

## SUSTAINABLE INDIA INTERNATIONAL CONFERENCE (SIIC) - II

Morality, religion and politics are indispensable to achieve the end of general welfare, nation building and international peace. Ethics of Sri Aurobindo thought stands the test of time for its universal character. Sri Aurobindo makes the individual mediate on the millions of dispossessed. Human beings should think about the general human interests and misery instead of concentrating on their own selfish interests. He makes the individual discover truth by thinking of his neighbour, who represents humanity in miniature. In this context, Sri Aurobindo's teaching and philosophy is of utmost importance if human beings want to live in peace and harmony. He is relevant in the twenty-first century where science and spirituality must go side by side. The scientific development which is putting value only in materialistic progress will not be able to achieve permanent peace in the world; simultaneously it is necessary to uplift human beings through spirituality. He emphasizes on spiritual freedom and spiritual oneness.

Dr. Samarendra Mohan Ghosh is a Founder Trustee of Sri Aurobindo Yoga and Knowledge Foundation, India and working as a Director of the initiative of THE PROGRESS. He is Doctorate in Computer Science and along with him team including the global Scientists and Engineers advising, promoting and creating awareness towards Sustainable Development Goals.



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Samarendra Mohan Ghosh

## SUSTAINABLE INDIA INTERNATIONAL CONFERENCE (SIIC) - II

Future Innovation and Sustainable  
Development for Asian Countries

**Samarendra Mohan Ghosh**

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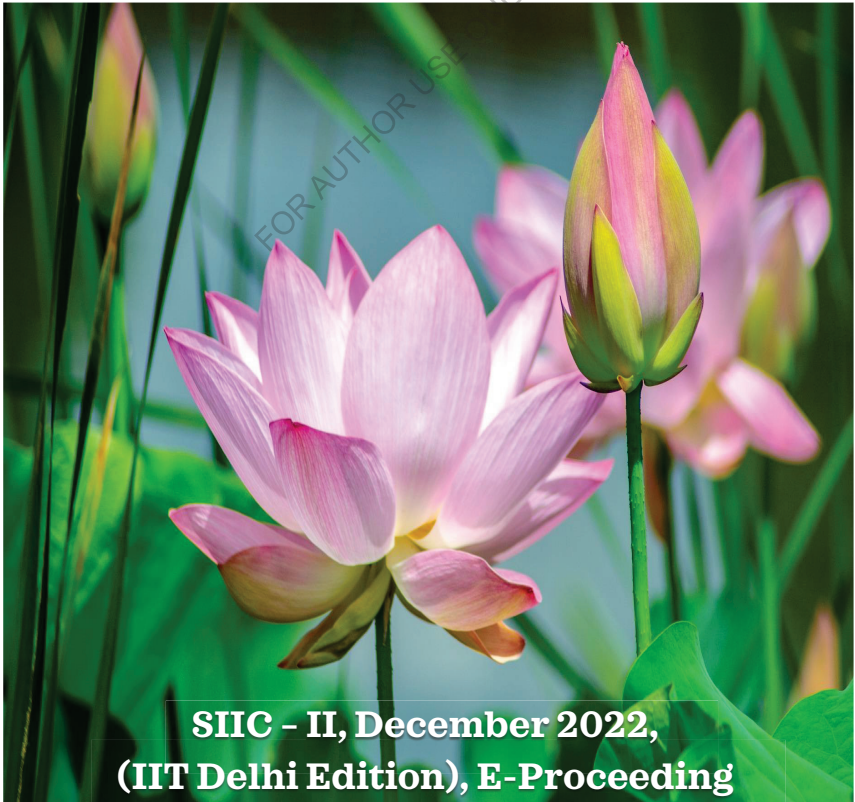
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**SUSTAINABLE INDIA  
INTERNATIONAL CONFERENCE  
(SIIC) - II**

*Future Innovation and Sustainable  
Development for Asian Countries*



**SIIC - II, December 2022,  
(IIT Delhi Edition), E-Proceeding**

*“The world is preparing for a  
big change, will you help?”*

*~The Mother, founder of Auroville*



**E-Proceeding design by Toshita Sahni**

# INTERNATIONAL CONFERENCE

on the theme:

***“Future Innovation and Sustainable  
Development for Asian Countries”***

At the Indian Institute of Technology (IIT),  
New Delhi, on 11<sup>th</sup> December 2022

*Presented by*

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## **MESSAGES FROM OUR ORGANIZING PARTNERS**



“It gives me a great pleasure to express my thanks to the organizing team of Sustainable India to conduct the first International Conference on “Issues and Challenges for Sustainable Development in Asian Countries” (SIIC – I) in September 2022. This conference will be a significant one and would provide a wonderful opportunity for the fellow educators and the research scholars to share and exchange their ideas in the recent advancements in Sustainability related issues in Asian countries. I sincerely hope that the dialogue that will get generated at this conference will lead to the implementation of many new ideas in this direction and thus pave wave for further improvements. I am extremely happy that many international experts and delegates will be attending the conference to present their papers and also deliver keynote lectures and invited talks. May this event be an insightful and educational experience for all those who participate in this wonderful occasion. I wish the conference a grand success!”

~ *Dr. S. M. Ghosh*  
Managing Director of The Progress

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“Education is always a sign of development and learning. It should be research-oriented, helping society to create something new. Thinking in an innovative and new way is significant to cope with technological changes. This Conference provides a forum for scholarly discussion on advance computing. It is also relevant for exploring and searching various aspects of education through the appropriate application of information technology.

The response of contributors and likeminded people in the educational fraternity showing their keen interest in this conference is highly motivating. Presentation of such research papers is extremely beneficial for research scholars and stimulating factor for us to organize such conferences frequently in the future. I sincerely offer my earnest gratitude to those who have contributed through their research papers at the conference. I am sure that the conference would achieve its objective by providing a suitable platform for learning and experiencing the latest advancement in the field of industry. The cohesive efforts of a dedicated and committed team become necessary for organizing such conferences. We are fortunate enough for having such a hardworking team with us. I wish for the grand success of the conference.”

~ *Meenakshi Ramesh Patel*  
Co-founder/ Director of Sustainable India

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“Sri Aurobindo once said, “Evolution of consciousness is the central motive of terrestrial existence.”

With the concept of evolution comes the shift in consciousness. Sustainability starts from this shift in our thoughts and practices. Sustainable India, which is an initiative of Sri Aurobindo Yoga & Knowledge Foundation, is a socio spiritual organisation, with an intent to take action towards creating better livelihoods, opportunities and learning for all. We believe that Action can only be taken when there is Awareness. Working at the grassroots level to create space and awareness is our priority.

Finding and adapting technology and innovation that serves the greater purpose of creating a better experience for all species in existence should be the driving force for each one of us. Sustainability is not just a lifestyle, it’s a practice – a practice of gratitude to serve beyond and help everyone to grow with goodness. Every step taken towards the well-being of the planet as whole is an essential.

We must keep in mind that when we seek a shift from ego to gratitude, we will be able to establish a clean ecology in our society. A sustainable tomorrow starts from our awareness and the action that we take today.”

~ *Shubhangi Ghosh*  
Co-founder/ Director of Sustainable India

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“It is a matter of great pride that Sustainable India – an Initiative of Sri Aurobindo Yoga and Knowledge Foundation – is Organizing International Conference at IIT Delhi on topic “Future Innovation and Sustainable Development for Asian Countries” on 11th December 2022. Sustainable development is the organizing principle for meeting human development goals while simultaneously sustaining the ability of natural systems to provide the natural resources and ecosystem services on which the economy and society depend. The desired result is a state of society where living conditions and resources are used to continue to meet human needs without undermining the integrity and stability of the natural system.

I am thankful to be the part of this Conference and certainly the task that is getting carried over by Sustainable India is remarkable and my best wishes are always with them.”

~ *Dr. Namita Rajput*  
Aurobindo College

## **MESSAGE FROM OUR CO-ORGANIZERS**



We feel profound happiness to be the part of this International Conference as an Organizing partner with Sri Aurobindo Yoga and Knowledge foundation. As we all know that Sustainable development is one of the great challenges of the late 20th and the early 21st century. The world is facing the task to fairly and justly shape and distribute life chances of all people worldwide. One of the most popular definitions was given by the United Nations: Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. With regard to development trends associated with globalization, sustainable development has become one of primary goals of the global community.

The role of education and research, i.e., the role of universities, as key actors of these activities, is of vast importance. Dr. C. V. Raman University, Bilaspur have already become engaged in the process of integrating sustainable development in their activities, whether through campus "greening", development of special courses on sustainability, or offering collaborative research opportunities . However, sustainable development should become central academic and organisational focus of all universities in the future. Radical innovation rethinking within university in their internal organization and operation, as well as their interaction with external stakeholders are the most important prerequisites for reaching these goals. We are proud to see that SustainableIndia (Initiative of SAYKF) is trying to bring true Consciousness towards Sustainability among Higher Educational Institutions and Industries in Asian Countries. We wish them all the best for their endeavors for bringing transformation through collective effort and practices.

*~ Shri. Gaurav Shukla*  
Registrar, Dr. C. V. Raman University, Bilaspur, Chattisgarh

## **MESSAGE FROM OUR KNOWLEDGE PARTNER**



International Conference on “Future Innovation and Sustainable Development for Asian Countries” on 11th December 2022, Sunday at IIT, Delhi, India organized by Sri Aurobindo Yoga, Knowledge Foundation special initiative of Sustainable India and Jagannath International Management School, Vasant Kunj, New Delhi as Knowledge Partner is a platform to embrace people driven innovation, multi sectoral and interdisciplinary knowledge partnerships to promote innovations. In this competitive era, it is important for organizations to keep their pace with the changing

business environment.

Rapid economic growth frequently results in the devastation of the environment through the depletion of natural resources, the production of hazardous pollution, and the acceleration of global warming. The threat posed by climate change is existential. Another important dimension is the harm caused by increasingly frequent and severe natural disasters.

Asia and the Pacific is at the forefront of this existential challenge of Climate Change, in terms of both causes and consequences. Eight members of the Group of 20 from the Asia-Pacific region are responsible for approximately half of global greenhouse gas emissions. At the same time, the Asia-Pacific region has countries and communities that are among the most affected by the impacts of climate change and climate-induced disasters. Societies must redefine their relationship with nature and transition to greener, more resilient and sustainable development pathways in order to uphold the human right to a clean and healthy environment and safeguard the sustainability of the world for the benefit of all.

Additionally, nations in Asia and the Pacific might form a regional alliance to accelerate the transition to a low-carbon economy, phase out coal use, end subsidies for fossil fuels, implement carbon pricing, and promote renewable energy and improved energy efficiency. Countries must work to create and put into effect national legislation, as well as come to agreements and harmonize standards, share information, and take regional action.

Team experts, distinguished people from around the world and young emerging researchers have made valuable contribution for the success of the conference. We at Jagannath International Management School uphold our commitment to excellence in management practices and thought leadership. The successful organization of the conference was the dedication of the organizing team at Sri Aurobindo Yoga & knowledge foundation and Jagannath International Management School, Vasant Kunj, New Delhi.

Best Wishes!

*~ Dr. Ravi K. Dhar*  
Director, Jagannath International Management School, Vasant Kunj



## INSIGHTS FROM OUR ADVISORS

### **WHY RESEARCH ON SUSTAINABILITY?**

**Ramesh Bijlani**

(Sri Aurobindo Ashram – Delhi Branch, New Delhi)

Sustainable living is a relatively new but urgent concern, on which depends the survival of life on our planet. I do not know much about the subject of the conference, but I do know something about research. One of my favourite teachers, Professor N.K. Bhide, defined research as original and critical intellectual activity. All research starts, or should ideally start, with healthy curiosity, which is formulated into a question, or a set of questions. It would be hypocritical to say that the investigator knows nothing about the likely answers, and is totally unemotional about the answers that the research gives. The bias of the investigator is reflected in a hypothesis, and the dispassionate nature of honest research is wrapped up in the attitude that the investigator would be equally happy whether the hypothesis is confirmed or refuted by the proposed research. When the study has been carried out, it generates data. If the investigator is truly open to any outcome, the statistical tools chosen and the interpretation of the verdict of the tests applied would test the sincerity of the investigator. One can see here a need for the application of the teaching of the Gita that one is entitled only to the action, not to the outcome. One may expect a certain outcome, but should not be attached to the expected outcome. With this understanding, the spiritual seeker can accept any outcome with equal delight.

One of the most widely known quotes of Sri Aurobindo is “All life is yoga,” which means that everything in life is an opportunity for the practice of yoga. How is research an opportunity for yoga? All the way. Does the origin of research reside in genuine and healthy curiosity, or a worldly gain? Does the research seek to answer questions, the answers to which would matter? Are the collection and analysis of data unbiased and meticulous? Are the interpretation and presentation of the results totally unmotivated by personal prejudice or profit? Finally, is the outcome of research made freely available to those who can use it; in this case, for creating a life that helps sustainability in the modern world? Going within to make sure that the answer to these questions is ‘yes’ would be practicing yoga.

Research is a word that is both prestigious and trendy, and therefore likely to be used loosely. While one may capitalise on the current appeal of the word, it is necessary to stay sincere about the intention, process and outcome of research. Knowing those who are at the helm of affairs in Sustainable India, I am confident that the forthcoming conference will trigger much research that answers questions which are critical to the future of our planet.

# **OPTIMIZING PLANT DEVELOPMENT AND PHYSIOLOGY VIA INNOVATIVE GENOMICS APPROACHES FOR SUSTAINABLE FOOD SECURITY**

**Aashish Ranjan**

(Scientist, National Institute of Plant Genome Research, New Delhi)

The exponential population growth along with the limiting agricultural land and resources have raised serious concerns regarding the food security. There needs to be a substantial increase in crop yield and productivity to feed the growing world population. Moreover, nutritional content of the staple food crops also needs an enhancement to meet the Sustainable Development Goals (SDGs) of world health organization. Developing crop varieties in order to achieve greater yields along with increased nutritional value has been a major focus of plant biologists and breeders with a view to ensuring food availability for an increasing world population under changing environmental conditions.

The optimization of plant developmental traits, and thus overall physiological performance has great potential for sustainable increase in crop yield, as plant performance is strongly associated with, and dependent on, plant development and growth. The importance of plant developmental features in increasing crop yield potential became evident during the 'green revolution', when an unprecedented increase in yield was achieved by breeding for semi-dwarf varieties of rice and wheat. A number of plant features and traits, such as plant architecture, leaf morphological and anatomical traits, vascular architecture and flowering time, are important determinants of the overall performance of crop plants. These features can, thus, be considered part of a developmental module that dictates crop performance and yield. Thus, genetic manipulations that alter these developmental traits in a desirable way may mark a significant step forward in increasing crop yield. Engineering or breeding for developmental traits with the aim of improving photosynthetic efficiency, and thus yield, requires a thorough understanding of the genetic basis of these traits.

Innovative genomics approaches could be instrumental in deciphering the genetic basis of desirable developmental traits towards achieving sustainable increases in crop yield and productivity as well as nutritional enhancement. Harnessing the natural variation in key crop developmental traits via Genome-Wide Association Studies (GWAS) would provide the genetic loci and markers to be utilized in crop improvement programs. Similarly, dissecting the genetic mechanisms regulating a desirable trait via transcriptomics and proteomics approaches would provide the candidates for gene editing towards optimization of plant features for higher yield.

## **INNOVATIVE & SUSTAINABLE RESEARCH IN AGRICULTURE**

**Dr. Hemant Sood**

(Associate Professor, Department of Bt & BI, JUIT, Wagnaghat, Solan, HP, India)

The definition of "Sustainable Development" is described as development that satisfies current generational demands while not overusing or abusing natural resources in order to protect them for the coming generation. Sustainable development has three goals: first, "economic," which will help to achieve balanced growth; second, "environment," which will help to protect the ecosystem; and third, "society," which will ensure that all people have equal access to resources.

The fundamental tenet of sustainable development is the incorporation of environmental, social, and economic considerations into every decision-making process. The scenario of sustainable development envisions a future in which fundamental institutional changes take place and policy adopts an integrated approach to economic, social, and environmental goals with development as the overarching goal that "meets the needs of the present without compromising the ability of future. By gradually altering the methods we create and use technologies, sustainable development constantly motivates us to protect and improve our natural resources. Solar energy and crop rotation draws the main focus for sustainable development. But innovations in agriculture towards sustainable development is the most desirous target to be achieved globally by all nations.

In Agriculture innovation like Satellite Imaging using GPS takes advantages of AI and make crop control adaptive using weather prediction, temperature, and rain prediction. Hydroponics with Specialized Robots can be used for fine control in dry crops. Drones are used in precision agriculture where the optimized concentration of various fertilizers used for maximizing crop yield. Also, the optimized combination of water content, temperature, sunlight- and crop density can be found to maximise productivity. Drones are useful to spray fertilizers, water, pest control solutions in such remote areas. Also, the fruit collection, crop cutting etc can also be managed easily by advance AI and robotics with the help of drones and robots. True sustainable development acknowledges that human existence and wellbeing are inextricably linked to the health of the planet's natural systems.

## RESEARCH PAPER ABSTRACTS

### 1. IMPROVED SENTIMENT ANALYSIS FOR TEACHING EVALUATION FOR POST GRADUATE STUDENTS USING DEEP LEARNING TECHNOLOGIES

**Deepthi Singh Kshatriya<sup>1</sup> and Dr. Snehlata Barde<sup>2</sup>**

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This study helps to identify the strengths and weaknesses of the faculty based on the positive and negative feedback of the students in English or Hinglish. The proposed system provides qualitative data from teachers' quantitative data and emotional scores from numerical response scores in evaluation. It graphically represents the evaluation result with the percentage of positive and negative feedback of the students. This will create awareness among university administrators and teacher's student's feelings and concerns. Not only does this feedback provide useful insights to university administrators and instructors, it also plays an important role in influencing student's decisions about which universities to attend or courses to take. Our proposed sentiment analysis system helps improve the quality of teaching and learning by treating temporary emotions and feelings to assess multilingual students' perceptions of teacher effectiveness and course satisfaction.

**Keywords:** Sentiment Analysis, Deep Learning, Natural Language Processing, Teacher Performance Evaluation, Machine Learning

### 2. DATA ENCRYPTION USING CRYPTOGRAPHY FOR SECURE COMMUNICATION ACROSS NETWORK: A STUDY

**Mohan Manju<sup>1</sup> and Dr. Prof. Rajesh Kumar Pathak<sup>2</sup>**

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Human life is now heavily dependent on the internet and its applications, such as communication and the dissemination of information, files, and other media, due to the advancements of civilization. In this digital era, network security is a huge concern, specifically as we find ourselves keeping an exponential quantity of private and personal information online. The encryption strategy is used to protect the data in multimedia systems. Cryptography plays the crucial role for the crime analysis and the

way of law enforcement deals with cybercriminals. It is often used to secure communications, protect personal identifying information (PII) and other sensitive information, validate identity, prevent document manipulation, and create trust between servers. It is the basis of contemporary security systems. It is necessary for defending both privacy and the right to civil liberties. Encryption is extremely important for specific populations, such as human rights advocates, community activists, and human rights organizations, and it should be used in conjunction with other more traditional privacy protection technologies to keep individuals secure both online and in their daily lives. A company might benefit from the cloud provider's encryption capabilities when storing data there. The majority of cloud service companies include encryption as a services, either as part of their core offerings or as a stand-alone one. This paper mainly focus on the role of cryptography for the encryption of data among network transmission, India's cryptographic state, scheme of encryption in India, how encryption can protect the safety of advocacy groups, significance of cyber law.

**Keywords:** Cryptography, data encryption, cloud, state of cryptography, significance

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### 3. AN ADOPTION OF VOICE RECOGNITION TECHNOLOGY FOR CONTENT MINING DURING COVID-19

**Rupesh Mishra<sup>1</sup> and Dr. Prof. Rajesh Kumar Pathak<sup>2</sup>**

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Voice recognition technology is an instance of a cutting-edge invention that COVID-19 has mainstreamed. Before the epidemic, innovation of voice recognition technology had already transformed society. Consumers started purchasing smart speakers during the lockdown at a record-breaking rate, and COVID-19 has changed the way we live. Technology is essential to the continued functioning of our society. Voice technology is part of speech recognition. Native languages as Marathi, Hindi, Bengali, and Gujarati can now be incorporated into voice technology, reaching clients in rural regions and boosting this technologies adoption globally. An Adoption using voice technology as a secure and hygienic substitute for contacts and interactions has been accelerated even further by COVID-19. The most important players in the fight against the outbreak and in guaranteeing our protection during this auspicious time are frontline employees. With widespread adoption, operating expenses might be reduced and time could be saved, allowing doctors to visit more patients and concentrate on providing high-quality care. Voice-assisted technology will assist banks in providing gratifying customer service and enhancing biometric security. By 2024, Digital voice assistant shipments will exceed the human population and approach 8.4 billion units. The aim of

this paper focuses on an adoption of voice recognition technology during COVID-19 the pandemic which aids the indigent by mining the content in web and providing to the demanding and valuable sectors, including banking, healthcare, e-commerce, transportation, and marketing. The market for voice recognition systems has been significantly fueled by the expanding digitalization and technological advancements in device research and manufacture.

**Keywords:** voice recognition system, evolution, COVID-19, usage, barrier.

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#### 4. CHALLENGES OF GENERATIONAL DIVERSITY AND ITS IMPLICATIONS AT ACADEMIC WORKPLACE: AN EMPIRICAL STUDY

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In today's dynamic world, time runs very fast and has created many generations cohorts. There is no denying fact that vivid groups of generations have been developed which have different ways of thinking and working. There are various problems faced by employees at workplace due to generational contradictions. This includes problems due to differences in thinking, work ethics, usage of digital technology. Hence, this study has been chosen which is empirical in nature. Generational differences in thinking are experienced every day at the academic workplace. The knowledge of generational contradiction at academic workplace is important but less thought of area, therefore this study has been done highlighting challenges related to generational diversity and its implications at the academic workplace. The aim of the present study is to discover the differences in each generation in selected academic institution of University of Delhi. It is found that there is a need to acknowledge generational contradictions at the workplace and various measures have been suggested in this study to bridge the generational gap. This study will help not only to understand challenges due to generational diversity at academic workplace but also will contribute to the productivity of the institution by doing an in-depth analysis. The findings will also help to pave further way and add on to the empirical literature with respect to generational diversity at workplace.

**Keywords:** Generational cohort, diversity, bridging generational gap, Generation X, Millennial, Generation Z

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## 5. TOURISM AND ITS SUSTAINABILITY IN INDIA: A BIBLIOMETRIC ANALYSIS

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Tourism has been a vital and progressive driving force in the nation's economy, forex reserves, employment, amongst other benefits accruing directly or indirectly. Its all-inclusive impact may not be possible to be gauged accurately, but its effect and relation with sustainability must be delved into thoroughly for the betterment of one and all concerned, especially with these fields. This requirement forms the prime purpose of this review endeavour where a bibliometrics analysis was performed on the research papers containing the relevant keywords and published in Scopus journals from the years 1993 to 2022 using Bibliometrix library and Biblioshiny tools of RStudio. Analysis of the relevant lot of 135 such filtered papers depicted an annual growth rate of 15.96 percent, with 351 authors from various countries like India, USA, Australia, Canada among others being involved, augmenting existing literature in this field over the same period. This analysis shall enhance a researcher's understanding of the topic and assist in further streamlining their own studies while adding new knowledge to the existing literature.

**Keywords:** Tourism, Sustainability, Bibliometrics analysis

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## 6. ROLE AND CONSEQUENCES OF INTELLECTUAL CAPITAL ON INNOVATION: A LITERATURE REVIEW

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In this technologically enriched and immensely competitive generation, innovation becomes the key deciding factor to sustain in economic markets. Intellectual Capital has profound role in influencing the innovation process, which further enhances the performance of undertakings. This study focusses on analysing the relationship between these two keywords and their interrelationships and consequences for organisations. Descriptive and empirical researches have been scrutinised for the purpose of this paper and the findings have been tabulated comprehensively. Most of the studies have shown positive impact of IC on innovativeness in companies thereby providing a thrust to the profitability for firms. This review could further be used to develop strategic business models and help make strategic decisions.

**Keywords:** Intellectual Capital, Innovation, Profitability

## 7. IMPACT OF EDUCATIONAL MEDIUM IN RESULTS OF MATHS AND NON-MATHS BACKGROUND IN AN APPLIED SCIENCE PROGRAMME

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We cannot ignore the fact that many students find math and English to be challenging subjects. Even though students have been studying these two prevalent subjects since they were young, they nevertheless have concerns about them. Applied mathematics and pure mathematics are the two categories under which the discipline of mathematics can be categorised. We must learn the fundamentals of pure mathematics, while the applications of mathematics are covered by applied mathematics. Similar to this, the subject of English is divided into two parts: comprehension and grammar. In this essay, we will investigate the effects that students' backgrounds have on their performance. In this essay, we will cover the section 2021–2022, and we will do research on 57 and 46 BCA Part–I students from the session 2020–21, both maths and non-maths. As children who struggle with mathematics frequently experience negative effects from this form of anxiety, mathematics anxiety is a reliable indicator of non-math students' success in the subject. For Hindi-medium pupils, the quality of instruction is particularly important. It is an interesting finding in education that after completing their basic education, students from vernacular language schools experience psychological disturbance and find it challenging to fit in at English-medium colleges.

**Keywords:** Mathematics, Applied Mathematics, psychological.

## 8. RECENT TRENDS AND TECHNIQUES FOR OBJECT DETECTION IN AERIAL IMAGERY

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The technique of locating and identifying objects in an image or video is known as object detection. It is an essential procedure in plenty of real-world applications. It can be applied to aerial photos to identify various things, which can be useful for operations like analysis and surveillance. It presents difficulties in the detection of items that are relatively small in size, occluded, have cluttered backgrounds, or have unpredictable orientations. Along with providing an overhead perspective of the objects, the aerial image makes feature extraction challenging and increases the risk of false alarm. In real-world situations, it is frequently necessary to perform effectively in terms of speed and detection accuracy. Although several conventional detection methods have performed reasonably well, these approaches continue to be ineffective. Even though satellite photos are packed with data for processing and analysis, the human eye is not able to pick up on minute variations in texture, color, or intensity. A segmentation approach, a challenging but crucial step in image analysis, could be used to retrieve information from aerial photos. Edge detection, wavelet-based methods, and multispectral classification are the main methods that can be used to do this. Because of CNNs, the conventional detection methods have advanced significantly when using horizontal bounding boxes (HBBs). However, missing detection and duplicated detection zones remain some of the HBB detection approaches' drawbacks, particularly for objects that are tightly grouped and have a stripe-like form. This paper present in-depth research and discussions on the concept of current methods for object recognition in aerial photos.

**Keywords:** Semantic Segmentation, Deep Learning, Aerial Imagery, convolution Neural Network.

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## 9. AN INNOVATIVE APPROACH FOR E-VOTING SYSTEM BY MULTIMODAL BIOMETRICS IN INDIA

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Voting has evolved over the years from a purely manual process to more electronic means. The use of electronic devices in voting is Known as electronic voting. By electronic voting we need to be able to make sure the ballot cast can be authentic must be verified and the transaction cannot be traced Voting process is strictly followed in India. The principle of Electronic Voting Machine (EVM) is simple design, reliable and fast access characteristics. Unfortunately, due to hardware problems in EVMs, Faulty officials and illegal voters have illegal votes being cast. This research paper introduced an innovative approach to designing an E-Voting system with the help of multimodal biometrics that enhances security, overcomes the chances of fraud, and provides high-level authentication. High Accuracy is achieved by the fusion of facial and fingerprint recognition Arrangements.

## 10. DETECTION OF SODIUM IODIDE SYMPORTER (NIS) GENE EXPRESSION IN THYROID CANCER PATIENT

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Thyroid follicular cell has the ability to concentrate iodine from blood stream against the concentration gradient. This property of the thyrocytes is used for the diagnosis and treatment of DTC by radioactive iodine. Iodine enters the thyroid cells via the transport molecule namely Sodium Iodide Symporter (NIS). Major thyroid specific proteins such as thyroglobulin (Tg), thyroid Peroxidase (TPO) and thyrotropin receptor (TSH-R) are established as differentiated markers of thyroid follicular cells. Along with these, NIS is also regarded as one of the latest differentiation markers. These markers are also expressed in patients of differentiated thyroid carcinoma. Blood samples were processed for extraction of RNA and cDNA synthesis. For checking the quality of cDNA prepared GAPDH-PCR was carried out. cDNA was further used for standardizing RT-PCR for Tg and NIS gene. NIS was expressed in all differentiated thyroid cancer patient with difference in band intensity which indicate variation in level of expression.

**Keywords:** differentiated thyroid carcinoma, GAPDH-PCR, RT-PCR, Tg gene, NIS gene

## 11. CONTRIBUTION OF PUBLIC DISTRIBUTION SYSTEM IN FOOD MANAGEMENT

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Public Distribution System i.e., PDS has an important role in food security, while on the other hand it also has a special contribution in food management. We are well aware of their role in food security for the poor, but there is a lack of information regarding the contribution of PDS in food management. Therefore, studying the implementation of Public Distribution System through the present research title, the contribution of PDS in food management has been studied. For the present research, the annual report issued by the government, the economic survey report and the secondary data of the last five years (2016-17 to 2020-21) obtained from the departmental website have been taken. Significantly, 17 goals have been set by the United Nations at the global level, in which the second goal is zero hunger. Although the condition of India and Chhattisgarh is not satisfactory in terms of zero hunger, but India's Niti Aayog is continuously moving towards achieving the goal. It is clear from the analysis of the figures of the last five years that 80 to 90 percent of the procured grains, rice and wheat are being used in the PDS and a continuous increase is being seen in the production of

coarse grains. Which can be proved effective in fighting malnutrition by making it available to the poor and needy through PDS. The presented study has created a new equation of fair price equal to fair price for food management, that is, by purchasing their produce from farmers at a fair price, it is being made available to the needy at a fair price and this is the basic mantra of food security, which This is necessary to achieve the second goal of sustainable development, zero hunger.

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## 12. EFFECTIVENESS OF SMART CLASS TEACHING VERSUS TRADITIONAL CLASS ROOM TEACHING ON ACADEMIC ACHIEVEMENT AMONG NURSING STUDENTS AT SELECTED NURSING COLLEGE, DURG DISTRICT, CHHATTISGARH

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When educators continue to experiment and implement various pedagogical strategies and approaches, curriculum enhancement, course designs, and evaluations that are contemporary and establish a road map for the student to self-correct, effective and relevant teaching can be of tremendous benefit. This study aims to assess the effectiveness of smart class teaching versus traditional class room teaching on academic achievement among nursing students. *Materials and methods:* This experimental study was conducted in M. J. College of Nursing, Durg. Non-probability convenient sampling was utilized to select the 90 nursing who were divided into two groups (45) students for smart class teaching and (45) students for traditional class room teaching. Data were collected using two different tools demographic and (ii) Mid-term test. Both inferential and descriptive statistics were utilized to analyze the collected data *Results:* Majority 72% of majority of samples had good satisfaction on smart class method of teaching. The academic achievement were high among students of smart class teaching ( $t=5.3$ ) when compared to traditional teaching. The study revealed that there is a statistically significant difference between the two methods of teaching in terms of nursing students' achievement. Also significant association was found between the educational status of father in smart class teaching group with their demographic variables. *Conclusion:* The study has highlighted that smart class teaching is effective in improving among nursing students on physical assessment.

**Keywords:** Academic achievement, smart class teaching, Nursing students.

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### 13. MECHANOLUMINESCENCE STUDIES OF $\gamma$ -INDUCED Dy<sup>3+</sup> ACTIVATED SrAl<sub>2</sub>O<sub>4</sub> PHOSPHOR FOR HIGH RADIATION DOSE DOSIMETRY

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Combustion technique has been used to produce Dy doped SrAl<sub>2</sub>O<sub>4</sub> phosphors. The photoluminescence and mechanoluminescence characteristics were studied by varying the Dy concentration and  $\gamma$  dose. The Mechanoluminescence (ML) studies shows that the ML glow curve has only one peak and its position is independent of the dose or Dy concentration. It was found that 1.75molar% Dy doped SrAl<sub>2</sub>O<sub>4</sub> shows highest mechanoluminescence intensity irradiated at 1.18 kGy. The ML spectra is similar to PL spectra suggesting same center responsible for ML behavior. It was found that the ML intensity increases linearly with the  $\gamma$ -dose upto 1.18kGy. The ML fading and linear response suggests the possible application of SrAl<sub>2</sub>O<sub>4</sub>:Dy in ML dosimetry. XRD, SEM & TEM techniques have been used for material characterization.

### 14. INNOVATIVE SCHEME “NARVA GARVA GHURVA” IN AGRICULTURE BY CHHATTISGARH GOVERNMENT

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This study focus on the scheme “narva garva ghurva” of Chhattisgarh and this scheme is for farmers. In this scheme free seeds are provided to the farmers for production of vegetables. The purpose of this study “Innovative Scheme ‘Narva Garva Ghurva’ in Agriculture by Chhattisgarh Government” is to aware more and more farmers about this scheme. Both secondary and primary data had been collected for the study. Primary data of 25 farmers of village puri and patan each of Chhattisgarh had been collected, for this questionnaire and direct interview had taken for the study. Secondary data had been collected from the budget of the Chhattisgarh. The study shows that most of the farmers get benefits from this scheme but some of them are not skilled in technology hence they get benefit but without skill production does not increase. So there is a need to think more about this scheme and to aware more and more farmers about this. Government should have to take necessary steps by this only more farmers will get benefits. This scheme is quite related to the sustainable development as the second goal of zero hunger can only be easily achieve if more focus is done on the agriculture sector, if we provide more facilities to the farmers they will able to produce more and by more production more people get foods and by this zero hunger will get achieved. In the study of this innovative scheme the focus is to cover it to all over the India.

## 15. SUSTAINABLE RURAL TOURISM & ENTERPRISE DEVELOPMENT: - A JOURNEY OF INNOVATIVE RURAL ENTERPRISES OF AURANGABAD

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### **Purpose: -**

The aim of the research is to highlight the sustainable rural tourism development and the role of innovative rural enterprises for the overall growth and development of rural areas of Aurangabad. Rural enterprises have proven to be a major factor for achieving the sustainable development of the rural destination. Local communities, rural youths and the rural women also play a significant role in achieving the sustainable development of rural tourism through innovative rural enterprises.

### **Design/Methodology/Approach: -**

A Qualitative research method will be used for the current research by taking the help of the case study method of five rural enterprises located in the rural areas of Aurangabad. Detailed Interview schedules, observation methods and telephonic discussions with the rural enterprise owners will be conducted to understand in detail about the overall contribution of rural enterprises in achieving sustainable rural tourism development in Aurangabad.

### **Findings: -**

The findings of the research would be highly useful in understanding the role of innovative rural enterprises for achieving the sustainable rural tourism development. The study would also attempt to explore the different innovative rural products and their role in supporting the livelihood pattern of the rural community of Aurangabad.

### **Originality/Value: -**

This will be the first systematic and high-level analysis presenting the role of rural enterprises in achieving the sustainable rural tourism development in the rural areas of Aurangabad. The study will also establish the relationship between the rural enterprises and the sustainable development of the rural destinations in Aurangabad.

**Keywords:** Sustainability, Rural Tourism, Rural Enterprises

## 16. PROFILING SUSTAINABILITY ENTHUSIASTS AS WASTE MANAGERS- A CASE STUDY FROM WASTED 360 SOLUTIONS

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A sustainable society must be socially responsible, focusing on environmental protection and dynamic equilibrium in human and natural systems. Sustainability though not a new concept, is most certainly a new way of living for some people. Though many have developed sustainable activities, some people are still yet to improve their lifestyle habits. To understand whether the public is really embracing sustainability, this research has been done which is mainly concentrated in understanding the demographics of the population, the buying behavior patterns, their thoughts on sustainability and getting data about their waste management system. Descriptive research design was used. Using non-Probability Sampling technique 131 responses were collected. After analysis of such data it was observed that we have not yet arrived at the destination in the field of sustainability. There is a gap between the aspiration and the knowledge of how sustainability can be implemented. In other words, the "What?" has been realized but only a partial journey towards "How?". Future research can focus on the different levels of understanding that the public understanding of the "How" of sustainable living. It is also surprising that institutes of learning have been the major imparters of the concept of waste segregation and not the public policy propagandist.

**Keywords:** Sustainability, waste management, waste segregation, environment, sustainability enthusiast

## 17. ROLE OF PRADHAN MANTRI JAN DHAN YOJANA IN DEVELOPMENT OF THE WEAKER SECTION OF THE SOCIETY

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Pradhan Mantri Jan Dhan Yojana (PMJDY) is a National Mission on Financial Inclusion of all the households in the country. The plan envisages universal access to banking facilities with at least one basic banking account for every household, financial literacy, access to credit, insurance and pension facility. The main objective of the study is to find out role of Pradhan Mantri Jan Dhan Yojana in development of the weaker section of the society. Data is collected by the secondary source. Like PMJDY progress report of various years. The analysis of the data is done through use of various statistical tools like tabulation of data, diagrammatic presentation of data, measures of percentages. The findings are as on 10<sup>th</sup> August '22 number of total PMJDY Accounts: 46.25 crore; 55.59% (25.71 crore) Jan-Dhan account holders are women and 66.79% (30.89 crore)

Jan Dhan accounts are in rural and semi-urban areas. During first year of scheme 17.90 crore PMJDY accounts were opened. There is Continuous increase in number of accounts under PMJDY. PMJDY Accounts have grown three-fold from 14.72 crore in Mar'15 to 46.25 crore as on 10-08-2022. Undoubtedly a remarkable journey for the Financial Inclusion Programme. Total deposit balances under PMJDY Accounts stand at Rs. 1,73,954 crore. This scheme provides an avenue to the poor for bringing their savings into the formal financial system, an avenue to remit money to their families in villages besides taking them out of the clutches of the usurious money lenders. PMJDY has brought the unbanked into the banking system, expanded the financial architecture of India and brought financial inclusion to almost every adult.

**Keywords:** Pradhan Mantri Jan Dhan Yojana (PMJDY), Financial Inclusion, banking system etc.

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## 18. ENABLING SUSTAINABILITY IN HIGHER EDUCATION VIA PERCEIVED EMPLOYABILITY, UNIVERSITY COMMITMENT, PERCEIVED ORGANIZATIONAL PRESTIGE AND STUDENT SATISFACTION: A PLS-SEM APPROACH

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Prominence of quality education for building sustainable development is undeniable and is distinctly pointed out in one of the fourteen SDGs (Sustainable Development Goals). In the same context, this study intends to investigate the role of university commitment, perceived organizational prestige and student satisfaction in enhancing perceived employability for sustainable higher education. It also aims to assess the mediating role of student satisfaction in cultivating the relationship of perceived employability with university commitment and perceived organizational prestige. High perceived employability is a reflection of sustainability in higher education. Adapted questionnaire was used in this study to capture perception of 458 management graduates selected through purposive sampling method. PLS-SEM (partial least square structure equation modeling) technique was used to analyze the data with the help of SmartPLS software. The results of this study shows that perceived organizational prestige is the strongest predictor of perceived employability followed by student satisfaction and university commitment. Furthermore, student satisfaction was found to play the role of mediator in the proposed model. Higher education institutes are recommended to instill university commitment, perceived organizational prestige and student satisfaction via various practices and amendments in its curriculum. Students are recommended to enhance their perceived employability so as to achieve sustainability in their career. This study aims to fulfill theoretical, research and management implications for students, higher education institutes and policy makers.

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## 19. CHALLENGES FOR IOT APPLICATIONS IN HEALTH CARE SYSTEM

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Internet of Things (IoT) is the technology where a machine can communicate things with different arenas with the help of internet.

IoT is growing speedily. The IoT enabling technologies with RFID, Cloud, and Big data analytics have been transforming our entire eco system. Our smart homes, smart cities, waste management, disaster alerting, recycling, agriculture, green energy, healthcare are using IoT rapidly.

In this paper we are discussing how IoT helps to solve problems related with healthcare system, advantages of using IoT and challenges faced by IoT technologies in healthcare and its future scope.

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## 20. AN ANALYSIS OF TRANSITION FROM CONVENTIONAL TO DIGITAL MARKETING

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The development of broad band internet connectivity and recent advancements in information technology have increased access to shopping websites quickly. Companies had to enter the digital environment as a result of these changes. Therefore, the field and definition of marketing also vary as communication regulations do. Traditional marketing strategies are being replaced by digital ones as a result of the advancement of IT technologies. Technology-savvy businesses can effortlessly interact with their customers while providing goods or services. Building strong customer relationships and identifying and addressing their wants and requests are essential in digital marketing, just like in traditional marketing. Companies who use digital marketing differentiate themselves through dual communication, while those that choose not to participate in this race increasingly separate themselves from the competition.

**Keywords:** digital marketing, search engine marketing, social marketing, online marketing.

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## 21. AWARENESS REGARDING SOLAR ROOFTOP PANELS AMONG HOUSEHOLD USERS IN GURUGRAM, HARYANA

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Renewable energy is the source of energy of the near future as the non-renewable sources are depleting faster than depicted. Hence, there is a growing faith and concentration of the world on renewable resources like solar and wind. India has also shown keen interest in this and made major announcements in the recent years to alter its energy usage. Out of all such renewable energy sources, the most promising one for India is found to be solar energy. But to achieve the dreamy targets, a decentralised approach is needed so that households can be made confident along with self-empowered in terms of electricity. This paper deals with the awareness among current users of solar rooftop panels in Gurugram district of Haryana state which forms a part of the NCR. The awareness level of users can help to understand the misinformation as well as lack of information which is hampering the growth. Also, the merits related to it could be known and utilised for further promotion and spread of solar rooftop panels. A direct insight into the end user's knowledge regarding the various aspects, helped to reach the conclusion.

**Keywords:** Solar energy, Solar rooftop panels, Renewable energy, Green energy, Primary survey, Household sector.

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## 22. BEHAVIOURAL AND PSYCHOLOGICAL CHANGES IN STUDENTS AFTER COVID-19

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Covid-19 pandemic caused stress which increased the levels of anxiety and depression among the students to minutely understand the behavioural and psychological abilities in students after covid-19 a survey has been done upon faculties of college where research related with covid issues will be examined.

After analysing the survey form filled by the faculties of Higher Education Institution, it was found that maximum teachers considered offline mode better than online. Better results were also obtained on some parameters of online mode. This survey will provide a scale for everyone associated with education in the current environment. It will also be helpful in providing proper guidance to the students.

## 23. AGRICULTURISTS' SENTIMENT ANALYSIS ON ORGANIC FARMING USING MACHINE LEARNING

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The popularity of organic food is increasing because it protects the environment and has a greater socio-economic impact on the country. India is a country endowed with indigenous technologies and growth potential for organic agriculture. India has lagged far behind in adopting organic farming in for several reasons. Online media has become the arena for showing interest and critiquing. All Internet users can freely express their opinions and share their feelings on this platform. In the context of organic farming, the agriculturists already related to this are supporting this but lots of other agriculturists have negative sentiments about organic farming. These communities use multiple languages to express their views on these practices. Multiple languages are mixed with languages with different grammatical rules, making it a difficult task for researchers to analyze the sentiment of such platforms. In this article, we predicted statistical methods for performing sentiment analysis based on extracted organic farming comments containing mixed content of Hindi, English and Chhattisgarhi languages. Furthermore, we focused on the accuracy and performance of the agricultural dataset to predict the sentiment of the tested dataset.

**Keywords:** Organic Farming, Farming, Sentiment Analysis, Agriculture, Hindi, Chhattisgarhi.

## 24. FOCUS ON MICROWAVE DIELECTRIC PROPERTIES OF HERBAL BASED SOIL IN CHHATTISGARH

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In present paper an attempt has been made by author to focus on dielectric properties of soil. Soil Physics is new research area in present scenario. Microwave remote sensing dielectric behaviour of soil helps in agricultural production in the form of cultivation. Soil is very important for human being. India is rich in medicinal plant diversity which is distributed in different geographical, environmental conditions and associated tribal and folk knowledge systems. Plants are related with soil and soil is related with Soil Physics. Remote sensing is the backbone of the space program.

Remote sensing plays a prominent role in many domains related to the observation of the earth such as agriculture monitoring, military battles, and cover, oceanography, etc. the art of measuring an object or entity without touching it. "The science and art of obtaining information about an object, area or phenomenon through the analysis of data acquired by a device that is not in contact with the object, area or phenomenon under investigation".

Microwave remote sensing plays an important role in Agriculture as well as agricultural up gradation. Soil plays as nucleus in the field of production of grains. Soil is the mixture of rock debris and organic materials which develop on the earth's surface. The Major factors affecting the formation of soil are relief, parent material, climate, vegetation and other life forms and time. Whenever dig a pit on land it has been seen about soil. It has been found that it consists of three layers which are called horizons. Agriculture is the backbone of the economy of the most of the nations in the world as it provides livelihood for 60 percent of the world population. Similarly, in India agriculture is the most important and extensive land use activity.

Soil is really key part of human being as well as animal. Without Soil it cannot be existence of environment. There are different varieties of Soil in India as well as world. Every state has specific Properties of Soil, Soil involvement in production is very important. There are several Properties of Soil such as Physical Properties, Chemical Properties and geographical Properties. The available nutrients play important role in Production of food grains and in agriculture. There are a lot of nutrients but eighteen elements enrich the supporting environment.

Chhattisgarh State has a rich forest, covering 44% of the total geographical area of the state. Hence, Chhattisgarh has been declared as "Herbal State", owing to its rich floral diversity and encompassing wealth of invaluable indigenous traditional knowledge base, inherent with tribal folk.

**Keywords:** Remote sensing, soil, microwave, dielectric properties, herbal, agriculture

## 25. A REVIEW OF SECURITY AND PRIVACY ISSUES OF SOCIAL NETWORKING WEBSITES

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One of the most significant advancements in communication over the past few decades was the revolution in the computer industry and the following growth of the Internet. In terms of information processing and transmission methods, these two

entities have significantly changed the globe. Social media is one area that has grown significantly as a result of the emergence of computers and the Internet. Owing to the users' capacity for interaction, discourse, and idea and opinion exchange. Participation in numerous virtual networks is widespread. They have gained a lot of notoriety in recent years and have been warmly received, which has led to a large amount of personal data being present among Internet users. The social network converts the user's social group into a business setting. Users of social networks should have privacy and security issues as a result. Users of social networks frequently overlook the threats to their privacy posed by their information-sharing practices in favor of the advantages of their online presence. Even though they knew they would lose control of their personal information under the influence of social networks, many nonetheless shared it for momentary amusement and delight. Attacks can be divided into four categories: malware attacks, network attacks, virus promotion, and privacy and security breaches. These four categories will mostly focus on privacy and security issues.

**Keywords:** Security, privacy, attacks, privacy threats, modern threats

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## 26. COMBINING EFFICACY OF GREEN HUMAN RESOURCE MANAGEMENT AT COMMUNITY LEVEL WITH COMMERCE AND CARBON ECONOMY

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In a world where Government and Private organisations at national and international levels are taking keen interest and participating in ensuring a sustainable future for generations to come, the community and its people at the grassroot level too should be aware and participative in the process. The combination of Commerce, Community and Climate suggests a holistic approach of utilising human capital that benefits all three components parallelly. An environment to build awareness, active involvement of the people along with private and government machinery, developing economical standards and procedures to reap social benefits needs to be curated. Methodology: Review of literature of research papers with Carbon economy, green economy, Sustainable Development Goals SDGs, Green Human Resources as its major keywords is studied extensively with bibliometric analysis to support the growth trends and incubating the idea of "Community Carbon Credits (CCC)", "Climate Sensitive Representatives (CSRs)" as the new-age coined terms to maximise involvement and returns with minimum investment and costs through PPP model. Objective: The idea is to build a responsible and accountable environment within the community that builds a safer and easier to manage commerce spaces along with sensitivity towards

global climate as a standard practice. IT-AI-based marketable products ideologically based on the concept of UIDAI (Aadhaar Card). To encourage and modify routine activities as economically reimbursing and globally impacting.

**Keywords:** Green economy, carbon footprint, carbon economy, GHRM, SDGs, sustainable business practices, community

## 27. A NARRATIVE RESEARCH APPROACH: EFFECTIVENESS OF INTERNAL CONTROL SYSTEM IN HIGHER EDUCATIONAL INSTITUTIONS

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An internal control system is to ensure the efficacy of business organizations. This works with the appropriate reporting of annual reports with compliance of laws and regulations. The internal control system (ICS) is an evaluative component of an audit tool that can provide a strong and competent working condition. Higher educational institutions help in major growth of society. Transparency is required to ensure the compliance thus a narrative view will represent how the research was conducted and will provide better outcomes.

**Keywords:** Internal Control, Higher Educational Institution, Efficiency, Narrative

## 28. IMPACT OF PATIENT SATISFACTION ON PATIENT LOYALTY IN HEALTHCARE INDUSTRY

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Over the past 20 years, patient satisfaction surveys have gained increasing attention as meaningful and essential sources of information for identifying gaps and developing an effective action plan for quality improvement in healthcare organizations. From literature review it was found that there are limited published studies to report the improvements resulting from feedback information of patient satisfaction surveys, and in most cases, these studies were found contradictory in their findings. The researcher considered the hospital which had good infrastructure and promotion strategies, then also the patient loyalty is reduced. A structured questionnaire was developed with the help of experts and the data was taken from 10200 respondents but after refining the

data 10000 respondent data was finally used for analysis. This research paper investigates the relationship of dependent and independent influential attributes towards overall patient satisfaction & patient loyalty. This research concluded that the patient satisfaction leads to patient loyalty. Thus the hospital need improve upon certain factors which will lead the higher patient loyalty like doctor behavior, patient recovery, support staff behavior, hospital cleanliness and smooth handling of discharge procedure.

**Keywords:** Patient satisfaction, patient loyalty, Healthcare, Hospital care

## 29. EFFECT OF 6 WEEKS SAQ TRAINING ON VO<sub>2</sub>MAX OF FOOTBALL PLAYERS

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**Purpose:** The main purpose of the study was to find the effect of 6 weeks SAQ training on VO<sub>2</sub>max of football players.

**Methods:** A total of 30 male football players whose age ranged between 21 to 25 years from Future Football Coaching Centre Angtha (FFCCA) were selected. The subjects were divided into 2 groups of Experimental and Control group consisting of 15 subjects each. Data on VO<sub>2</sub>MAC was collected prior 6 weeks training from both groups and just after the finish of 6 weeks training post test data was collected. The collected data was analyzed using descriptive, pair t-test and ANCOVA at 0.05 level of significance.

**Result:** It was found that the mean and standard deviation of VO<sub>2</sub> MAX for the pre-test and post-test value of control group were 39.16±5.15 and 39.90±5.21 respectively. The pretest and post-test value of experimental group was 39.49±5.28 were 44.26±4.81 respectively. T-value of control and experimental were 1.88 and 9.75. And F-value after ANCOVA was 43.79.

**Conclusion:** From the findings, it was concluded that there was significant difference found in VO<sub>2</sub>MAX and the SAQ training for 6 weeks was successful in improving VO<sub>2</sub>MAX of football players

**Keywords:** SAQ Training, VO<sub>2</sub>MAX and Football Player.

## 30. PLASMACHAIN: CONVALESCENT PLASMA DONATIONS ON BLOCKCHAIN

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Blockchain provides decentralization, transparency, anonymity, privacy, and security to its applications which makes them robust, reliable, and confidential. In this covid scenario, scientists and researchers are looking for vaccinations and drugs for the treatment of Covid patients. The convalescent plasma donations have been very critical for the treatment of COVID -19 patients. But the information of these donations is very difficult to share among the hospitals and patients who need convalescent plasma for the treatments. In this paper, PlasmaChain has been proposed to record, search, and book plasma donations on the blockchain platform by all the hospitals and donation centers of the country. This blockchain platform digitizes the plasma donation records and eases the search process for doctors and patients. PlasmaChain will help speed up the plasma therapy process by removing the time wasted by the people in looking for valid plasma donations. It can further track the plasma therapy and donation records as well.

**Keywords:** PlasmaChain, Blockchain, plasma donation, convalescent plasm

### 31. CONSUMER OPTIMISM AND ONLINE BUYING BEHAVIOUR - A SYSTEMATIC LITERATURE REVIEW

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Consumer confidence is a financial indicator that gauges how optimistic individuals are about both their own financial status and the state of the economy as a whole. Customers spend more money when consumer confidence is high. Consumers typically save more and spend less when they are feeling incredibly insecure. The level of consumers' optimism influences their purchasing decisions. The decision-making and actions of those who purchase and use things are referred to as "buying behaviour." The research aims to study the literature available on how consumer optimism affects consumer's online purchasing behaviour. The research helped us to get an indepth knowledge about how optimism plays a role in altering purchase decision and also help in making informed decisions. The systemic literature review also helped us to understand that optimism has been studied as a subconstruct but not as a construct in totality. Future research in the area can be done to study consumer optimism as a construct and its effect on consumer buying behaviour.

**Keywords:** Consumer, Optimism, Buying Behaviour, Confidence, Literature Review.

### 32. STATISTICAL MODELING AND FORECASTING MAIZE PRODUCTION IN INDIA: EVIDENCE OF AUTOREGRESSIVE INTEGRATED MOVING AVERAGE

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The present study endeavors to predict the production of maize in India using the Autoregressive Integrated Moving Average (ARIMA). For the study, time-series data on maize production in India was examined for a period of 60 years, from 1960 to 2019. The data from the time series has been taken as input to make products as accurate as possible over the next ten years (2029) from [indexmundi.com](http://indexmundi.com). The best models were selected by comparing the Akaike Information Criterion (AIC), Schwartz's Bayesian Information Criterion (SBIC), Normalized BIC, and auto. Arima function in R. According to the findings, the ARIMA (1, 1, 2) model was found to be the most suitable model for forecasting maize production in India. The developed model was used to forecast maize production for ten years from 1960 to 2019. The investigation revealed a rising trend in maize production. Maize production is predicted to be around 35439.37 million tonnes in 2029, with upper and lower limits of 30570.32 and 40308.42 million tonnes, respectively. Further, diagnostic testing has been done to validate the results. The Ljung-Box test result and the normal Q-Q plot confirm the study's findings. Our study offers useful insights to the policymakers of the country. This projection is important for designing and executing effective policies to expand maize production in India in order to fulfill the growing population's consumption demand and improve food security.

**Keywords:** Time Series Modeling, ARIMA Model, AIC, Forecasting, Maize Production.

### 33. MELANIN: PROGRESS, PROSPECTS AND CHALLENGES IN SYNTHESIS AND COMMERCIAL APPLICATIONS

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Melanin is a naturally occurring polymer found in a wide variety of organisms, actively involved in biological processes to withstand adverse environmental conditions. Its scientific activities that include UV protection, antioxidant properties, dehydration capabilities, and relatively inexpensive separation of natural systems have made it an optional combination of spectrum systems. Its desirable properties including



biocompatibility, biodegradability, metal chelation, and electronic conductance have expanded its use, such as its use in organic semiconductors, drug delivery, environmental remediation, and the cosmetics industry. This article focuses on comparing the natural sources of melanin, its biochemistry, isolation methods, and applications downstream. The use of natural melanin for commercial purposes by existing research spaces and challenges is also included in this article.

**Keywords:** Melanin, antioxidant property, biocompatibility, environmental remediation and biodegradation.

### 34. BIOCHEMICAL CHARACTERIZATION OF *DALBERGIA LATIFOLIA* AND DEVELOPMENT OF ITS TISSUE PROTOCOL

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Attempts were made to develop suitable culture condition for micropropagation of *Dalbergia latifolia* from nodal meristem. Callus induction and bud breaking for shoot initiation from nodes of *Dalbergia* was achieved in tissue culture under defined conditions. Callus was initiated from nodal segments and maintained on Murashige & Skoog basal medium supplemented with 4.0mg/l Benzylaminopurine (BAP), 2.0mg/l Indole acetic acid (IAA), 20 mg Adenine sulphate, 0.2ml Cobalt chloride and 0.2ml copper sulphate. Callus survived several subcultures. Bud breaking and shoot initiation was effective in Murashige & Skoog medium with 1.0mg/l Benzylaminopurine (BAP), 0.5mg/l Zeatin, 1.0mg/l Zeatin and 0.5mg/l  $\alpha$ - naphthalene acetic acid (NAA) after 20-25 days after inoculation. The results were obtained at  $25 \pm 2^\circ\text{C}$  at 2000 luxlight intensity. The preliminary phytochemical screening of leaf and root extract of *Dalbergia* revealed that it contains Flavonoid, Tannin and Cardiac glycosides which having the medicinal value.

**Keywords:** *Dalbergia latifolia*, Callus induction, Murashige & Skoog, Flavonoid, Tannin and Cardiac glycosides

### 35. THE NEED FOR EDUCATION ON URBAN GREENS FOR SUSTAINABLE DEVELOPMENT OF URBAN AREAS

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A significant population migration from rural to urban areas has occurred as a result of improved social, economic, and healthcare amenities. Due of this, cities have grown haphazardly in a very short period of time, experiencing fast urbanization. Additionally,

it has led to environmental degradation, underlining the significance of environmentally friendly and sustainable development. By expanding Urban Green Spaces (UGS), sustainable city development ensures that the general health of the city is both preserved and improved. UGS are crucial for both reducing and adapting to climate change. However, public knowledge is crucial for its assimilation to be successful. If people are unaware of the advantages, regulations and policies will be ineffective, and the importance of urban green spaces for the environment won't be comprehended. By educating them and exposing them to real-world knowledge, it is necessary to instill this knowledge and sensitivity in youngsters at the school level. The significance of educating people about urban green spaces and the best strategies to do so are addressed in this paper. The paper makes an effort to comprehend the various approaches in the educational system and the difficulties encountered through a literature assessment of various situations from across the world. The paper makes recommendations for the strategy that may be used in the educational system to raise awareness of the value of greenery in the living environment based on the findings of the research that were done. This will facilitate proper urban green infrastructure optimization. A lack of engagement with "nature" is essential in urban areas since they have an artificial lifestyle and a distorted perception of the natural world. Thus, the successful integration of urban greens into the urban area will depend more on public knowledge than on any other factor.

**Keywords:** Education, Urban Green Spaces (UGS), Sustainability, Urban green infrastructure

### 36. THE STATE OF SUSTAINABILITY REPORTING IN BANKING SECTOR IN INDIA- A STUDY OF NSE LISTED COMPANIES

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In present times, in order to achieve sustainable development, business organisations are required to disclose their socio-environmental contribution along with their financial results and to incorporate sustainability into their business practices. The present study using the content analysis technique seeks to analyse the Sustainability Reporting (SR) practices of the Indian banking companies listed on NSE Banks Index during 2019-20. It further examines any difference in SR practices of banks based on standalone reporting as per GRI framework, ownership structure and market presence through appropriate statistical tests. A Sustainability Disclosure Index consisting of 50 indicators on five different dimensions of sustainability has been developed to assess the sustainability performance of banks. The study found that sustainability reporting disclosure under environmental dimension is lowest, and disclosure of human rights and labour practices is also low while social and governance disclosures are found to

be better. Overall IndusInd bank is found to be the best performer while Federal bank is found to be the worst performer in terms of SR practices. The Mann Whitney U test indicated a significant difference in SR disclosure on the basis of GRI reporting status but not on the basis of ownership structure and market presence. Overall, sustainability reporting by banks in India was found to be in evolutionary stage, where much is to be achieved yet.

**Keywords:** Sustainability Reporting practices, Banking sector, Content analysis method, India

### 37. COMPARATIVE STUDY ON SOCCER SKILL PERFORMANCE AMONG THE DIFFERENT PLAYING POSITIONS

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The main purpose of this study was to compare soccer skill performance in different playing positions of soccer players. For the present study, subjects are selected randomly total of 45 (N=45) players, 15 each forward, midfielder, and defender players between 18 to 25 years of age who had been participating in at least state league tournaments of Manipur. Mor-Christian General Soccer Ability Skill Test was administered to obtain the pertaining data for soccer skill performance. Descriptive analysis and analysis of variance (ANOVA) were employed to find out the characteristics and means difference among the different playing positions and tested at 0.05 level of confidence. Further post hoc test was applied by using the Scheffe's method to determine paired mean differences in different playing positions of soccer players. The results of the study reveal insignificant differences in passing and shooting skills performance among the forward, midfielder, and defender positions. In the case of dribbling skills performance, significant difference was found among the forward, midfielder, and defender positions. Further, the paired mean comparison reveals that significant difference was found between the midfielder and defender positions. However, there were insignificant differences was found between the forward and midfielder; and forward and defender positions respectively.

**Keywords:** Soccer, Skill Performance, Mor-Christian General Soccer Ability Skill Test

### 38. SELF HELP GROUP - BANK LINKAGE PROGRAMME: AN INNOVATIVE WAY TO ACHIEVE SUSTAINABLE DEVELOPMENT GOALS

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India's progress towards achieving SDGs is both encouraging and challenging. India's recent overall Sustainable Development Goals (SDGs) score was 66 out of 100. Comparing with South Asian Nations India is now behind all south Asian nations except Pakistan. The SHG-BLP model is one of the most successful and effective microfinance programmes in the world, with an outreach to 14.20 crore families, so it is one of the best means to achieve sustainable development goals. This paper attempt to find the evidence of the role of SHG-BLP in achieving sustainable development goals. In this study, I have gone through various research and reports related to the topic. The main objective of the study is to find out the role of the SHG-BLP in achieving sustainable development goals. Data is collected by the secondary source. Like NABARD annual report of various years and the report on SHGs. We have also gone through the various. The analysis of the data are done through use of various statistical tools like tabulation of data, diagrammatic presentation of data, measures of percentages. So the findings of the research is that SHG-BLP contribute to many goals like no poverty, zero hunger, good health and well-being, gender equality, decent work and economic growth, reduce inequalities, quality education, industry and innovation, climate action and the life below water.

**Keywords:** Sustainable Development Goals, NABARD, SHG-BLP etc.

### 39. INTEGRATING SUSTAINABILITY IN INDIAN HIGHER EDUCATION INSTITUTIONS TO IMPLEMENT AGENDA 2030: ANALYSIS OF CONTRIBUTING FACTORS AND STRATEGIES

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As torch bearers for progressive change, higher education institutions (HEIs) need to focus on embedding sustainability into their strategic objective, to align education towards sustainable development goals. This research aims at identifying strategies to integrate sustainability in the core of Indian management HEIs. A systematic literature review was done to identify factors that influence sustainability in university practices

and curriculum. The factors were used to create a SWOT flashcard questionnaire, through which top 50 Indian management institutes based on the National Institutional Ranking Framework (NIRF 2021) were surveyed. IFE and EFE matrices were then formulated to identify appropriate alternative strategies. Analysis of IFE and EFE found that HEIs need aggressive strategies to align their internal capabilities and skill sets to the external environment opportunities available. QSPM matrix helped identify aggressive strategies as most attractive. Incorporating more certificate programs, MDP, in online, offline and hybrid mode, encouraging collaboration between industry academia for sustainability programs and nurturing collaboration with external stakeholders for research, societal and community led initiatives were the strategies preferred. Integrating sustainability into the learning process of management HEIs will help enable students to make informed decisions as future managers.

**Keywords:** Higher Education Institutions, HEIs, sustainability, education, SWOT-QSPM Analysis, Systematic Literature Review.

#### 40. ASSESSING IMPACT OF ‘FUTURE OF WORK’ FOR EFFECTUAL UPSKILLING USING BIBLIOMETRIC ANALYSIS

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The ‘future of work’ is a concept that has been used to describe the era of rapid automation and adoption of advanced technologies in industries and businesses. This ongoing advancement has resulted in concerns around job displacement, skill obsolescence, increased income and gender disparity, and how human and artificial intelligence would co-exist and shape the world. Although several research studies have explored these aspects in isolation of other factors, no attempt has been made to comprehensively map the research field so far. In this paper, we conduct a bibliometric analysis of 205 papers which appear in top business, economics, and management journals from 2000 to 2022. Biblioshiny, a web-based application included in the Bibliometrix package was used for the purposes of analysis. The software helped identify influential journals, authors, countries, articles, and themes. Additionally, network analysis helped map the conceptual, intellectual, and social structure of the shortlisted papers. We further develop a future research agenda for understanding technological change and ensuing labour market, skill set shifts. This paper and its

findings contribute to the literature by offering a scientometric and systematic way to review 'future of work' and its impact on employee skill needs.

This paper aims to map the evolution of research on 'future of work' and how technology is impacting the labor market. Research published between the period 2000—2022 was analyzed given that in the 21st century the impact of computers and information technology has been much more pronounced than in previous decades. A thorough analysis of the conceptual, intellectual, and social structure of this research field has been conducted.

This paper makes a major contribution by consolidating fragmented literature in the area. In doing that, this paper also attempts to define the term 'future of work,' which is gaining a lot of prominence in the business world, by studying how academic research is advancing on the topic. That has enabled the authors to highlight the prominent sources, authors, and journals which are focusing on this topic.

**Keywords:** future of work, future skills, employment, emerging technologies, bibliometric analysis, bibliometrix

#### 41. PERCEPTION OF NEUROMARKETING

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Neuromarketing helps to study how peoples brain react when they make purchase decision. The tools are FMRI, eye tracking, skin response etc. This paper focuses on Perception of Neuromarketing. The objective of this study was to find the factors influencing neuromarketing and to examine whether there exists any significant difference between demographic profile and perception of neuromarketing. For the purpose of study, we used questionnaire method to collect data. Consumers have positive attitude towards neuromarketing but the concept of neuromarketing is not well known to all category of people. The companies and marketers can increase the awareness about neuromarketing concept among consumers. And people who knew about the neuromarketing techniques feels that if marketers are going to use it in an ethical way they could derive more benefit out of neuromarketing techniques.

**Keywords:** Neuromarketing, decision making, brain responses.

#### 42. EFFECT OF DIFFERENT TISSUE CULTURE MEDIA IN REGENERATION OF BACOPA MONNIERI L. AN IMPORTANT MEDICINAL PLANT

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Bacopa monnieri L. is an important medicinal plant which is used to cure various diseases. It is also considered to have property of memory enhancer. Lots of medicinal importance of this plant attracted the scientists attention towards it. The present work is a comparative study for standardization of growth medium and growth hormone for in vitro culture of Bacopa monnieri L. Three different medium (MS, B5 and SH) was compared. These growth medium was supplemented with different concentrations of Auxin (NAA, IAA and IBA) and Cytokinin (BAP and KIN) alone and in combination. Best shoot bud induction was achieved in MS medium supplemented with 0.5 mg/ L BAP. Highest root induction was observed in MS medium supplemented with 1.0 mg/ L IAA. Root number and root length was also highest in the same medium. Rooted plantlets were first acclimatized in green house and then successfully transferred to field. Survival rate of this plant was achieved 90%. The aim of this study is to standardize the protocol for regeneration of plant in laboratory conditions, so that it can be produced in large scale for commercial purposes.

**Keywords:** Bacopa monnieri L, Medicinal plants, In vitro regeneration, Auxin, Cytokinins

#### 43. FUTURE INNOVATION IN HEALTH SECTOR FOR SUSTAINABLE DEVELOPMENT IN INDIA

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There are seventeen goals of sustainable development out of which health is the third goal of this. But from the period of pandemic (corona virus) the health is declining which is the main reason behind not achieving this goal. India's rank is 145<sup>th</sup> among 195 countries in health care quality. India score only 41.2 in health care access in 2016, this shows that there is a need of making health care quality in India by then only the goal will be achieved. In this research paper on the topic of "Future innovation in health insurance sector for Sustainable Development in India" the data are collected from 2016-2022 showing the performance of India in development of health sector. The

purpose of this study is to show how India is trying to achieve the third goal of sustainable development. Niti Aayog has also implemented many ways to achieve the goals. India is a developing country and it will take time to provide good health for all but new innovative ideas in this sector will help in making India's ranking better in health sector from other countries. The result and findings shows that India's position in health sector was not satisfactory but continuously trying and making innovative ideas will make good health and wellbeing.

#### 44. PHARMACOLOGICAL PROPERTIES AND ANTIBACTERIAL ACTIVITY OF VITEX NEGUNDO FOUND IN CHHATTISGARH STATE

**Dimple Agnihotri<sup>1</sup>, Mukund Kaushal<sup>2</sup> and Aman Dev Dani<sup>3</sup>**

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Vitex negundo also known as Nirgundi is a small shrub known to have many therapeutic properties and is widely used by the local folks. Current study focuses on the analysis of phytochemical and antibacterial characteristics of vitex negundo to enhance the awareness of its medicinal values between the local as well as the tribal people of Chhattisgarh state.

Results revealed the presence of phytochemical compounds like sterols, alkaloids, flavonoids, tannins, glycosides etc. Methanolic extract of the plant shows positive antibacterial activity against some bacterial strains like e coli, bacillus. The above data might also help to amplify the therapeutic knowledge of the plant for further research-based studies.

**Keywords:** Pharmacological properties, Vitex negundo, Secondary metabolites, Local tribes

#### 45. SYNTHESIS AND CHARACTERIZATION OF MIXED-LIGAND COMPLEXES OF Cu(II) WITH AMOXICILLIN ANTIBIOTIC AND AMINO ACIDS

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Mixed-ligand complexes of Cu(II) ion with Amoxicillin (AMX) as primary ligand and different amino acids (AA) like alanine (ala), glycine (Gly), and arginine (arg) as secondary ligand have been synthesized and characterized. Synthesized complexes were characterized by elemental analysis, UV-Visible, FT-IR spectroscopy and magnetic measurement, thermogravimetric analysis etc. Both complexes were also tested for



antibacterial and antifungal activities. The percentage composition of all complexes was determined by their elemental analysis which shows a 1:1:1 ligand-to-metal ratio with the general formula  $[\text{Cu}(\text{AMX})(\text{AA})(\text{H}_2\text{O})_2] \cdot x\text{H}_2\text{O}$  in all complexes, while UV-Visible spectroscopy shows the effect of metal chelation and confirms the interaction of both ligands with central copper (II) ion. FTIR studies show the Cu (II) metal ions in all these complexes have similar coordination modes, which can be described as six coordinated octahedral geometry. Magnetic moment values confirm the paramagnetic behaviour of all three Cu(II) complexes because there is one unpaired electron present in the outer orbital of the central copper(II) metal ion. So copper metal shows a +2 oxidation state in all synthesized complexes. The stability of all ternary complexes was determined by their thermal gravimetric analysis (TGA) in temperature ranges between 25°C-900°C. Both ligands exhibit neutral bidentate ligating property.

#### 46. UNEMPLOYMENT PROBLEM OF INDIAN SOCIETY

**Dr. Meera Dewangan**

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The state of being without any work both for educated & uneducated person for earning one's livelihood is meant by unemployment. Economists distinguish between various overlapping types of and theories of unemployment, including cyclical or Keynesian unemployment, frictional unemployment, structural unemployment and classical unemployment. Some additional types of unemployment that are occasionally mentioned are seasonal unemployment, hardcore unemployment, and hidden unemployment.

Though there have been several definitions of "voluntary" and "involuntary unemployment" in the economics literature, a simple distinction is often applied. Voluntary unemployment is attributed to the individual's decisions, whereas involuntary unemployment exists because of the socio-economic environment (including the market structure, government Intervention, and the level of aggregate demand) in which individuals operate. In these terms, much or most of frictional unemployment is voluntary, since it reflects individual search behavior. Voluntary unemployment includes workers who reject low wage jobs whereas involuntary unemployment includes workers fired due to an economic crisis, industrial decline, company bankruptcy, or organizational restructuring.

**Keywords:** unemployment, labours, workers

#### 47. AN ANALYTICAL STUDY ON IMPACT OF ADVERTISEMENTS ON BUYERS' BUYING BEHAVIOUR IN CHHATTISGARH

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This paper focuses on the position and effect of publicity on buyers' purchasing behaviour in Chhattisgarh. Many Chhattisgarh-based companies pay full attention to ads and their goods and services through compelling media, which has adverse effects on their sales volume performance. They are not giving too much attention to a lot amount for advertisement in their annual budget for proper marketing and attracting or/and influencing targeted buyers'. With the help of advanced technological support, advertisements play a prime role in this competitive environment, that's the key requirement of the study. Survey research design to be adopted and involves a structured questionnaire for data collection and multiple correlation statistical tools to be applied. There is an excellent/meaningful and optimistic relationship between "independent variables' emotional response, the environmental response to the brand, brand" recognition and stimulating advertisement, and buyers' behaviour variable. The statistically significant proportion of all the independent variables has a favourable relationship with the buyer's purchase behaviour. According to the literature, the consumer must be thoroughly reached to understand their consumption pattern and actions towards goods and services if a successful advertisement needs a location. Their emotions strongly influence efforts that contribute directly to publicity, such as the support of consumers.

**Keywords:** Advertising, audience, emotional response, Buyers' buying behaviour, consumer, environmental response

#### 48. BIOSURFACTANTS AND THEIR APPLICATION IN ENVIRONMENT - A REVIEW

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Biosurfactants refers to surfactants from microbial origin and can be synthesized by several identified microorganisms including bacteria, yeast and fungi and are produced extracellular or as part of the cell membrane by bacteria, yeasts and fungi. Examples include *Pseudomonas aeruginosa* which produces rhamnolipids, *Candida* (formerly *Torulopsis*) *bombicola*, one of the few types of yeast to produce biosurfactants, which produces high yields of sophorolipids from vegetable oils and sugars and *Bacillus subtilis* which produces a lipopeptide called surfactin. Biosurfactants applications in the environmental industries are promising due to their biodegradability, low toxicity and effectiveness in enhancing biodegradation and solubilization of low solubility

compounds. They display excellent surface activity and emulsification properties with very low toxicity and higher biodegradability features as compared to chemical surfactants. However, more information is needed to be able to predict and model their behaviour. This review includes environmental applications of these biosurfactants for soil and water treatment. Full scale tests will be required. The role of biosurfactants in natural attenuation processes has not been determined. Very little information is available concerning the influence of soil components on the remediation process with biosurfactants. As most of the research until now has been performed with rhamnolipids, other biosurfactants need to be investigated as they may have more promising properties. Role of Biosurfactants was reviewed in the field of Agriculture, industrial production and other economic growth works.

**Keywords:** Biosurfactants, microorganisms, emulsification, toxicity, biodegradability, rhamnolipids

#### 49. A THEMATIC STUDY ON QUALITATIVE RESEARCH METHODOLOGY

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This paper aims to provide a brief overview of the most common analytical approaches used in qualitative research by taking the perspective of a researcher and following the process of a qualitative research analysis 'in practice' to address different research questions and test the corresponding hypotheses. In particular, the analytical approaches to (a) describe a phenomenon; (b) test for group differences; (c) investigate relationship; and (d) predict outcomes are presented. Hence, the following topics are included: (a) measurement levels and corresponding indices of central tendency; (b) t-test, ANOVA and post hoc tests; (c) correlation indices; and (d) multiple regression analysis. Throughout the chapter, the need is emphasised for setting clear research questions guiding the formulation of specific hypotheses and the identification of the appropriate research design is emphasised. Statistical analysis should indeed be always considered not as an end in itself but as a mean to address research problems, and the selection of the most suitable analytical approach should follow and match the specific research questions. Systematic analyses of research works can be useful to researchers in two main ways – to investigate already-existing messages (e.g., social media postings, news stories) and to draw conclusions about research participants from their responses (e.g., open-ended questionnaire responses, focus group contributions, TAT outcomes). Two types of research methods commonly used to analyze messages are content analysis and thematic analysis. Both involve the coding of content in a precise, careful manner. Content analysis is a typically deductive, quantitative technique of measures applied to messages in an objective, reliable manner. Two content analysis options include human coding and computer coding of message content. Thematic analysis

involves an emergent and interactive process of interpretation of a set of messages, with some thematic structure as the typical outcome. Applications of these two sets of methods have been wide-reaching and varied. Further, due to their different approaches, they may be viewed as complementary.

**Keywords:** Reviewing themes, referential adequacy, the audit rail.

## 50. A STUDY OF THE KINDS OF BUTTERFLIES THAT MAY BE FOUND IN A SPECIFIC AREA OF BHILAI CITY, CHHATTISGARH, INDIA

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In the Indian state of Chhattisgarh's Bhilai City, a study on butterfly diversity was conducted. During the study period, a total of 112 individuals and 7 species of butterflies from 2 families were recorded at the study area's two sites for butterfly surveys, Maitri Garden and another site Sector-I Park. Nymphalidae was the most numerous families, accounting for 60% of all butterfly species recorded in the research area, followed by Pieridae (40%) respectively. In Maitri Garden, there were 57 butterflies, the most, while in Sector- I Park there were 48, the least. In the study area, there were 10 different species of butterflies, of which 4 were abundant, 2 were common, and 4 were rare. In Maitri Garden, the Simpson Index of Diversity was highest. Further studies may be done to understand more about this diversity and to record it for the protection and butterfly park also because study region is where a diverse variety of butterflies.

**Keywords:** Butterfly, Bhilai, Garden, Diversity, Park

## 51. BLENDED LEARNING: NEW APPROACH IN TEACHING

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Education is the building block of any nation it builds skills, habits, knowledge and mind of the child. The outbreak of the coronavirus (COVID-19) has been declared by WHO. This paper discusses impact of covid-19 and on college education in the Indian context. In this paper a literature review is done. This is a five-component blended learning strategy referred to as Discover, Learn, Practice, Collaborate and Assess (DLPCA)

**Keywords:** Covid-19, School, Education, Blended learning, Virtual Classes

## 52. THE ROLE OF ENGLISH LITERATURE IN EDUCATION FOR SUSTAINABILITY

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Globally, societies are facing various challenges which will shape our quality of life and future prospects. This issue can be addressed by education for sustainability (EFS), through a change in the education system. In this, higher education has a pivotal role to play by enabling the learners to take on these challenges with the help of enough potential they possess. EFS covers all education whether it is formal, informal, or professional, with the help of learning and by doing changes in the process, people will be able to analyze and take the decision wisely by keeping in mind the future of the global community. Various agencies have come forward to participate in the movement. It focuses on how can we respond to sustainability imperatives by rejuvenating old techniques and courses and by re-establishing our priorities and community practice. The type of universities that encourage this practice has been rewarded for their innovative effort.

**Keywords:** Society, Challenges, Community Education, Sustainability

## 53. PHYSIOCHEMICAL ANALYSIS OF SOIL FROM INDUSTRIAL AREA HATHKHOJ, BHILAI (DURG DISTRICT)

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The quality of soil is the most important factor for the crop production. On the basis of physiochemical analysis of various parameters like pH, electrical conductivity, total organic carbon, available phosphorus, available potassium etc, indicated that the soils of industrial areas HATHKHOJ of Bhilai in Durg District is not beneficial for the growth of plants due to deficiency of micro and macro nutrients, alkalinity of soil and low pH of soil is responsible for the hindrance of plant growth, its required chemical fertilizers for the improvements of physiochemical parameters of soils for the best crop production.

## 54. SOFTWARE TESTING IMPLEMENTATION IN INDUSTRY 4.0: A PERSPECTIVE

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Many emerging technologies are providing digital solutions in various stages of industrial development. New era industrial stages belong to industry 4.0. Many companies do not know how to implement new technologies in their work. Our aim of work is to know the working patterns of industry 4.0 technologies. In this paper, we perform a survey in 42 companies to study the implementation of technologies. Final results show that industry 4.0 is a frontend technology in many companies. Software testing is a process that is used to measure the quality of software developed and also the process of exposing errors in a program. This is a useful process of executing the program with the intention of finding the bug. Data analysis is completely devoted to Industry 4.0 and software testing is an essential part of industry 4.0. In India, very less work is done in industry 4.0. Ai of our work is to provide a detailed analysis of industry 4.0 and its technologies. Software testing and its implementation is also discussed in this paper.

**Keywords:** Software testing, industry 4.0, IoT, Big data, Cloud

## 55. A STUDY OF CLUSTERING ALGORITHM FOR STUDENT RESULT ANALYSIS AFTER AND BEFORE COVID -19

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In this paper using clustering method use for students' school academic performance are measured by exams result. So by the taking of detail result of student from the different district, we can predict about the result and by taking the result before covid -19 and after covid-19 exam result, we can compare the final result of data. Data clustering is the process of grouping a set of objects that objects is the same group are more similar to each other than to those in other groups By using data clustering technique we can predict which result is best. And get the idea for betterment of education.

**Keywords:** Data clustering, k-mean, academic performance, covid-19, etc.

## 56. कक्षा 12 वीं के विद्यार्थियों की शिक्षा के प्रति अभिवृत्ति पर एक अध्ययन

**Dr. Manoj Kumar Maurya**

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प्रस्तुत शोध पत्र में कक्षा 12 वीं के विद्यार्थियों की शिक्षा के प्रति अभिवृत्ति पर एक अध्ययन किया गया है। इस अध्ययन हेतु न्यादर्श के रूप में शासकीय एवं अशासकीय उच्चतर माध्यमिक विद्यालयों के 200 विद्यार्थियों का चयन किया गया। आंकड़ों के संग्रहण हेतु डॉ. एस. एल. चोपड़ा द्वारा निर्मित शिक्षा के प्रति अभिवृत्ति मापनी का उपयोग किया गया है। सांख्यिकीय परीक्षण हेतु "टी" परीक्षण किया गया तो परिणाम स्वरूप पाया गया कि शासकीय एवं अशासकीय विद्यालय के कक्षा 12 वीं के विद्यार्थियों की शैक्षिक अभिवृत्ति में सार्थक अंतर नहीं पाया गया।

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