of Crude Oil. S&P 500 also granger causes the price movements of Gold. However, S&P 500 was only caused by Bitcoin. Another important observation is that any other financial assets do not cause the financial assets of Bitcoin. The existence of no long-run relationship indicates the room for portfolio diversification among these financial assets. The investors are advised to track the price movements S&P 500 and rebalance their portfolio accordingly.

Keywords: Cryptocurrency, Granger causality, portfolio, co-integration.

Argentic AI: Smart Agent - Autonomous Agents in Agriculture in India

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Abstract: Argentic AI present scenario of technology Argentic AI systems is designed and develop to make decisions and handle complex situations in some cases autonomously take decision without human intervention like a digital human called as service professionals.

It is ability to data transforming into knowledge and knowledge into action which enhance work flow efficiency it uses sophisticated reasoning and iterative planning to solve complex and multistep problems

Advantages of argentic AI autonomy, goal oriented, feedback based improvement, problem solving creativity, adaptively and time and labour Challenges risks and drawbacks of argentic AI are security risks, unexpected problem attic behaviour, energy and resource cost, ethical and social concerns lack of human control

Autonomous agents are digital helpers to think and act independently give the new solutions to old farming problems have capabilities to solve the challenges in farms using AI and Machine learning

AgTech has promising to reset and reshape to enhance food production in innovative ways of the agricultural industry once again using autonomous agent in agriculture sector Data analytics has emerged in AgTech as a game changer in modern agriculture using AI and ML advanced algorithms which process large amount of data from various sources like whether patterns, market trends, soil testing soil health and more inputs to help the farmer determine the optimal time and plan to get max crop potentiality

भारत में वर्तमान समय के परिपेक्ष्य में मालदा के रेशम उद्योग एवं कृषि और व्यापारिक लाभ एवं आम व्यक्ति के उपयोग के संदर्भ में

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सारांश — वर्तमान समय के परिप्रेक्ष्य में Malda (पश्चिम बंगाल, भारत) के रेशम (रेशम-कृषि और व्यापार) उद्योग तथा उसकी कृषि और आम लोगों के उपयोग व अर्थ-व्यवस्था पर प्रभाव को दृष्टिगत रखते हुए।

मालदा का रेशम उद्योग — विरासत और महत्त्व

मालदा लंबे समय से भारत के प्रमुख रेशम उत्पादन केन्द्रों में से रहा है। पारंपरिक रूप से यहाँ सिल्क (रेशम) उत्पादन — विशेष रूप से मुलबरी (mulberry) आधारित सेरिकल्चर — ग्रामीण परिवारों की आजीविका का स्तम्भ रहा है।

अनुसन्धान और आँकड़ों के अनुसार, मालदा में हजारों किसान और कामगार — भूमि-स्वामी व भूमिहीन दोनों — रेशम कीड़े पालने, रेशम कोण (cocoon) उत्पादन, रेशम कताई, यार्न (धागा) बनाने, तथा बुनाई-प्रक्रिया से जुड़े हुए हैं।

2025 में रेशम का मूल्य व लाभ

हाल ही में मालदा में सिल्क कोकून (cocoon) की कीमतों में उल्लेखनीय वृद्धि देखी गई है। 2025 की शुरुआत में — 40 किलोग्राम कोकून की नीलामी में किसानों को लगभग ₹26,000 मिले — यह पिछले कई वर्षों में अब तक की सबसे अधिक दर रही।

कृषि, ग्रामीण अर्थव्यवस्था व आम जनता पर असर

आजीविका एवं रोजगार: रेशम-कृषि और उससे जुड़े पूरा चक्र — सिल्क कीड़े पालना, कोकून उत्पादन, रीलिंग, यार्न, बुनाई आदि — ग्रामीण भारत में गैर-कृषि (non-farm) रोजगार के अवसर प्रदान करता है। खासकर उन परिवारों के लिए जिनकी जमीन छोटी है या जो भूमिहीन हैं। इससे खेतों के अलावा आय का अतिरिक्त स्रोत मिलता है।

महिलाओं एवं कमजोर वर्गों की भागीदारी: श्रमिक-कार्य में महिलाओं की हिस्सेदारी काफी होती है। इससे सामाजिक रूप से कमजोर या अल्पसंख्यक समुदायों की आजीविका सुनिश्चित होती है।

उपभोक्ता व वस्त्र-उद्योग: मालदा की रेशम से तैयार कपड़े, साड़ी, वस्त्र आदि गुणवत्तापूर्ण होते हैं। यदि सिल्क पार्क व अन्य इकाइयाँ सक्रिय हों तो आम लोग — देश के अन्य हिस्सों में रहने वाले — स्थानीय सिल्क उत्पाद आसानी से ले सकेंगे। इससे पारंपरिक हस्त-कला, बुनाई कौशल और सांस्कृतिक धरोहर को भी मजबूती मिलेगी

चुनौतियाँ और आगे के सुझाव

फिर भी, चुनौतियाँ अभी समाप्त नहीं हुई हैं। प्रमुख समस्या यह है कि अब तक मालदा में अधिकांश रूप में केवल रेशम यार्न (raw silk yarn) का उत्पादन होता है; वस्त्र निर्माण यानी कपड़ा तैयार करना, डिजाइनिंग, मार्केटिंग आदि का काम अन्य राज्यों पर निर्भर रहता है।

किसानों को सिल्क उत्पादन के लिए आधुनिक तकनीक, प्रशिक्षण, सिंचाई, मल्चुरी रियरिंग हाउस, अच्छी गुणवत्ता के सिल्क बीन (seed) उपलब्ध कराने की भी जरूरत है — ताकि उत्पादन स्थिर हो, गुणवत्ता बेहतर हो, और रुझान लंबे समय तक बना रहे।

निष्कर्ष:

मालदा का रेशम उद्योग — विशेष रूप से सेरिकल्चर — न केवल एक पुराना सांस्कृतिक व ऐतिहासिक व्यवसाय है, बल्कि आज विकास-और रोजगार-उन्मुख असली अवसर भी दे रहा है। यदि रेशम उत्पादन, रीलिंग, वस्त्र निर्माण, विपणन और निर्यात-सुविधाओं को अच्छी तरह जोड़ा जाए, तो यह उद्योग मालदा के ग्रामीणों, किसानों, बुनकरों और आम जनता — सभी को आर्थिक, सामाजिक और सांस्कृतिक लाभ दे सकता है।

वर्तमान में कोकून की कीमतों में वृद्धि, पुनरुद्धार की कोशिशों और सरकार-नीति की सक्रियता इस दिशा में सकारात्मक संकेत हैं। यह समय है कि मालदा अपनी रेशम विरासत को फिर से मजबूत बनाए, और इस धागे को किसी भटकती याद या गिरती उद्योग की कहानी नहीं, बल्कि सतत विकास और आत्मनिर्भरता की कहानी बनाए।

Mathematical Modeling and ANN-Driven Optimization of Food Processing Systems

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Abstract: The integration of Differential Calculus and Artificial Neural Networks (ANNs) provides a robust and innovative approach for optimizing food processing systems, which involve complex, nonlinear, and time-dependent physical, chemical, and biological transformations. Processes such as pasteurization, drying, extrusion, fermentation, sterilization, and freeze-drying require precise control of critical parameters including temperature, pressure, moisture content, viscosity, and reaction rates that directly impact product quality, safety, and shelf life. Differential calculus offers a rigorous mathematical framework to quantify instantaneous rates of change in these variables through derivatives and differential equations, enabling accurate modeling of heat and mass transfer, microbial kinetics, rheological transitions, and thermal gradients within food matrices. Mechanistic models derived from such equations provide valuable insight into how variations in process conditions influence essential product attributes such as moisture distribution, nutrient retention, texture, and sensory characteristics.

Despite the predictive power of calculus-based models, real-world food processing environments exhibit significant variability due to differences in raw materials, heterogeneous product structures, equipment-specific dynamics, and stochastic environmental conditions. Traditional analytical approaches alone are often insufficient to capture these complexities or to provide reliable real-time predictions. In this context, ANN serve as effective data-driven tools capable of learning complex nonlinear relationships from large, multidimensional datasets generated by sensors, IoT devices, laboratory measurements, and historical production records. ANNs can accurately predict key outcomes, including final moisture content, colour, texture, microbial load, yield, and energy usage. Their adaptive learning capabilities enable continuous

refinement of predictions as new data become available, facilitating dynamic, real-time optimization beyond the capabilities of conventional statistical models.

The combination of results in a hybrid optimization framework that merges mechanistic understanding with data-driven intelligence. Differential equations model the fundamental physical and chemical dynamics of food processes, while ANNs capture variability, nonlinear interactions, and real-world uncertainties. This synergy enhances predictive accuracy, supports optimization of critical process parameters—including drying kinetics, thermal schedules, fermentation rates, and energy consumption—and enables intelligent process control.

Furthermore, integrating gradient-based optimization from calculus with back propagation facilitates automated process adjustments, predictive maintenance, and real-time decision-making. This hybrid approach reduces energy consumption, minimizes production waste, maintains consistent texture and flavor, ensures microbial safety, and promotes sustainable processing practices. It aligns with Industry 4.0 principles by enabling digital twins, sensor-driven monitoring, and intelligent, adaptive control in modern food manufacturing systems.

In conclusion, combining differential calculus with ANN offers a transformative methodology for food processing optimization. By integrating mechanistic modeling with adaptive learning, this approach enhances predictive accuracy, improves operational efficiency, ensures product consistency, and supports sustainable, precision-driven food production. The hybrid framework provides a pathway toward intelligent, energy-efficient, and quality-focused manufacturing systems, advancing both research and industrial practice in modern food processing.

Keywords: Differential Calculus, ANNs, Food Processing Optimization, Heat Transfer, Moisture Control.

The Role of Conic Sections in Machine Intelligence

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Abstract: Conic sections comprising circles, ellipses, parabolas, and hyperbolas are fundamental geometric constructs with far-reaching applications in mathematics, physics, engineering, and computational sciences. In the field of machine learning and artificial intelligence, these shapes offer valuable insights into data representation, feature relationships, and algorithmic optimization. This paper explores the mathematical principles underlying conic sections and demonstrates their relevance across key machine learning algorithms, highlighting how geometric understanding can enhance model interpretability, predictive accuracy, and overall performance. In Support Vector Machines (SVMs), conic sections provide a geometric perspective for understanding hyper planes and margin maximization. Both linearly separable and non-linear datasets can be interpreted through conic surfaces, which facilitate visualization of decision boundaries in high-dimensional spaces. This geometric framework aids in comprehending the role of support vectors, kernel transformations, and margin optimization, improving classification and regression outcomes.

In Principal Component Analysis (PCA), ellipsoidal contours describe the variance and covariance structure of multivariate datasets. The axes and orientation of these ellipsoids identify directions of maximum variance, enabling effective dimensionality reduction, feature selection, and noise suppression. Viewing PCA through the lens of conic geometry provides a clear visual understanding of data distribution and enhances the identification of principal components for downstream machine learning tasks. Conic sections also play a significant role in clustering algorithms, such as K-means and Gaussian Mixture Models, where clusters often approximate elliptical or hyperbolic shapes in feature space. Recognizing these geometric patterns allows for

more accurate cluster identification, better selection of similarity metrics, and improved evaluation of cluster separability. Similarly, in neural networks, quadratic forms inspired by conic sections can describe local curvature in loss landscapes, providing insights into gradient behaviour, convergence rates, and training stability.

By leveraging the geometric properties of conic sections, machine learning practitioners gain both theoretical clarity and practical optimization. This approach helps in selecting suitable algorithms, tuning hyper parameters effectively, and enhancing predictive performance across classification, regression, clustering, and dimensionality reduction tasks. Visualizing data using conic contours improves interpretability, especially in high-dimensional datasets where linear projections are insufficient. Overall understanding and applying conic sections in machine intelligence bridges classical geometry with modern computational methods. This integration provides a unified framework for analyzing data structures, optimizing algorithms, and improving model transparency. The insights gained from conic geometry contribute to more efficient, interpretable, and accurate machine learning models, demonstrating that foundational mathematical principles remain highly relevant in advancing intelligent systems.

Keywords: Conic Sections, Machine Intelligence, Support Vector Machines (SVM), Principal Component Analysis (PCA), Clustering Algorithms, Dimensionality Reduction, Neural Networks

“SPORTS SCIENCE, FITNESS, AND WELLNESS: A MODERN PERSPECTIVE”

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Abstract: Sports science, fitness, and wellness have evolved dramatically in the 21st century due to advancements in technology, physiology, psychology, and public health research. This paper presents a modern, holistic perspective on how contemporary science enhances athletic performance, prevents injuries, promotes physical fitness, and fosters overall well-being. It explores the integration of biomechanics, exercise physiology, sports nutrition, sports psychology, and data-driven performance analytics in shaping today’s fitness practices. Additionally, the study reflects on global lifestyle challenges such as sedentary behavior, stress, obesity, and the rise of chronic diseases, emphasizing the increasing importance of wellness-oriented behavior among both athletes and the general population. Modern fitness trends including personalized training, wearable technology, digital health platforms, functional fitness, and integrated mind-body practices are critically analyzed. The paper also highlights the importance of community health programs, school-level sports initiatives, and the role of government policies in promoting active lifestyles.

By synthesizing current research and practical approaches, this paper underscores the essential role of sports science and wellness in creating healthier societies and enabling peak human performance.

Ultimately, it advocates for a multidisciplinary, evidence-based, and sustainable perspective to foster lifelong health, fitness, and holistic well-being.

Keywords: SPORTS SCIENCE, FITNESS, WELLNESS, MODERN PERSPECTIVE

मानव अधिकार और सामाजिक न्याय: एक सार

(डॉ० दीपा चौहान)

असिस्टेंट प्रोफेसर राजनीति विज्ञान विभाग

मानव अधिकार और सामाजिक न्याय दो अंतर-संबंधित अवधारणाएँ हैं जो एक न्यायपूर्ण और समान समाज की नींव रखती हैं। मानव अधिकार वे मौलिक अधिकार और स्वतंत्रताएँ हैं जिनके हकदार सभी मनुष्य सिर्फ इसलिए हैं क्योंकि वे मनुष्य हैं, उनका जन्म, जाति, लिंग या राष्ट्रीयता कुछ भी हो। इनमें जीवन का अधिकार, स्वतंत्रता, समानता, और भेदभाव से मुक्ति शामिल है। ये अधिकार व्यक्ति की गरिमा और उसके पूर्ण विकास के लिए आवश्यक हैं। दूसरी ओर, सामाजिक न्याय यह सुनिश्चित करने से संबंधित है कि समाज के सभी सदस्यों के पास संसाधनों, अवसरों और शक्ति का उचित वितरण हो। इसका उद्देश्य समाज में मौजूद असमानताओं और अन्याय को दूर करना है, विशेष रूप से उन समूहों के लिए जो ऐतिहासिक रूप से वंचित या उत्पीड़ित रहे हैं। मानव अधिकार की सार्वभौमिक प्रकृति और सामाजिक न्याय की समाज-विशेष आवश्यकता पर जोर दें। मानव अधिकार को व्यक्ति की गरिमा के न्यूनतम मानक के रूप में परिभाषित करें, जबकि सामाजिक न्याय को इन मानकों की प्राप्ति की प्रक्रिया के रूप में। यदि स्वास्थ्य का अधिकार (मानव अधिकार) है, तो सभी को गुणवत्तापूर्ण और सस्ती स्वास्थ्य सेवा प्रदान करना (समान वितरण) सामाजिक न्याय है। यह तर्क दें कि एक-दूसरे पर निर्भरता क्यों महत्वपूर्ण है। अन्याय (जैसे जाति या लिंग आधारित भेदभाव) सीधे तौर पर मौलिक मानवाधिकारों (जैसे समानता, गरिमा) का उल्लंघन है। इसलिए, सामाजिक न्याय के बिना मानव अधिकारों की बात अधूरी है। शोध का उद्देश्य और प्रश्न: अपने उद्देश्य को 3-4 बुलेट बिंदुओं में स्पष्ट करें (जैसे: भारत में दोनों अवधारणाओं के मध्य संबंधों का आलोचनात्मक विश्लेषण करना; संरचनात्मक हिंसा की पहचान करना; नीतिगत अंतराल पर प्रकाश डालना)। मानवाधिकारों की तीन पीढ़ियाँ (नागरिक/राजनीतिक, आर्थिक/सामाजिक/सांस्कृतिक, एकजुटता/विकास)।

मध्य काल के बदलते राजनीतिक परिदृश्य सल्तनत और मुगल काल में भू-राजस्व नीति का समाज और अर्थव्यवस्था पर प्रभाव

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सारांश

यह लेख दिल्ली सल्तनत की स्थापना अर्थात् तुर्कों के आगमन तथा उसके पश्चात् मुगलों के शासन के दौरान भू-राजस्व नीतियाँ अपनाई गईं उसका उस दौर की समाज और अर्थव्यवस्था पर क्या प्रभाव पड़ा इसकी पड़ताल करता है।

सल्तनत काल

1. सल्तनतकालीन शासन-प्रणाली अपनी पूर्ववर्ती शासन प्रणाली अर्थात् राजपूत सामंती समाज) से गुणात्मक दृष्टि से भिन्न थी और इसने ऐसी सामाजिक क्वितियों को जन्म दिया जिन्होंने पहले की तुलना में काफी बेहतर आर्थिक व्यवस्था का निर्माण किया।
2. एक ऐसी प्रणाली की स्थापना हुई जिसके द्वारा कृषि अधिशेष का एक बड़ा हिस्सा शहरों में खपत के लिए हस्तगत कर लिया जाता था। व्यापक स्तर पर अधिशेष के इस वि-नियोजन ने 13 वीं सदी की सल्तनत के आर्थिक आधार को कमजोर कर दिया क्योंकि इसने अमीर वर्ग को बराबर शहरी महाजनों के ऋण पर निर्भर बना दिया।
3. एक शहरी मुस्लिम हस्तकार वर्ग का उदय हुआ जो जाति प्रथा के कठोर बंधन से मुक्त था और इसने भारतीय हस्तकारी उत्पादन व्यवस्था में प्रतिद्वंद्विता तथा गति-शीलता के रूप में एक महत्वपूर्ण तत्व का संयोग किया।

4. सल्तनत काल में आधुनिक अर्थ में कोई क्रांति संपादित नहीं हुई, वरन् कृषि कोशण की एक नवीन प्रणाली विकसित हुई, जिस पर परजीवी किस्म का गहरी विकास आधारित था।
5. किसानों की स्थिति अर्घदास जैसी बनी रही।

मुगल काल

1. 16वीं - 17वीं सदी में भारतीय अर्थव्यवस्था मूलतः कृषि प्रधान थी। दूसरे शब्दों में, कृषि के अलावा दूसरे आर्थिक नेत्रों - जैसे - व्यापार, लघु उद्योग आदि में अत्यधिक बढ़ोतरी के बावजूद इस समय की आर्थिक गतिविधियों का और समाज के अधिकतर वर्ग अपनी आय के लिए उसी पर आश्रित थे।
2. भारत के मुगलों से पहले की तीन शताब्दियों के मुस्लिम शासन के अंतर्गत आर्थिक स्थितियों में कई मूल परिवर्तन आए थे। मुगलों द्वारा इन आर्थिक स्थितियों में कोई आकस्मिक अथवा अमूल परिवर्तन नहीं लाया गया बल्कि उन्होंने एक दृढ़ और केन्द्रोन्मुख साम्राज्य की स्थापना करने के प्रयास में बहुत सारी परिस्थितियों एवं प्रक्रियाओं को संस्थाओं की नियमितता प्रदान की। इसी प्रयास का प्रभाव जीवन के विभिन्न पहलुओं पर पड़ा और उसका एक रूप हमें तत्कालीन अर्थव्यवस्था में भी देखने को मिलता है।
3. खेती की पैदावार का जो अधिशेष जोतने वाले से लिया जाता था उसका बँटवारा मुख्य रूप से बादशाह, जमींदार और जागीरदार के बीच होता था। मुगल राजस्व-व्यवस्था इस प्रक्रिया को ही सुगम एवं सुव्यवस्थित बनाने का एक प्रयास थी।
4. उक्त व्यवस्था के अन्तर्गत काशतकारों का उत्पीड़न निरंतर बढ़ता ही रहा जिसके कारण काशत में कमी आई और इसके कारण अंततः भू-राजस्व की मात्रा कम हुई जो राज्य की आय का मुख्य आधार थी।

EFFICIENT ALGORITHMS FOR HUFF ELLIPTIC CURVES USING VEDIC MATHEMATICS

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Abstract

This paper presents efficient algorithms based on Ancient Indian Vedic Mathematics (AIVM) to optimize the computational performance of point addition and point doubling operations on Huff Elliptic Curves (HEC), Generalized Huff Elliptic Curves (GHEC), and New Generalized Huff Elliptic Curves (NGHEC). To accelerate arithmetic operations, the Dvandva-Yoga sutra is employed for fast squaring, while the Urdhva-Tiryagbhyam sutra is used for high-speed multiplication. The proposed AIVM-based algorithms significantly reduce the time complexity involved in elliptic curve computations. Experimental evaluation, carried out through MATLAB implementations for 8-bit and 16-bit multiplication and squaring operations, demonstrates superior performance of the Vedic-mathematics-based approach compared to conventional methods. The results show a notable improvement in processing speed, reduced computation delay, and lower power consumption. The impact of the AIVM techniques on Huff-curve operations has been thoroughly analyzed, and the findings are presented through comparative tables and graphical illustrations. Overall, the proposed methods offer an effective and high-performance solution for enhancing arithmetic operations in Huff-based elliptic curve cryptography.

Key Words: Urdhva-tiryagbhyam technique, Dvandva-yoga technique, Huff Elliptic Curve (HEC), Generalized Huff Elliptic Curve (GHEC), New Generalized Huff Elliptic Curve (NGHEC)

Mathematics Subject Classification: 94A60, 14G50

Fuzzy Edge Graceful Labeling on Double Wheel Graph

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Abstract: A graph G is said to be gracefully labeled if it admits a graceful numbering. A graph that allows a fuzzy graceful labeling is referred to as a fuzzy graceful graph. In this paper we introduce the notion of fuzzy edge graceful labeling for the double wheel graph and illustrate the concept through suitable example.

Keywords: Fuzzy Labeling Graph, Graceful Labeling, Fuzzy Graceful Labeling, Fuzzy Edge Graceful Labeling.

A REVIEW OF MATHEMATICAL APPLICATIONS IN SOCIOLOGY

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ABSTRACT: The field of mathematical sociology has expanded significantly since it was founded in the 1960s. It now has an astonishing range and addresses current issues with social structure and social transformation. Today's sociological applications of mathematics stand out for their movement towards a synthesis of process, structure, and action. This synthesis can strengthen its significance for sociology in general by combining it with a focus on social mechanisms as well as issues with causality and temporality. The article discusses new developments and significant sociological research areas in modern sociology that make use of computer modelling, logic, and mathematics.

Key Words: Mathematical Models, Rational Choice, Social Mechanisms, Social

Effect of past stretching sheet with constant wall temperature Under the heat transfer flow on nano fluids by using Legendre Wavelet Method

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Abstract: This study analyses the effect of partial slip boundary conditions on the boundary-layer flow and heat transfer of nanofluids over a stretching sheet exposed to a constant wall temperature. The nanofluid model accounts for Brownian motion and thermophoresis effects, which are crucial in modelling the dynamics of nanoparticle transport. Through classical similarity transformations, the governing conservation equations are reduced to a coupled system of nonlinear ordinary differential equations. However previously used numerical approaches, the present work uses the Legendre Wavelet Method (LWM) as an efficient and correct semi-analytical technique for solving the transformed equations. The impacts of key dimensionless parameters— including the slip factor, Brownian motion parameter, Prandtl number, Lewis number and thermophoresis parameter—on the temperature, velocity and nanoparticle concentration fields are examined in detail. The results shows that the slip boundary condition substantially changes the flow structure, surface shear stress, reduced Nusselt number, and reduced Sherwood number. To the best of the authors' knowledge, this study represents the first application of Legendre wavelets to nanofluid slip-flow problems include the dynamic effects of nanoparticles over a stretching sheet.

Keywords: Nanofluid, Legendre wavelet Method, Boundary layer flow, Stretching sheet, Similarity transformation, Thermophoresis, Heat and mass transfer, Partial slip boundary condition, Constant wall temperature, Brownian motion

AN EFFICIENT ALGORITHMIC APPROACH TO HUFF ELLIPTIC CURVES USING VEDIC MATHEMATICS

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Abstract: This paper presents efficient algorithms based on Ancient Indian Vedic Mathematics (AIVM) to optimize the computational performance of point addition and point doubling operations on Huff Elliptic Curves (HEC), Generalized Huff Elliptic Curves (GHEC), and New Generalized Huff Elliptic Curves (NGHEC). To accelerate arithmetic operations, the Dvandva-Yoga sutra is employed for fast squaring, while the Urdhva-Tiryagbhyam sutra is used for high-speed multiplication. The proposed AIVM-based algorithms significantly reduce the time complexity involved in elliptic curve computations. Experimental evaluation, carried out through MATLAB implementations for 8-bit and 16-bit multiplication and squaring operations, demonstrates the superior performance of the Vedic-mathematics-based approach compared to conventional methods. The results show a notable improvement in processing speed, reduced computation delay, and lower power consumption. The impact of the AIVM techniques on Huff-curve operations has been thoroughly analyzed, and the findings are presented through comparative tables and graphical illustrations. Overall, the proposed methods offer an effective and high-performance solution for enhancing arithmetic operations in Huff-based elliptic curve cryptography.

Key Words: Urdhva-tiryagbhyam technique, Dvandva-yoga technique, HEC, GHEC, NGHEC

Panchayati Raj System in Haryana: A Critical Study

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ABSTRACT: The idea of Panchayati Raj system has been prescribed in the Preamble of our Constitution which speaks about the right of liberty of thought and expression, equality of status and of opportunity, fraternity as well as liberty to participate in all types of functions and to have faith in any religion. This right has been given to all the citizens of the country irrespective of their place of residence, caste and religion. In our democratic setup, people have the say in decision making bodies both at top and lower level. They can participate in the Government at top level indirectly through their elected representatives while at the lower, they can participate directly at Panchayat level, where elected representatives can participate by identifying villagers needs, prepare micro level plans and be instrumental in implementing such plans. By introduction of 73rd Amendment of the Constitution, the term Panchayati Raj came into existence with constitutional status, which implies creation of local government institutions at the village, block and district level. In Haryana, the Panchayati Raj is now competent as a machine of governance wherein Gram Panchayat is the clean system of network management. The system has three tiers, i.e. Gram Panchayat at village level, Block Samiti or Panchayat Samiti at block level and Zila Parishad at District level. These bodies play an important role in rural administration in the present time as the emphasis of Government is on welfare of masses. Entrusting power at grass root level means empowering these bodies and making them more democratic.

Key Words: Constitution, Panchayat, Governance, Rural development, Representative

Alimony and Maintenance Laws in India: Equity versus Exploitation

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Abstract: India's alimony and maintenance laws represent a complex intersection of social justice, economic equity, and gendered power dynamics. This paper undertakes a comprehensive analysis of alimony and maintenance laws in India, examining their foundational purpose of ensuring financial security and preventing destitution (equity) against the backdrop of persistent challenges related to potential misuse, inherent gender biases, and enforcement deficiencies (exploitation). The Indian legal framework, a complex mosaic of personal laws and secular statutes, has evolved significantly, particularly through judicial pronouncements that have sought to adapt these provisions to changing socio-economic realities. While designed as instruments of social justice, the practical application of these laws often presents a dialectic between their protective intent and unintended negative consequences. This report delves into the historical trajectory, detailed legal provisions across various religious communities, and pivotal landmark judgments that have shaped contemporary jurisprudence. It critically examines how the system strives for fairness while simultaneously grappling with allegations of inflated claims, malicious litigation, and the complexities arising from evolving gender roles and women's economic independence. The analysis culminates in actionable recommendations for legislative and judicial reform, advocating for enhanced gender neutrality, streamlined procedures, robust financial disclosure mechanisms, and a continuous evolution in judicial understanding to foster a more balanced, transparent, and genuinely equitable maintenance regime in India.

Keywords: Alimony, maintenance laws, equity v. exploitation, social justice, gender bias

**THE RESILIENT GRAIN: RISING IMPORTANCE OF MILLETS IN
CONTEMPORARY AGRICULTURE — A GEOGRAPHICAL STUDY OF CLIMATE
RESILIENCE AND FOOD SECURITY**

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Abstract: Haryana's agricultural system is experiencing a geographical crisis characterized by extreme Blue Water stress, which is a result of the Green Revolution's legacy and skewed policy incentives. The most obvious and practical approach to return to sustainability is through the cultivation of millets, the native climate-resilient crop of the area. A sustainable paradigm that bases agricultural decisions on ecological constraints (water availability) must replace the current unsustainable Human-Environment Interaction, where policies permit human exploitation of the environment without repercussions (millet cultivation). Water scarcity, widespread micronutrient malnutrition, and climate change pose serious threats to the world's agricultural system. The growing significance of millets—such as sorghum, finger millet, and pearl millet—as essential tools for boosting food security and climate resilience in the Anthropocene is examined in this geographic study. The study examines the nutritional density, low environmental effect, and spatial adaptability of millets in comparison to the three main staple crops grown worldwide (rice, wheat, and maize) using the Water Footprint concept and Agricultural Geography. The research experimentally confirms millets' geographical advantage by using GIS-based spatial correlation analysis between established climate sensitivity and hydrological stress indices and worldwide millet production zones. The results verify that millets are a vital stabilizing component in the Semi-Arid Tropics (SAT) and provide improved water-use efficiency. The study comes to the conclusion that in order to promote truly sustainable and climate-proof food systems, millets must undergo a global geographical change in agriculture policy that aligns financial incentives with ecological requirements.

Keywords: Millets, Climate Resilience, Food Security, Agricultural Geography, Water Footprint, Semi-Arid Tropics (SAT), Hydrological Stress, Sustainable Agriculture, Nutritional Geography, Global Warming.