International Conference on Research Innovations & Challenges

ICRIC 2023

19 – 21 January 2023

Created & Powered By

Centre for Research & Training (CRT)
National Foundation for Entrepreneurship Development (NFED)
Coimbatore, Tamil Nadu, India

KVJ. Prof. Dr. R. Ganesan

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Greatness of Any Research Work is Only through its Wider Applicability

- KVJ. Prof. Dr. R. Ganesan

Conference Proceedings

Acknowledgements

On behalf of the Presidium of NFED, I express my sincere thanks to our Conference Chair & Chief Patron, Hon'ble Chairman, Karma Veer Jyoti. Prof. Dr. R. Ganesan for successfully organizing and hosting this international conference.

I wholeheartedly thank the Conference Convener, Prof. Dr. R. Rajeswari and Conference Co-Convenors; Prof. Dr. V. Sunitha, Asso. Prof. Dr. Kiran Lata Dangwal, Prof. Dr. Esha Jain and Asso. Prof. Dr. Clarise Mostert for their efforts and contribution to this three-day international conference.

I express my hearty thanks to all the Honourable International Keynote Speakers; Prof. Dr. Nazrul Islam, Prof. Dr. Patrick Oviasuyi, Asso. Prof. Dr. Araby Madbouly and Dr. Baby Sam Saamuel for their august presence and enthralling keynote deliverance.

I heartily thank the Revered National Keynote Speakers; Prof. Dr. Dinesh N Awasthi, Prof. Dr. Vandana Gupta, Ms. Renisha Winston, Asso. Prof. Dr. K. Vijaya and Asst. Prof. Dr. K. Kalaivani for their benign presence and enlivening keynote address.

I also express my sincere thanks to the Distinguished Valedictory Speakers; Prof. S. Magesh, Ms. Theviga Rani Wemel, Prof. Dr. P. Chitra, Asso. Prof. Dr. Luzaan Hamilton and Mr. Owaiz Khan for their esteemed presence and exuberant valedictory address.

I extend my profound gratitude to all the Session Chairs from different states of India for their invaluable time and scholarly services.

I also express my sincere thanks to the organizing secretaries and organizing committee members and facilitators of NFED for their continuous support in successfully conducting this three-day international conference.

Our sincere thanks to all the Authors and Research Scholars from various academia and organizations for submitting their invaluable research contributions to this international conference.

We thank the media and friends for their constant encouragement and support for publicizing ICRIC 2023 across their networks and groups.

Sd/-

Ms. Ramya Kandavel
Conference Director, ICRIC 2023 & Executive Chairman, NFED

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Conference Blurb

The reality of conducting any research is to impart wisdom and growth in a society. The research contributions in the past have witnessed only interim growth and societal development. This situation continues due to unidisciplinary focus, wherein lack of integration of research across various disciplines remains untapped in many areas. The current global scenario is ever-changing and demanding, wherein the sustenance and livelihood will be more challenging in the ensuing years. Furthermore, the knowledge sharing through congregation of research across inter-disciplines and multi-disciplines for upbringing the overall socio-economic development and progression is quite indispensable.

Today's globalization has nurtured the advancements in science & technology, entrepreneurial innovations, ergonomic practices, etc. due to IT interventions and digitalization. This has triggered the new gamut in the research arena, and it needs to address the upcoming trends in all sectors towards bringing in a holistic development. Hence, there is a need to holistically gauge the overall requirements of mankind in terms of achieving socio-economic sustenance and global stability. Keeping these above-mentioned aspects in view, the international conference intends to focus on the paradigms of research innovations in the disciplines of sciences, engineering, technology, entrepreneurship, management, arts, humanities, and other inter-disciplines to have wider knowledge integration. Also, to envisage the future challenges through a radical approach for the betterment of mankind. Hence, the conference has been officially coined by the Conference Chair & Chief Patron as 'International Conference on Research Innovations & Challenges' – ICRIC '2023 to garner the inter-disciplinary and multi-disciplinary research contributions across the nation and globe. This international conference has been created and powered by Centre for Research & Training (CRT) – A Growth Action Unit under the renowned National Foundation for Entrepreneurship Development (NFED), Coimbatore, Tamil Nadu and officially scheduled on 19-21 January 2023.

Sd/-

KVJ. Prof. Dr. R. Ganesan
Conference Chair, ICRIC 2023
&
Chairman, NFED

Conference Objectives

To highlight the holistic research innovations in accordance with the current trends and future challenges for bringing in the socio-technological transformation

To congregate the research trends across various domains for upbringing socio-economic development and sustenance

To act as a global platform for knowledge sharing of various research contributions towards societal upliftment and global development

To encourage and promulgate the research acumen of young students, budding researchers, scholars, academicians, entrepreneurs, industrialists and practitioners

NFED is a unique organization which is predominantly into promulgating entrepreneurship cult across the nation. NFED is driving and thriving on socialistic notion with righteous academicians, corporate citizens and entrepreneurs in its fold, which is established as virtual organization, since 2003 and registered as a Trust on 7th November 2013 towards accomplishing its mission 'In Pursuance to Create Socio-economic Sustenance through Entrepreneurship Development'. It is headquartered at Coimbatore District, Tamil Nadu and pertinent information regarding activities is floated in its aforementioned official websites.

NFED primarily aims in creating enterprising communities at large in Schools, Colleges and Varsities through its training and development activities, faculty development programmes on research and entrepreneurship development, awareness, workshops, refereed conferences, seminars, etc. pertaining to Management Development, Research Emancipation, Technology Innovation and Entrepreneurship Development. It frequently engages in research and development activities by publishing research articles, book chapters and edited books on holistic research, which congregates the disciplines like, engineering, technology, sciences, management, arts and humanities and women development. It also recognizes the talents of teachers, academicians, researchers, professionals, entrepreneurs (including social entrepreneurs), practitioners, freelancers, etc. throughout the globe through its National Awards since 2010.

NFED encourages the entrepreneurial spirit of youths and facilitates them with opportunity guidance. Also, serves under a glocal perspective to bring in prosperity by and large to foster entrepreneurial progression amongst all communities in general and women in particular, across the nation. It has associated and collaborated with academia including, schools, colleges, varsities, etc. and also with national and international organizations. NFED has instituted numerous programmes hitherto towards promulgating entrepreneurship development, career development, employability skills, research publications, women empowerment, etc. Thus, to promulgate entrepreneurship development and research & development, the presidium of NFED has constituted two apex units on 7th November 2015 namely NFED Business Facilitators Forum (NBFF) – A Strategic Action Unit under NFED and Centre for Research & Training (CRT) – A Growth Action Unit under NFED respectively.

Centre for Research & Training (CRT)

Centre for Research & Training (CRT) is a growth action unit under National Foundation for Entrepreneurship Development (NFED) initiated on 7th November 2015 with a goal to bring in quality research and promulgate enterprising faculties within the globe. CRT aims to bring in research and development climate through addressing mainstream aspects of research such as research structuring, research insights, publication process and publication strategies, thereby creating and nurturing research acumen within the aspirants across academia and industry. In addition to this, it also frequently engages in conducting Faculty Development Programmes (FDPs), Research Orientation Programmes (ROPs), Quality Publications (QPs) through infusing the importance of research and development. CRT has delivered more than 100 sessions and conducted numerous conferences, seminars, webinars, research workshops and faculty development programmes for understanding the new vistas in research and facilitating research career of academicians, scholars, practitioners, etc. at national and international levels.

NFED Business Facilitators Forum (NBFF)

NFED Business Facilitators Forum (NBFF) is a strategic action unit under National Foundation for Entrepreneurship Development (NFED) initiated on 7th November 2015 with a goal to congregate entrepreneurs to create an entrepreneurial cult across the globe and foster entrepreneurship development process. NBFF aims to bring in an entrepreneurial climate through encouraging youths and interested individuals to vent into entrepreneurial activities by providing the platform for fulfilling their business aspirations. Furthermore, to act interfacing plank for enhancing their motivation and inclinations to become prosperous and potential entrepreneurs. In addition to this, it also insists on business growth through the concept of interdependence by creating channels and integrating entrepreneurial talents for collective existence, sustenance and survival. NBFF has delivered more than 100 sessions and conducted numerous national seminars & workshops, international and national webinars in entrepreneurship fundamentals & emerging trends, facilitating entrepreneurship development among teaching faculties and promulgating entrepreneurial acumen of students across the nation.

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KVJ. Prof. Dr. R. Ganesan

Karma Veer Jyoti. Professor Dr. R. Ganesan earned his doctorate from the reputed IIT Delhi with a special focus on Entrepreneurship Development. He possesses more than two decades of research experience in the field of entrepreneurship and management. He has served in different academia ranging from Deemed Varsities, Engineering Colleges, Arts & Science Colleges, B-Schools, and International Varsities. He has more than 70 research contributions to his credit, which are published in refereed and indexed journals, books, book chapters, monographs, and conferences. He is a global author in Women Entrepreneurship, whose research papers are listed in Google Scholar and indexed in ISI (AHCI & ESCI), MLA Citations, Scopus, EBSCO, Cabells' Directory, etc. He has authored two books (women entrepreneurship development and insurance management), which have been published at Germany and published 26 edited books. He is serving as editorial member and reviewer for numerous journals and possesses more than 20 years of editorial experience. He has edited more than 780 research articles and chapters to his credit, which includes his editorial experience across refereed and indexed journals, conferences, and book chapters at national and international levels. He has organized and hosted 3 national conferences, 6 international conferences, 4 international seminars and conducted 45 faculty development programmes (FDPs) respectively. He has delivered more than 229 national and international sessions (including webinar sessions) on Research & Development (Research Insights, Research Structuring, Publication Strategies, Statistical Insights, Crafting Literature Review and Publication Prospects), Entrepreneurship Development, Managerial Skills, Career Development, Self-Management, Design Thinking, Employability Skills, Digital Marketing, etc. and inaugurated many Entrepreneurship Development Cells (EDCs) across the nation. He is the Chief Mentor for certification programs on E-Entrepreneurship and Innovation & Creativity for Business. He has a deep inclination towards upbringing social sensation across the communities and has hosted & organized 32 national award ceremonies for recognizing national and global talents. Also, he has exorbitant interest in Tamil Literature, wherein he has written and published Agakurals (Voice of Self) for civility and few Traditional Poetries for societal transformation. In commemorating his laudable academic, research and societal transformational services through upbringing entrepreneurship development he has been conferred with the prestigious title Karma Veer Jyoti (KVJ) by Indian Confederation of Non-Governmental Organizations (iCONGO), New Delhi, India on 22nd March 2015. He is

bestowed with the coveted Lifetime Achievement Award – Researcher & Scholar Icon 2017 powered by Jupiter Publications Consortium (JPC) in association with Ingenious Cyberonics Pvt. Ltd., Chennai, Tamil Nadu, India on 22nd July 2017. He is the recipient of PFLA Excellence Award for his 'Outstanding Service to Education and Entrepreneurs' community from People First Leadership Academy (PFLA), Bengaluru, Karnataka on 19th January 2019. He has been conferred with 'Order of Eminence' the highest honour for his global contribution to research, teaching, and training in Entrepreneurship Development by the Presidium of NFED in its 10th National Teachers' Day Awards on 5th September 2019 at Coimbatore, Tamil Nadu. He has been conferred with the Prestigious MTC Global Distinguished Teacher Award in Entrepreneurship Development in the 9th World Edu Summit organized by Management Teachers Consortium (MTC) Global on 7th September 2019 at Bengaluru, Karnataka. He has been bestowed with the prestigious Pride of India Award by South Asian Institute for Advanced Research and Development (SAIARD), Kolkata, West Bengal on 16th October 2022. He is the Founder Chairman & Presidium Chair of the renowned National Foundation for Entrepreneurship Development (NFED), Coimbatore, Tamil Nadu. Also, he is the Founder & Chair of NFED Business Facilitators Forum (NBFF) – A Strategic Action Unit, Centre for Research & Training (CRT) – A Growth Action Unit and NFED Publications respectively under the ambit of NFED. He is one of the Board of Directors at Unelma Solutions Pvt. Ltd. (USPL), Bengaluru, Karnataka, and Founder & Chief Executive Officer of Technovate Educational & Consulting Services (TECS), Coimbatore, Tamil Nadu.

Conference Director & Patron

Mrs. Ramya Kandavel

Mrs. Ramya Kandavel earned her Master's in Statistics from University of Madras, Chennai and Master's in Applied Psychology from Bharathiar University, Coimbatore. She holds a Diploma in Transactional Analysis from South Asian Association of Transactional Analysts (SAATA). She is a Psychological Counsellor and a Master Practitioner in Neuro-Linguistic Programming. Her expertise as a counsellor includes Personal One-to-One Counselling, Psychotherapy, Stress Management and Dream Interpretation. She has published her research work as book chapters in edited books and presented papers in numerous research conferences. She commenced her professional career in the ITES Sector and possesses more than 19 years of administrative experience at various corporates and academic institutes. She joined as an active member in the renowned National Foundation for Entrepreneurship Development (NFED) and has facilitated its national events as Event Anchor, Programme Coordinator, Programme Director, Chief Coordinator and Conference Director. She has hosted and organized 6 international conferences, numerous faculty development programmes (FDPs) and webinars focusing on research & development, entrepreneurship development, digital marketing, etc. at national and international levels. She is the Executive Chairman & Director of NFED Trust, Coimbatore, Tamil Nadu. Also, she is functioning as the Chief Coordinator and Member Secretary of NFED Business Facilitators Forum (NBFF), Centre for Research & Training (CRT) and NFED Publications. She oversees the entire administrative activities of NFED and promulgates its social sensational programmes across the nation and globe.

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ICRIC 2023

19-21 January 2023

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19-21 January 2023

Conference Highlights

The Three-Day International Conference on Research Innovations & Challenges (ICRIC '2023) has completed numerous deliberations in terms of keynote address, paper presentations and participation across the globe.

I intend to place the conference highlights as per the will of Conference Chair & Chief Patron, KVJ. Prof. Dr. R. Ganesan, Founder & Chairman, National Foundation for Entrepreneurship Development, Tamil Nadu.

This three-day international conference has exhibited 14 Keynote Addresses delivered by Keynote Speakers from United States of America, Malaysia, Oman, Bangladesh, South Africa, Nigeria and from various states of India namely Tamil Nadu, Karnataka, Punjab, and Gujarat respectively. Another important highlight of the conference is it has given enormous importance to women academicians which includes, conference director, conference convener, conference co-conveners, conference organizing secretaries, conference committee members, and conference session chairs, wherein women constitute the maximum numbers. Also, majority of the participation to our ICRIC 2023 are from women. This indicates that National Foundation for Entrepreneurship Development (NFED), Coimbatore, Tamil Nadu has been empowering women at all spheres and regards them as the potential force for nation building and global socio-economic transformation.

There are three main tracks in this international conference namely Science, Engineering & Technology (SET), Management, Innovation & Entrepreneurship (MEI) and Arts & Humanities (AHU). The are 27 streams under these following tracks:

1) Under SET Track there are 15 streams namely Physics, Chemistry, Mathematics, Botany, Zoology, Biotechnology, Medicine, Pharmacology, Information Technology, Computer Science & Engineering, Electrical & Electronics Engineering, Electronics & Communication Engineering, Earth Sciences, Geotechnology, and Computer Applications wherein it included 64 paper presentations.

2) Under MEI Track there are 7 streams namely General Management, Organizational Behvaiour, Human Resource Management, Entrepreneurship Development, Marketing, Finance and Commerce, wherein it included 40 paper presentations.

3) Under Arts & Humanities there are 5 streams namely History, Geology, Education, Fashion Design and Literature, wherein it included 38 paper presentations.

There are 142 presentations have been scheduled across 10 parallel tracks distributed amongst 20 paper presentation sessions, which are chaired and moderated by 22 session chairs from India and Abroad. The session chairs are from Tamil Nadu, Puducherry, Andhra Pradesh, Karnataka, Punjab, Haryana, Chandigarh, Uttar Pradesh, Manipur, and Sweden respectively. The e-proceedings have covered 100 abstract submissions across the world.

A total of 117 online paper presentations have been completed covering 82.39 percent, which is one of the remarkable achievements and indomitable accomplishments of our three-day International Conference (ICRIC '2023).

A total of 226 registered participants across 21 states and 4 union territories constituting 69.44% of India's academic participation in this international conference. Also, 8 countries namely United States of America, Sweden, Malaysia, Oman, Nepal, Bangladesh, South Africa, and Nigeria have participated in this international conference.

The research presentations have provided all of us with adequate knowledge sharing and intellectual enlightenment. The keynotes by various national and international speakers have highlighted on Technology Innovation, Digital Transformation, Scientific Promulgation, Entrepreneurship Development, Biotechnological Applications, Pharmacology Practices, Botanical Research Perspectives, Artificial Intelligence, Energy Management, Educational Transition, Business Development, etc.

I am sure the scientific inventions, technological innovations, management process, artistic approaches, research insights and humanistic views discussed in this ICRIC 2023 have been truly intellectual and indispensable to the global community for sustenance and growth.

This knowledge sharing platform paves the way for a holistic transformation in our research innovation endeavours. Also, ICRIC 2023 has resurged all of us to enrich our research potential and its promulgation through righteous research contributions towards achieving overall socio-economic growth and sustenance of our nation and across the globe.

My hearty congratulations go to our Conference Director, Mrs. Ramya Kandavel for her exorbitant efforts and meticulously conducting and successfully hosting this three-day ICRIC 2023.

My sincere thanks to Deputy Technical Head, Mr. Jaswin Kumar N. R. for his impeccable support to this virtual conference to become a grand success.

My best wishes to all the keynote speakers, session chairs, conference convener, conference co-conveners, organizing secretaries, organizing committee members, paper authors & presenters and participants of this international conference.

Thank You

Sd/-
KVJ. Prof. Dr. R. Ganesan
Conference Chair & Chief Patron, ICRIC '2023

Paper Presentation Awards

Track 1: Science, Engineering & Technology (SET)

First Position: TR1-ICRIC2023-SET-41

A Study on Air Quality Index Analysis and its Effects on Health
Dr. Sonia Rathee, Mr. Ayush Kumar Singh, Mr. Harsh Chaudhary & Mr. Abhay Singh Rautela

Second Position: TR1-ICRIC2023-SET-19

Challenges Faced in Solid Waste Management at Rajam Municipality, Andhra Pradesh during COVID 19 Pandemic – An Overview
Ms. Gunde Padma & Dr. Musini Venkateshwarlu

Third Position: TR1-ICRIC2023-SET-26

Brain Tumor Classification using Crow Search Lion Exploration Whale Based Optimization Algorithm in Digital Image Processing Application
Dr. B. Leena & Mr. M. K. Rahgul Poopathi

Track 2: Management, Entrepreneurship & Innovation (MEI)

First Position: TR2-ICRIC2023-MEI-40

A Study on Students' Perceptions of the Entrepreneurial Spirit at a South African University
Dr. Luzaan Hamilton & Dr. Clarise Mostert

Second Position: TR2-ICRIC2023-MEI-21

An Empirical Study on Influence of EI on Remote Working and Employee Performance
Mr. Vipin C Nair & Dr. R. Lathangi

Third Position: TR2-ICRIC2023-MEI-03

Influence of Technological Factors on Individual Online User Behaviour of Social Media Consumers
Dr. A. Bharathy

Track 3: Arts & Humanities (AHU)

First Position: TR3-ICRIC2023-AHU-27

Design Intervention through Handwoven Pattu Weaving – An Overview
Dr. Radha Kashyap & Ms. Shruti Singh

Second Position: TR3-ICRIC2023-AHU-14

Assessment of Eating Attitudes and Body Shape Concerns among Youth – An Empirical Analysis
Dr. Ravneet Sandhu & Ms. Harleen Kaur

Third Position: TR3-ICRIC2023-AHU-03

A Correlation Study on the Thickness and Compression Properties of Commercially Available Woven Surgical Gowns Measured by Fabric Touch Tester and Kawabata Evaluation System
Ms. Nazeem Banu. M

Conference Paper Abstracts

A Study on Pragmatic Approach to Smart Crop Storage System

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Abstract

The most important step after the production of food grains is the storage and post-harvest operations. Although post the green revolution era, India has seen a surreal increase in production of food grains, but all these decades there have been tons of post-harvest losses. Moreover, nearly 30 million tons of food grains producedin India are lost in a variety of post-harvest operations, wherein 60 percent of this comes from losses in grain storage. Hence, to reduce crop storage losses, the researchers intend to develop a system that can estimate the shelf life of stored crops based on meteorological conditions in the warehouse. This can be accomplished by monitoring and tracking food grains in storage facilities. The product is based on the idea of assisting us in monitoring agricultural shelf life so that crops that are more prone to decay can be brought to market earlier thereby enhancing the supply chain management. The warehouses can utilize the system to schedule inspections to ensure crop health. Furthermore, this solution also benefits farmers by adding clarity to the process of renting out warehouse space and preventing them from being exploited.

E-ISBN: 978-81-954933-4-0

Quantitative Evaluation of Prognostic Tumor Markers in Patients with Gallbladder Cancer (GBC) in association with Biochemical Parameters during Pre and Post Intervention

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Abstract

The Gall Bladder Cancer (GBC) is most prevalent malignant tumor of biliary tract worldwide with shortest average survival rates and complete cure only by surgical resection. The study aims to identify the collective role of serologic tumor markers in relation to specific biochemical parameters defined for etiology and malignancy of GBC at both pre and post operative procedures in Uttarakhand regions. A prospective follow-up study was conducted at Shri Guru Ram Rai Institute of Medical & Health Sciences (SGRRIMHS), Dehradun, Uttarakhand. The diagnosed cases of GBC patients by histopathological and radiological examination coming to Surgical Oncology and Biochemistry departments have been included in the present research study. Also, the details with respect to socio-demographic profiles, co morbidity, family history and previous treatments are noted. The confirmation by blood tests like tumor markers: CA19-9, carcinoembryonic antigen (CEA), and CA125 levels are measured in GBC patients using an immunometric assay technique. In furtherance, the Tumor markers both pre and post operative procedures have been correlated with biochemical parameters (Hb, platelets, TLC, LFT, KFT). The Serum CEA and CA19-9 in GBC group is significantly lower when compared with those in follow up cases after chemotherapy ($P < 0.01$). CA125 levels has been comparable (p=0.09) and Diagnostic accuracy was highest with combination of CA19-9 and CEA. Furthermore, when compared with heme parameters, TLC (Total Leukocyte Counts) showed marked reduction post chemotherapy (p=0.014). The Serum levels of GBC specific tumor markers CA 19-9, CEA individually or in combination showed significant marked differences when compared in condition of pre and post intervention. The

TLC parameter reduction may predict challenging role of immunity and inflammation to comprehend effects of chemotherapy in GBC treatment. These may predict better evaluation of GBC patients in adjunct with radiological investigations. Conversely, for a better explanation, the present study needs to ensue with additional samples in same populations.

Comparative Analysis of Power Density in Plant MFC System using Various Grass Species

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Abstract

The plants deposit a considerable amount of organic matter into the soil by rhizodeposition. This fulfils the microbes' need of substrate in the soil. The microbes convert the organic matter producing electrons and protons. It is through considering these microbial reactions for electricity production we achieve sustainable source of energy, wherein the bioelectricity is generated by incorporating a plant microbial fuel cell. The three plant species which have been considered for their availability for producing bioelectricity are, *Cymbopogo citratus* (Lemon grass), *Setaria faberi* (Fox tail) and *Eleusine indica* (Goose grass). These plants are tested in a single chamber sediment type plant microbial fuel cell for the electricity production using carbon cloth as electrode material. In furtherance, these three species have showed a considerable open circuit voltage of 800 mV (day 102) for fox tail, 600 mV (109) for lemon grass and 410 mV (day 113) for goose grass respectively. Thus, the present study has carried out a comparative analysis of various grass species to produce electricity.

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Application in Grey Metric Space – A Mathematical Approach

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Abstract

A metric is a function that calculates the distance between any two elements of a set. The Grey sets can be thought of as an extension to fuzzy sets if characteristic function values are limited to values between [0, 1]. The ordered pair (ζ(U),d) forms a metric space and is called a Grey metric space. The application of grey sets in metric space as a mathematical tool can help solve issues with unclear and uncertain data. In this study, the researchers have speculated about how grey metric space is used in real-life situations. Also, created an algorithm to calculate the maximum possible distance between the two grey and also demonstrated its effectiveness with appropriate examples.

Ordering Fuzzy Numbers Using Radius of Gyration of Fuzziness Regions

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Abstract

The most important aspect for fuzzy numbers is their ranking and ordering, which ensures its applications in day-to-day life and many applied academic, industrial and governance models like decision-making, risk-analysis, optimization techniques, etc. Even though numerous researchers have presented various approaches, still a lot of interest and scope remains for further studies to address the weakness of the methods in literature. This paper suggests an index to rank fuzzy numbers that comprises of the convex combination of radius of gyration of the left and right fuzziness regions with an indicator of optimism, which represents the optimistic and pessimistic approach of a decision-maker. The proposed method can rank two or more fuzzy numbers simultaneously irrespective of the linear or non-linear reference functions. Furthermore, the proposed index consistently ranks the fuzzy numbers and their images, symmetric fuzzy numbers, and fuzzy numbers that describes compensation of areas respectively. The advantages of this method are illustrated through proper examples, which are common for a varied range of numerical studies and comparative reviews.

Fair Detour Domination Polynomial – A Mathematical Approach

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Abstract

The Dominating set and Polynomial of a graph have been always the topic of attention among researchers all over the world. The present study proposes parameter fair detour domination number and the concept of fair detour domination polynomial. A Fair detour dominating (FDD) set F ⊆ V (G) is a set that is detour dominating and any pair of vertices not in F has the same number of neighbours in F. Moreover, among such FDD sets, the set with least number of vertices is defined to be the $f\gamma_d$-set and its cardinality as the fair detour domination number $f\gamma_d(G)$. A FDD polynomial of a graph G is defined as $F\gamma_D(G, x)=\sum_{i=f\gamma_d}^{|V(G)|} f(G, i)x^i$, wherein f(G, i) is the number of FDD sets of cardinality i. Also in this study, the researchers intend to address several properties of FDD polynomial and compute FDD polynomial of several families and product of graphs such as Complete graph, Complete bipartite graph, Friendship graph, $K_n \rho K_1$ and so on.

Cross Subject Emotion Identification from Multichannel EEG Sub-Bands using Tsallis Entropy as a Feature to the K-Nearest Neighbor Classifier

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Abstract

Human emotion recognition remains a trending and challenging problem at the cross-section of various branches like brain-computer interface, neuroscience, and psychology. Electroencephalogram abbreviated as EEG is the direct measure of the changes in electrical activities occurring in the brain with the body's physiological changes. Therefore, EEG signals of emotions are more reliable and accurate at detecting emotions than non-physiological datasets, like text, speech, body language, facial expressions, etc. The number of studies examining brain dynamics for identifying emotional states using nonlinear techniques has significantly increased during the past several years. Multiple entropy measures have been used to analyze EEG for emotion identification. The present research findings suggest a simpler and enhanced technique for EEG-based emotion detection using the SEED dataset. Tsallis entropy features for q values 2, 3, and 4 have been extracted from signal's bands theta-θ (4-7Hz), alpha-α (8-15Hz), beta-β (16-31Hz), low gamma-γ (32-49Hz), and high gamma-γ (51-80Hz). These Tsallis entropy features computed are then used to train and test the KNN classifier for the identification accuracy of two emotional states, positive and negative. In this work, we obtained the best average accuracy of 79% and an F-score of 0.81 in low gamma frequency for the Tsallis parameter q=3. Moreover, we also observed the highest accuracy and F-score of 84% and 0.87. It has been observed that the anterior and left hemispheres perform better than the posterior and right hemispheres for emotion studies. The findings suggested the method that provides an improved performance that is highly competitive with existing techniques. Also, it provides the shortcomings and potential improvements.

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Restrained Star Edge Colouring of Some Graphs and its Application

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Abstract

The star edge colouring is a path-based colouring of graphs in which no path of length four should be bicolored and the minimum number of colours required to obtain such a colouring is referred to as Star chromatic index, χ_s' . This concept evolved from star vertex coloring of graphs, which majorly involved in computing accurate hessian matrices with reduced runtime. The researchers are inspired by this concept and also by restraining the condition further such that no path of length three should be bicolored, wherein they have obtained new bounds. In the present study, the restrained star edge colouring and exact value of its respective chromatic index, χ_{rs}' of several families of graphs such as cycle, tree, grid, etc. are exclusively explained with the usage of appropriate examples. In addition to this, an application of restrained star edge colouring in optimal utilization of storage spaces has been found, which also explains and ensures safe storage practises.

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Solving Fully Fuzzy Linear Programming Problems based on a Ranking Function

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Abstract

The linear optimization problem (LOP) is one of the most widely used techniques in the field of optimization. It has many applications in various scientific and technical fields, that include network analysis, operational research, etc. In linear programming problems (LPP), the parameters and constraints are crisp, but in real-world applications the parameters and constraints are uncertain. The issue of ambiguity, uncertainty, and imprecision arising in real-life problems can be solved by using fuzzy numbers. Although, several approaches have been put-out to solve fully fuzzy linear programming problems (FFLPP), the optimum solution remains an issue. This study suggests a new technique, which is based on a linear ranking function defined as the mean on the horizontal axis of the points on the left and right membership functions of the fuzzy numbers. The points divide the respective membership function in the ratio 2:3. The proposed method is quite convenient and reliable in comparison to the existing methods. The advantages of the proposed approach are illustrated through proper examples, which are common for a wide range of numerical studies. Also, the comparisons with several illustrative approaches that existed in the literature are carried out and concluding remarks are placed accordingly.

Arbuscular Mycorrhizal Fungal Inoculum as a Tool for Wasteland Management with Cropping

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Abstract

The wastelands or fallow (unused) lands are good source for increasing agricultural production to cater the need in future. These lands are mostly dry, polluted, and low in nutrients and need remediation. A field experiment has been carried out with inoculation of six indigenously isolated arbuscular mycorrhizal fungal (AMF) species and one introduced AM fungus on the growth and yield of *Capsicum fruitiscence* in a waste land in acid lateritic soil. A prior survey in nearby sesame field with conventional agricultural management practice has been conducted to compare AM status and soil conditions. All these seven AMF species are pure, and mass cultured as inocula and are applied in a waste field to grow chili. The growth parameters, yield, chlorophyll content, AMF spore count, and root colonization are measured 30 days apart. The Rhizospheric soil physical and chemical conditions are compared four months apart before and after cropping. It has been observed that except one indigenous AMF species, all AMF inocula enhanced the growth parameters than control, though showed significant variation within the treatments. It is to be noted that after the experiment, post-harvest soil has been recorded with enhanced NPK, pH and organic carbon compared to before cropping. Moreover, to evaluate the role of AM alone, the researchers did not use other manure or biofertilizers. The reason being addition of those may accelerate the process. Thus, for bioremediation and maintain soil sustainability AM are effective tool for conversion of wasteland to cropland within short time.

Phytochemical Screening, Food Value Analysis and Antioxidant Activity of Wild Fruit *Diospyros Melanoxylon* L. of Lateritic West Bengal

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Abstract

Fruits are the sources of fibre, vitamins and minerals, which provide important nutrients for the human health. The underutilized non-conventional fruits are consumable to the human beings, but relatively less palatable than other fruits like mango, apple, guava, orange, banana, etc. These fruits have lesser demand in the market. *Diospyros melanoxylon*, *Flacourtia indica*, *Phyllanthus emblica*, etc. are some of the wild edible fruits cultivated or grown mainly limited in ethno-communities in India. The genus *Diospyros* belonging to the family Ebenaceae has several uses such as edible fruits, valuable timber, ornamental uses, etc. The generic name is derived from the Greek word "Dios" means divine and "Pyros" means fruits. It is also known as 'Kend', 'Kendu' or 'Tendu'. The fruits of *Diospyros* sp. displayed potent free radical scavenging properties and also mitigated free radical induced DNA damage and fruits are used in the treatment of diarrhoea, dyspepsia, astringent, dysentery, and stomach disorders. The leaves are used as 'biri pata'. Also, it is used in the treatment of scabies and wound healing. These fruits may serve as a true euglycemic sweetener against sucrose. The antioxidant study revealed that the methanolic extract showed significant antioxidant potential, which played an essential role in biological activities. Nutritional compositions are also satisfactory. Thus, *Diospyros melanoxylon* can be effectively employed as an ingredient in health or functional food to alleviate oxidative stress and related health benefits. Furthermore, in this study the researchers have tried to screen the phytochemical characteristics, food value analysis and antioxidant activity of *Diospyros melanoxylon* L. fruits of lateritic West Bengal.

Challenges Faced in Solid Waste Management at Rajam Municipality, Andhra Pradesh during COVID 19 Pandemic – An Overview

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Abstract

The Covid-19 pandemic has affected solid waste management in the municipalities across India. The sudden increase in the domestic hazardous waste and addition of packing material have become difficult to collect, transport and process the waste for a municipality. Generally, the municipalities like Rajam have limitations of human resource, funds, and inefficient disposal with the existing solid waste management. The Rajam Municipality do not have space for proper hazardous waste disposal like no proper technology for collection, transportation, and processing of hazardous waste and financial constraints of the municipality to solve the ever-increasing quantity of waste produced from various sources, which are the causes of concern. Now with onset of pandemic it has become even more difficult to manage the waste generated. Furthermore, lack of knowledge amongst the people on handling and segregating the domestic hazardous waste effected the secondary segregation, recyclables channelization and waste processing in the facilities. Moreover, during the pandemic the sanitization works like spraying the disinfectants, monitoring the covid death and clearing the waste are also endorsed to the same set of workers. This makes it more difficult for proper solid waste management processing. This research study aimed at finding how a municipality like Rajam cope-up with the pandemic conditions. It also highlights existing issues faced during pandemic that can be solved. The findings of the study will enable policy makers to make wise decisions regarding waste management during future pandemic that will benefit local communities in Rajam Municipality.

A Study on Deep Learning Models for Real Time Image Identification and Classification

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Abstract

Deep learning techniques have been invented and applied in the identification and classification of various objects such as human faces, medical images, and real time objects and so on. With the advent of increasing surveillance data, image analysis of real time objects gained popularity. Several deep learning techniques have been applied for image identification and classification. The present study has conducted a detailed analysis of various deep learning models for real-time image identification and classification along with their strength and weaknesses is presented. The state-of-art for such analysis mainly include Support Vector Machine (SVM), Convolutional Neural Network (CNN), Region-based Convolutional Neural Network (R-CNN), Fast Region based Convolutional Neural Network (Fast R-CNN), Faster R-CNN, Mask Region Based Convolutional Neural Network (Mask R-CNN), You Only Look Once (YOLO). A number of versions of YOLO have been proposed for image identification. The results of the study have revealed that different models of CNN show higher accuracy in image detection over other models. In addition to this, it has been found that YOLO solves regression problems, which is better suited for image classification problem and identification locations (bounding boxes). Also, YOLO achieves highest accuracy in one-stage detection model.

Spatio Temporal Changes in Forestry and its Transition Analysis in Chikmagalur Region, India using RS and GIS Technologies

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Abstract

Forests play a very important role in absorbing and retaining the carbon dioxide. Also, it is anticipated that climate change will slow down the rate of absorption. The forest transition theory has provided a powerful framework for describing an important and previously neglected process of forest cover expansion. The present study aims to advance the understanding towards forest transition, which is about the shift from net deforestation to that of net reforestation over a given area during a certain period. In furtherance to meet their objectives the researchers have taken the case study of Chikmagalur Taluk from 2000 to 2022. Firstly, this research enriches forest transition theory with a meso-level exploration on forest land change using geospatial techniques. Secondly, it identifies the sub-type of forests—the artificial plantation, which is considered influential on performance of forest's carbon sequestration. Thirdly, it adds knowledge on forest transition pathway at an intra-urban scale through the identified significance degree of forest transition dynamics, which implies that economic development matters and different dimensions of economic impact differently on forest transition. The technologies such as remote sensing and geographical information system are capable of capturing large-range and long-time span change of land-use/land-cover, which help to display and quantify forest transition across time periods. This framework illustrates that carbon sequestration tends to be comparatively lower in agroforestry transitions, and biodiversity recovery is lower in industrial plantations. Thus, spontaneously regenerating forests tend to have relatively high biodiversity and biomass but provide fewer provisioning and economically valuable services. Ultimately, this framework can guide the future research, describe actual and potential changes in ecosystem services associated with different types of transitions, and promote management plans that incorporate forest cover changes with the services and benefits.

A Comprehensive Study of Soil Quality Assessment in and around Turkapally Village, Medchal-Malkajgiri District, Telangana, India

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Abstract

Soil quality plays a crucial role in agriculture and human health. The reason being crop yields accounts for soil enrichment. The production of crops with nutrient value is important as it directly impacts the eco-system in terms of consumption especially on humans' health. The soil without required quality impacts the agricultural produce, wherein it is subjected to pollution and causing health deterrence. Keeping this in view, the study aimed to assess the quality of soil in and around the Turkapally village, Medchal – Malkajgiri district, Telangana, India. The soil samples are collected randomly from 7 sampling stations located in Turkapally village, Telangana. Moreover, different laboratory methods are used to estimate the soil quality assessment. Based on chemical indicators, analyzed the various parameters such as pH, Conductivity, Organic Carbon, Available Nitrogen, Phosphorous and Potassium, Exchangeable Calcium, Magnesium and Micronutrients (Cu, Zn & Mn) and Heavy Metals. The study intends to estimate the micronutrients, heavy metals and other parameters, which has its impact on crops and human health. Also, to find out the possibilities to reduce the heavy metal pollution load and increase the soil quality and crop yields.

Brain Tumor Classification using Crow Search Lion Exploration Whale Based Optimization Algorithm in Digital Image Processing Application

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Abstract

Medical image processing is a fast-developing area in the current days, wherein various techniques are used in the detection and treatment of diseases. The medical imaging techniques are X- Ray, CT, MRI, PET, Gamma, Ultrasound, etc. The most used imaging tool to review brain tissue is Magnetic Resonance Imaging (MRI). Moreover, classification and segmentation play a vital role in detecting brain tumor in the medical applications. It helps the doctors in making accurate diagnosis of affected people. In the recent years, deep learning techniques are used in medical imaging and helps in diagnosing diseases. This research study intends to exploit the classification technique that involves three steps such as (i) segmentation of images, (ii) feature extraction and (iii) classification of images. The noise removed images are sent to the segmentation process, wherein Adaptive CLFAHE and GLCM are used for segmentation process and extracting features respectively. Furthermore, the extracted features are subjected to classification techniques. This research work contributes to the optimal selection of the hidden neurons. In furtherance, the Deep Belief Network is used, and optimization is carried out using the Crow Search Algorithm, Lions Algorithm and Whales Optimization Algorithm. The Crow Search Lion Exploration Whale Optimization (CSLEWO) algorithm hybrids the concept of Crow Search Algorithm (CSA), Lion Algorithm (LA) and Whale Optimization algorithm (WOA). Finally, the performance of the proposed CSLEWO is compared over the other methods with certain performance measures and optimization results exhibit an accuracy of 93 percent.

Assessment of Heavy Metals in Groundwater of Agricultural Fields in Karnal District, Haryana, India

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Abstract

Groundwater is a very important resource, and its contamination is of serious concern. The present research was conducted to determine the heavy metal concentration in the groundwater of agricultural farms in different blocks of the Karnal district. The groundwater samples are collected from 59 tube wells located in the six blocks of Karnal district namely Indri, Nilokheri, Karnal, Gharaunda, Assandh, and Nissing during the pre-monsoon season (May-June 2022). The water quality parameters like temperature, pH, EC, total dissolved solids (TDS), turbidity and heavy metals viz. Arsenic (As), Cadmium (Cd), Copper (Cu), Zinc (Zn), Iron (Fe), and Lead (Pb) have been analyzed using standard methods. The results showed that the pH is ranged between 7.3-8.8, temperature 27.4-34.2^{0}C, TDS 110-4010 mg/l, EC 220-8080 µS/cm, and turbidity 0.01-8.71 NTU. The concentration of Arsenic (As) varied between BDL-0.20 mg/l, Cd 0.02-0.03mg/l, Pb BDL-0.16 mg/l, Cu BDL-0.04 mg/l, Fe BDL-2.5 mg/l and Zn 0.02-5.17 mg/l. This research study will help the farmers with some alternative mechanisms in terms of crop growing, utilization of types of fertilizers and amendments in the agricultural soil. In some cases, it may also safeguard the health of those farmers and their families who are living in the farmhouse to gain awareness with regard to using the ground water without any treatment.

Impact of Industrial Pollution on the Groundwater Quality of Rai Block of Sonipat, Haryana, India

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Abstract

The industrial pollution affects the ground water quality and it has become the major concern in many areas in a country like India. Hence, there is a need to assess the ground water quality with regard to human consumption. This present research intends to assess the groundwater quality of Rai block of Sonipat district, Haryana. The study has been carried out by collecting 50 samples from different sites around the industrial area to estimate the impact on the surrounding population annually in 2021 for pre-monsoon, monsoon and post-monsoon season. The water quality parameters like temperature, pH, EC, total dissolved solids (TDS), turbidity and heavy metals viz. Chromium (Cr), Cadmium (Cd), Copper (Cu), Zinc (Zn), Iron (Fe), and Nickel (Ni) are analyzed using standard methods. Moreover, the results showed that the range of pH is between 7.2-8.0, temperature 16.2-36.7ºC, TDS 886-1692 mg/l, EC 1341-2752 µS/cm, and turbidity 0.01-2.8 NTU. Moreover, heavy metals such as chromium is in the range between BDL-2.10 mg/l, Cd 0.11-0.5mg/l, Ni 0.01-0.4 mg/l, Cu BDL-10.2 mg/l, Fe 1.3-33 mg/l and Zn 0.03-29 mg/l. The analysis of water quality parameters including heavy metals like Cd, Cr and Ni are found to be comparatively high in the pre-monsoon season.

Sustainable Utilization of Agricultural Residues for Production of Value-Added Materials – A Conceptual Overview

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Abstract

Energy plays a vital role in the sustainable development and socio-economic growth of any country. The fossil fuels accounts for the major source of energy to meet the global energy demands. However, diminishing fossil reserves, growing population and urbanization leads to further increase in energy demand by 2025 and this demand will grow nearly 50 percent in terms of consumption requirements. In this context, biomass resources being renewable, available in abundant amounts and are eco-friendly, which helps to mitigate the climate change and reduce the emission of greenhouse gases. In the recent years, biomass sources especially agriculture residues including unwanted plants or weeds, rice husk, rice straw, sugarcane bagasse, litters, and livestock are of great attention towards the production of biofuels and bio-chemicals. Moreover, efficient bioconversion technologies and innovated approaches required to commercialize the utilization of waste to energy. Keeping this in view, the present study provides a conceptual understanding about the potential of agricultural residues and their current status through a complete review of various research studies conducted on the production of biofuels, bioenergy and biomaterials.

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Extraction of Natural Protein (Keratin) from Waste Chicken Feather for the Development of Cosmetic Products

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Abstract

Keratins are insoluble structural proteins with highly crossed linking, which constitutes the major components of tough protective tissues, such as hair, wool, feather, horn, and nail, and so on. The chicken feathers having huge amount of keratin protein content and become a suitable protein source. Also, the reducing agents used are thioglycolic acid and sodium sulfide. Once, the feathers are dissolved in reducing agents, ammonium sulphate solution is used for precipitation of protein. The precipitated protein is then washed several times with water and protein has been subjected to separation by centrifugation and freeze drying. The percentage of keratin yield has been found to be in the range between 23 to 82 percent in different extraction conditions. The extracted keratin is further analyzed by Biuret Test, FT-IR, XRD and TGA. The Biuret Test and FT-IR studies have been performed to confirm the nature of protein. Moreover, XRD and TGA have been used to know the physical characteristics of the regenerated protein from chicken feather. A general factorial design has been applied to both extraction processes using Design Expert software and linear regression model has been obtained through growing the individual effect of extraction temperature, time, NaOH concentration and their interaction in the entire extraction process. The optimum condition for extraction of keratin protein from chicken feathers has been found to be 5gram feather, 0.75 NaOH and 45 minutes reaction time at 60^{o}C temperature. The keratin extraction developed by the optimized thermo-chemical conditions is used to produce anti-aging cream by using ingredients, which include emulsifier, emollient, preservatives, and surfactant.

Fish Scale Made Biopolymer for Food Packaging Food Waste Reduction – An Overview

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Abstract

Food is wasted for plenty of reason due to the weather conditions starting from farms to handling, post harvesting almost 6 percent loss and 75 percent industrial waste comes under processing and production area. About 70 percent of fish and other seafoods have been processed before sale. Thus, producing a huge amount of solid waste deriving from activities such as beheading, de-shelling, degutting, removal of fin and scales, filleting, etc. It has been estimated that 20 percent of the fish industry by-products is used as low-value ingredients in animal feed, but the major part is landfilled or incinerated with consequent environmental, health, and economic damage. Fish waste is of growing interest as a new raw material for biopolymer production in different application fields, mainly in food packaging with significant economic and environmental advantages. Hence the present study addresses on the issues related to industry waste out of fishery and fish by-catch are the potential aspect for re-using these by-products in a circular economy approach. Moreover, all the biopolymer typologies derived from fish waste with potential applications in food packaging, such as muscle proteins, collagen, gelatin, and chitin/chitosan, have been described in detail for a wider understanding. It is important to note that the commercial exploitation of biodegradable

polymers derived from fish waste is still limited since the functional properties are lower than those of synthetic polymers. The main limitations of the present research are brittleness and low mechanical strength, high water solubility, and high-water vapour permeability. This paper suggests the requirement of research on fish waste for achieving similar properties to that of petroleum-based plastics. Furthermore, the studies on the feasibility at an industrial fish wastage can proceed as a packaging material for a healthy environment in comparison with other synthetic polymers.

A Study on Edge-Based Software Defined Network for Internet of Things (IoTs)

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Abstract

The header compression methods enable the system to support low transmission overhead, low bandwidth, and low power consumption using maximum fragmentation of 128-byte. The resource constrained nature of low powered devices gives rise to numerous challenges and issues for availability, reliability, adaptability, scalability, and security. The core network is a collection of OpenFlow switches, which are connected to Edge Controller and Global Controllers respectively. It serves as a backhaul network for the proposed architecture. The 6LE-SDNP protocol is designed to bridge the two technologies by inheriting both 6LoWPAN and SDN characteristics. The Edge Controller is a lightweight SDN controller that can locally manage its network domain. On the other hand, Global Controller operates when the Edge Controller fails to provide a specific function to network entities such as routing the external network domain. The present study intends to understand the Edge-Based software defined network using Edge Controller and Global Controller communication devices for communication for Internet of Things (IoTs) to performing a specific task.

A Study on Household Solid Waste Generation and Disposal Pattern in Imphal City, Manipur, India

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Abstract

The environmental issues related to improper solid waste management, which has been increasingly accepted as a global challenge. The current study attempts to study the existing municipal waste management practices at household level in Imphal city. In furtherance, investigations were conducted in two localities, namely Yaiskul and Keishamthong Kabui Khul, in the heart of city. Moreover, there has been a considerable variation in the household waste generation rates in the study area influenced by family size, domestic activity and economic levels respectively. The household waste generation varies from 0.025 kg to 7.5 kg day^{-1} (Yaiskul) and 0.025 kg to 6.0 kg day^{-1} (Keishamthong). It is to be noted that around 36.9 percent and 40 percent of the surveyed households in the aforesaid two respective localities the waste generation rates are from 1.6 to 3.0 kg day^{-1}. The calculated per solid capita domestic waste generation in the two sites was about 0.30 kg^{-1} day^{-1} and 0.31 kg^{-1} day^{-1}, respectively. Also, the percentage of the biodegradable fraction was higher compared to the non-biodegradable fraction. The plastic waste accounted for the largest part of the non-biodegradable waste. Furthermore, the per capita waste generation rate was highest in the houses belonging to the middle-income group. It has been concluded from the results that waste management situation in the study areas is not satisfactory. This is attributed mainly due to a lack of infrastructure, insufficient financial resources, technological expertise, etc. The research study intends to recommend an integrated approach to address the current challenges faced by Imphal Municipal Corporation to increase the overall eco-efficiency of waste management system in the city.

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Secure Multi-Party Computation Based Privacy Preserving Distributed Data Mining – An Overview

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Abstract

Data mining is one of the most important tools of data analytics. However, there arises the question of preserving privacy while performing efficient data mining. The reason being most data are inherently distributed. This in turn adds an additional constraint to the preservation of privacy. The present study looks at the scenario where multiple parties wish to perform joint data mining over a distributed system, and at the same time wish to maintain individual privacy. The approach should be such that at the end of computation the parties should have only their own inputs and the results and nothing else. This should hold true even if some of the participants maliciously collaborate among themselves to obtain more information. Also, the present research provides an overview of Secure Multi-Party Computation (SMC) and recommends it as a solution to distributed data mining process.

Recent Trends in Automated Detecting Plant Diseases using Image Processing Techniques – An Overview

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Abstract

In our country, agriculture is the main occupation of the people, wherein plant diseases are a major problem today. The reason being they affect the quality and agricultural production. Most plant-borne diseases are caused by viruses and fungi. In many areas, it is impossible to detect infections at an early stage manually. The subsequent care for plant conditions has been a very difficult task to perform. Hence, to overcome this problem, the implementation of image processing techniques is used to identify the disease in early stage. The phases in image processing-based plant diseases detection system are image acquisition, image preprocessing, image segmentation, feature extraction and classification of disease using machine learning technique. A rapid and accurate detection of the plant disease is provided to farmer through an automated disease detection system. Also, to enable faster crop diagnosis, plant leaf disease detection systems must be automated. The various image processing and machine learning methods for identifying plant leaf diseases are described in the present study. This method reduces the destruction of plants and make the crop production high. The study recommends automated plant disease detection system as a solution to solve the farmer problems by identifying the plant diseases at an early stage. Many techniques are used to identify the diseases in plants, whereas this study provides the overview of available methods for plant disease detection using image processing and machine learning.

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Precision Agriculture in the Modern World – An Overview

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Abstract

Precision farming focuses on the special requirements of a single location of a field. In furtherance, to identify the portions and coordinate the required resources, information from aerial pictures, detectors, Global Positioning Systems (GPS), Geographic Information Systems (GIS), etc. has been reviewed. The new innovations have led to advancements in agricultural technology, wherein these innovations have improved administration, efficiency, and manufacturing. The study aims to provide an overview on precision agriculture in the modern world through using technology. It is to be note that by using the cutting-edge technologies like internet, fog/edge computing, cloud computing and storage, advanced ICT (Information and Communication Technology), automated machines, application of intelligent strategies to agricultural management and taking environmental factors into account, which is now referred to as 'brainy agriculture'. As a result, it emerged with a concept called 'smart farming'—which includes all the aspects of precision agriculture and enables management of production processes. The unmanned robotic and autonomous aircraft are now in use through AI technology. The overview of the present study suggests that these machines, which are created with agriculture in mind can be employed to perform tasks like weeding, fertilizer application, fruit collection, etc. Also, when outfitted with hyperspectral cameras, they can also measure the growth and nutrient levels of plants.

IoT in Big Data Applications based on Smart Environments – An Overview

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Abstract

Internet of Things (IoTs) plays a crucial role in today's scenario across the global economy in terms of its applications in big data analytics. The world is moving on a fast pace, wherein technology-driven economy accounts for holistic development of any country. Keeping this in view, the present study discusses on related applications based on IoTs in big data for resilient environments. The present study aims to highlight the main application domains, recent technologies, data architectures, and persistent problems in these areas. To the best of our knowledge, this is the first systematic review of this kind. It also reviews research studies from 2017 to 2021 that have been published on peer-reviewed sites and uses a four-step selection method that involves identification, screening, qualifying, and inclusion according to those results. The convergence of big data and IoTs opens a wide range of possibilities for intelligent environment applications that monitor, secure, and improve natural resources. The smart metering, smart farming, smart agriculture, and smart catastrophe alerts are a few of the domains that have been explored in this conceptual research. The study suggests that integrated research needs to be commenced in the multidisciplinary research avenues in smart cities and its surroundings to summarize the most prominent big data and IoT methodologies for a better understanding of prospects.

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A Study on Air Quality Index Analysis and its Effects on Health

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Abstract

Deteriorating quality of air is one of the major concerns among the entire world and various studies have been conducted to improve it and finding relevant precautions. The present research study intends to analyze and make a machine learning model to predict the Air Quality Index (AQI) in different parts of India and to find its adverse effect on health. Moreover, this research will be using different Python libraries for different purposes. For instance, matplotlib for data visualization and sklearn for machine learning. The proposed model will be able to predict the AQI at different parts of India and it will be displayed on a website, which will be made using HTML, CSS, and JavaScript. The graphs and charts through which analysis has been carried out in this research and it will be accessible through the website.

A Study on E-Healthcare Information Systems Using Block Chain Technology

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Abstract

The e-healthcare systems has gained enormous momentum and plays an important role in the recent years. One of the most important issues in e-healthcare information systems is to optimize the medical data quality extracted from distributed and heterogeneous environments, which can extremely improve diagnostic and treatment decision making. The present study focuses on a multiagent web service framework based on service-oriented architecture for the optimization of medical data quality in the e-healthcare information system. Based on the design of the multiagent web service framework, an evolutionary algorithm (EA) for the dynamic optimization of the medical data quality has been proposed, which consists of two main components. The first component is EA, which will be used to dynamically optimize the composition of medical processes into optimal task sequence according to specific quality attributes. The other component is a multiagent framework, which has been proposed to discover, monitor, and report any inconstancy between the optimized task sequence and the actual medical records. Thus, to demonstrate the proposed framework the experimental results for a breast cancer case study is provided. Furthermore, to show the unique performance of our algorithm, a comparison with other works in the literature review has been presented and discussed accordingly.

Crop Yield Recommendation and Prediction Mechanism using Intelligent Machine Learning Algorithms

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Abstract

Agriculture is the backbone of India, wherein every human is dependent on its produce for survival and growth. The appropriate steps towards agriculture field improves the socio-economic growth of every country. The technology innovations in agriculture accounts for such growth and green revolution, wherein it always benefits the society at large. This present study proposes the techniques for enhanced ‘crop yield recommendation’ and ‘prediction mechanisms’ using ‘Intelligent Machine Learning Algorithms’. The selected algorithms are applied to predict crop yield such as Support Vector Machine (SVM), Artificial Neural Network (ANN), Random Forest (RF), Multivariate Linear Regression (MLR), and K-Nearest Neighbour (KNN), which are used and shown expected results. It is to be noted that among the various algorithm techniques, Random Forest (RF) showed the best results with 95 percent accuracy. Also, it suggests the best time to use the fertilizers to boost up the yield and find out the disease in crops.

Making Business Easy by using Inventory Management Strategies

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Abstract

The Inventory Management System (IMS) is incredibly a vital aspect in terms of commercial, wholesale, custom, and other distinct businesses that hold inventory. Moreover, it is a combination of hardware and software technology that monitors and maintains the company's inventory. Previously, conventional systems tracked the inventory process in warehouses using modest spreadsheets, but at present recording in a simple spreadsheet gets complicated particularly in case of huge firms. In furtherance, a maximum of inventory management has been carried out through integrated systems that serve as a part of ERP software. In the upswing, good inventory management enables businesses to supervise their inventory across numerous warehouses in several areas. This research study confides the basics of inventory management and describes the fundamental characteristics and methods pertaining to the management of inventory in an explication. Furthermore, it discusses the inclusion of privileges and shortcomings of methodology used in IMS applications that needs to be adopted and illustrated for better prospects.

Traffic Simulation for Emergency Health Care Vehicles using Machine Learning and Computer Vision for Indian Roads

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Abstract

India at present faces a major problem in routing the shortest and fastest hassle-free road to the hospital. The conditions of roads in India in many places are not conducive enough for smooth and shortest travel for health care patients. There are no separate lanes on roads meant for only ambulance/emergency vehicles. The most widely used Google maps are used extensively for finding a shortest route from the source to the destination. However, no effort is initiated for clearing the roadways. This research paper aims at building a simulation model for emergency health care vehicles using sensors for communication and using the network analysis to connect all the nearest nodal points. Also, to inform the traffic assistants on shortest route to clear the signal for the emergency care vehicles using machine learning algorithm for training the system to deliver shortest route and nearest hospital services and computer vision for assessing the traffic. The various techniques, which are already available uses the Dijkstra algorithm in majority to find the shortest route. The present study has attempted to build a simulation model using an optimized algorithm for the complex traffic environment.

A Study on Solar Based Electric Vehicle Charging Station

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Abstract

People are worried about more straight and faster commuting methods in our country rather than saving the earth from the ill effects caused by pollution. The primary reason why people do not prefer electric vehicles is because of the unavailability of charging stations. The reason being, charging stations unlike petrol bunks are not available everywhere. Also, there always exists a fear as to what might happen if the vehicle runs out of battery. This study mainly deals with a simple solution to make charging stations more accessible. The solution involves using public electricity and solar panels for the easy and hassle-free charging of Electric Vehicles. Moreover, here charging of vehicle is done by using Bluetooth based wireless Technology. The study suggests that users can easily identify and charge their vehicles when the battery is low.

An Adaptive Non-Convex Hybrid TV Regularizer-Based Block Matching 3-Dimensional Approach

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Abstract

The reconstruction of an image without loss of information is the main challenge faced by researchers. A well-planned noise cancellation scheme for infected medical images is needed for medical diagnosing systems. This study proposes a novel non-convex Hybrid TV Regularizer based Block Matching three-dimensional approach. The performance of this approach is evaluated by considering gray scale MR images. This system verifies the reliability by estimating affect of Gaussian noise. Also, performance analysis of this approach is carried out by considering various statistical parameters like Peak Signal – to – Noise Ratio, Root Mean Square Error, Bhattacharya Coefficient, Edge Preservation Index, and Contrast - to - Noise Ratio.

A Novel Arduino Smart Power Theft Detection System

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Abstract

The electrical energy plays an important role in our day-to-day life, and it is the backbone for the industries. Today, all over the world the major problem is power theft, which is illegal and must be prohibited. Moreover, an electric power system can never be 100 percent secure from theft. The objective of this study is to design an Arduino based adaptive system that will try to minimize the illegal use of electricity and reduce the chances of theft. This adaptive approach includes electronic tamper detection, and by using GSM etc. Also, this power theft system alerts the user by providing a message through a GSM module.

Automated Analysis of Blood Cells using Microscopic Images

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Abstract

Blood is considered as a connective tissue of all the parts in our body. Hence, any disease that hits the body could be first affected by blood. The present paper focuses on detecting the disease using microscopic image. In this context, enhancement and segmentation of the image plays an important role for detecting a particular disease. The present study proposes a hybrid approach to enhance the microscopic image with the help of adaptive contrast min-max approach and hybrid cluster-based segmentation approach to improve the detection performance with regard to image processing. The performance and accuracy of this approach have been evaluated with the help of statistical parameters and techniques.

A Study on Smart Trolley for Automatic Billing System

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Abstract

Today, people's interest towards shopping malls are widely increasing and has become a routine process. The reason being people get all their daily necessities from shopping malls. It is to be noted that due to this there is an emerging demand day-by-day for easy and quick payment of bills in shopping malls. This in turn saves the peoples' time in ques especially in big malls. Moreover, to avoid the no assistance in shopping, each product in shopping mall is provided by RFID tag. In furtherance, to identify its type, each shopping cart is implemented with a product identification device (PID) that contains a microcontroller, an LCD, RFID reader and a Zigbee transmitter. Also, in the present research study AT89S52 microcontroller is attached to an RFID reader and barcode reader. In furtherance, as the user puts the items in the trolley the reader on the trolley reads the tag and sends a signal to the controller. The bill amount is received by the Zigbee receiver and sent to PC to display in the hyper terminal.

A Study on IoT Based Metal Detector using Robotic Vehicle

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Abstract

The applications using Internet of Things (IoTs) plays a vital role in all aspects to facilitate human needs at large. The IoT based metal detection has been considered as one of the major innovations with regard to industrial and security domains respectively. In furtherance, the robotic vehicle is devised for surveillance and safety requirements, wherein the vehicle is fitted with a metal detection system that senses metals and then alarms the user about it through a buzzing sound. The present study proposes a metal detection robotic vehicle, which is based on IoT and operated using wireless control. A real-life robotic vehicle is used to detect land mines or other metal-based objects on its path. The system works in conjunction with a NodeMCU to achieve this operation. Furthermore, when the robot is moving on the surface the system produces beep sound whenever a metal is detected. Simultaneously, the things around the robot will be transmitted to remote end, wherein the user can monitor the video on PC/Mobile. This novel approach is much useful for metal detection and surveillance applications.

Impact of Chronic Treatment of Holy Basil Leaf Extract in LPS-induced Sickness Behaviour in SD Female Rats

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Abstract

The activation of immune system in response to infection or bacterial endotoxin lipopolysaccharide (LPS) produces profound neurophysiological, neuroendocrine and behavioral changes. The effect of chronic treatment of ethanol extract of *Ocimum sanctum* Linn. leaf (EEOS, tulasi, Holy basil, Family: Labiataea) against LPS (1 mg/kg, i.p.) has induced endotoxic changes, resembling a depressive like 'sickness behavior' *viz.*, changes in body weight, food & water consumption, and spontaneous locomotor & exploratory activity. The changes in body temperature, food and water consumption, body weight and general behavior, has been measured for 3 weeks. The impact of LPS on spontaneous locomotor, exploratory and self-care activities are assessed using actimeter and open-field test respectively. The study demonstrated that pretreatment with ethanol extract of *Ocimum sanctum* Linn (EEOS) (50, 100 and 200 mg/kg; p.o.) and indomethacin (10 mg/kg; i.p.) for 3, weeks, prior to LPS insult, prevented 'sickness behavior'. In conclusion, LPS-induced sickness like behavioral symptoms in rats could be attributed to several pathophysiological conditions producing a constellation of hemodynamic, hematological, metabolic, and neuroendocrine changes, called 'sickness behavior' in humans or laboratory animals. Also, LPS is a key molecule in the pathogenesis of gram-negative endotoxemia, sepsis and septic shock. The attenuation of sickness behavior by the herb *Ocimum sanctum* could be attributed to its antioxidant potential, exerted by phenolic compounds present in EEOS. Furthermore, the suppression sickness behavior by EEOS could possibly be implicated in the presence of bioactive flavonoids and terpenes.

Improvement of Transient Stability in Hybrid Micro-Grid System

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Abstract

A major concern in the proper performance of micro-grid is frequency stability. The widespread usage of renewable energy in μG would cause the frequency uncertainty. Hence, to improve a microgrid (μG) system's dynamic performance of frequency deviation, load frequency control (LFC) is taken into consideration. The framework of μG includes both renewable and non-renewable sources of energy and storage technology. The conventional controllers failed to perform in wider range of its operation under various conflicts. Thus, for the considered μG system, a fractional order proportional integral derivative (FOPID) controller is designed to improve frequency stability using a particle swarm optimization (PSO). The FOPID controller increases the system's ability to be more flexible in terms of time and frequency responses, enabling more reliable operation. In addition, the control effort also reduced, and it provides robust control performance. The effectiveness of LFC for μG is established using MATLAB/Simulink under various cases such as increase or decrease in load demand, system uncertainty, abrupt change in load demand and renewable power variation. The obtained plots through simulation are validated in Hardware in loop (HIL) digital simulation using Real Time Simulator and it is evidenced for the competence of the proposed controller. The suggested controller provides better performance with reduced settling time and overshoot compared to other controllers discussed in literature. Moreover, the real-time digital technique enables researchers to test various scenarios in near-real conditions without taking risk, prior to field deployment. Also, with the development of intelligence techniques, the current μG is renewed into a self sustainable one with increased resilience. Furthermore, the application of μG gives local users more control and aid in achieving energy freedom.

Overcoming the Challenges Using Practical Implementation of Sustainable Microgrid – A Conceptual Review

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Abstract

The microgrid (MG) plays a crucial role in the context of power efficiency. Keeping this in view, the study intends to focus on the literature review of implementation challenges and overcome techniques of Microgrid (MG). The primary challenge of MG will be how to maintain the balance between the generation of electricity through Renewables and loads in Islanding as well as Grid connected Mode. Also, the secondary challenges are stability, reliability, and Protection of MG due to reverse power flows of distributed generation (DG) units and severe frequency fluctuation during Islanding operation. The synchronization issues to change from Island to Grid Connected mode and vice-versa. In furtherance, to overcome the primary challenge, load prediction will be carried by using deep belief neural network and long short-term memory (LSTM) techniques based on the prediction, generating units will operate on the future. Moreover, secondary challenges will overcome by using V-f control, P-Q control, and droop control. The synchronization is termed as the power converters communicate with the main grid at the point of common coupling (PCC). Thus, to limit the intolerable outcomes and diminish the voltage interruptions, integration should be effectively designed with appropriate phase locked loop (PLL) to produce current signal with high standard. The most usefully preferred method is synchronous rotating frame PLL (SRF-PLL). This conceptual study suggests the techniques and methods to overcome the challenges to implement the sustainable microgrid for future world.

Analytical Method Development with Validation of Bulk Drug - Dutasteride Employing Relative Impurity Profile

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Abstract

Dutasteride is used in the treatment of benign prostatic hyperplasia. Moreover, like finasteride, it reduces serum prostate-specific antigen levels by approximately 50 percent at 6 months and total prostate volume by 25 percent in two years. The present study aims to develop the impurity profiling of dutasteride. Keeping this in view, a new simple, accurate, precise method has been developed by RP-HPLC (reverse phase high performance liquid chromatography) for determination of Purity and Assay in bulk and pharmaceutical formulation (oral dosage formulation). Furthermore, a method is developed for dutasteride oral dosage form by using RP-HPLC and validated accordingly. The chromatogram has been running through SB C18 (250×4.6mm i.d. 5µm) mobile phase containing 30 percent of 0.02M phosphate buffer and 70 percent of acetonitrile in the ratio of 30:70 v/v with a flow rate of 1.2ml/min and optimized wavelength at 225nm.The method is validated according to ICH guidelines. In furtherance, the results of assay for impurity in bulk drug are in allowable limit as per ICH. In conclusion, the results of the study showed the development of analytical method and validation of dutasteride bulk drug employing relative impurity profile.

Stability Indicating Analytical Method of Favipiravir API- Identification and Characterization of its Degradant by Forced Degradation Studies using LC-MS

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Abstract

Favipiravir is an antiviral used to manage influenza and has the potential to target other viral infections. Favipiravir is a modified pyrazine analog that was initially approved for therapeutic use in resistant cases of influenza. Moreover, it has been investigated for the treatment of life-threatening pathogens such as Ebola virus, Lassa virus, and now Covid-19 too. The present study aims to isolate and quantify the impurities and degradation products of Favipiravir, which have been formed after subjecting the drug to various stress conditions as per ICH. The objective is to develop and optimize hyphenated chromatographic condition for Favipiravir estimation from forced degradation studies to isolate and elucidate the structure of the degradants. A simple and robust method has been developed for the estimation of favipiravir and its degradants where the separation is carried out using mobile phase consisting of 10 mM Ammonium formate buffer and Acetonitrile in the ratio of 50:50 using stationary phase C_{18} Column with flow rate 1.0 ml/min and detection at 323 nm. The linearity of Favipiravir has been in concentration range 1 to 50 µg/ml. The drug is subjected to ICH prescribed Hydrolytic,

Oxidative, Photolytic and Thermal stress conditions respectively. This method is validated according to ICH guidelines, wherein the drug Favipiravir showed more degradation in alkaline media. The results are found within the limits as per ICH. In conclusion, the results showed the development of validated LC-MS method for identification and characterization of degradants by forced degradation studies in Favipiravir API.

Evaluation of Wound Curative Action of *Cucumis sativus* Linn. Herbal Plant

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Abstract

The wound healing is one of the vibrant aspects in the pharmaceutical arena, wherein the application is more so in animal categories. The present study has been designed to analyze the wound healing activity using ethanol extract of *Cucumis sativus* Linn (EECS) leaves by excision wound model. In furtherance, the animals (rats) are divided into 4 groups, wherein in each group has been anaesthetized by open mask method with anesthetic ether. The depilation of the rats has been carried out on the dorsal side. The excision wound is inflicted by cutting away a 100 mm^2 full thickness of skin from a predetermined shaved area. Moreover, the excision wound has been left undressed. The topical application of the drugs to the divided group's viz., SOB and Reference Standard (Povidone Iodine ointment) have been carried out until the wound heals completely. Also, the wound contraction is constantly monitored. The results revealed that in case of an excision wound, EECS showed faster healing compared with control group. Furthermore, excision biopsy of skin wound at day 16 showed healed skin structures with normal epithelization, restoration of adnexa and fibrosis within the dermis in EECS and Reference Standard treated groups. Also, the researchers have observed that topical application of EECS has a positive influence on wound contraction phase of wound healing and been beneficial in wound healing.

Impact Assessment of Urban Growth on Land Surface Temperature of Chennai Metropolitan Area, Tamil Nadu, India

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Abstract

The urbanization is the consequence of anthropogenic activities, wherein it reduces the vegetated and green spaces thereby increases the impervious surfaces cities. This in turn increases the surface temperature of cities when compared to rural regions resulting in the formation of urban heat island. Especially, in the cities of developing countries like India, it is very crucial to obtain timely and accurate information on the urban trend and its development due to the higher increasing rate of population growth and increasing economic development to mitigate the adverse consequences of urbanization. The current study analyses the urban development of Chennai Metropolitan Area (CMA), Tamil Nadu, India, using Landsat 7 dataset acquired in between 2012 and 2022. Furthermore, the influence of urban growth on the land surface temperature (LST) and land cover variability (LCV) indices including NDVI (Normalized Difference Vegetation Index), NDBI (Normalized Difference Built-Up Index), and NDWI (Normalized Difference Water Index) is identified during the study periods. The results revealed that built-up area has been increased between 2012 and 2020 in the study region. Moreover, the Shannon's entropy-based analysis suggests that urban development in the region is heterogeneous or dispersive in nature. In furtherance, the regression analysis highlights a strong positive contribution between LST and NDBI and a negative contribution has been found between LST and NDVI and LST and NDWI. In conclusion, the results of the study could be useful to design a sustainable urban socio-economic and environmental planning policies in the study region.

A Study on Optimization Control of Frequency Deviation using PSO Technique of Two Interconnected Power Systems

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Abstract

The optimization control with regard to frequency deviation plays a significant role in the field of power systems. There are many techniques adopted to perform the optimization. However, Particle Swarm Optimization (PSO) gains importance. The present study focuses on Load Frequency Control (LFC) problem, which has been solved using PSO. The two interconnected power system is built with PID, wherein the performance of a dynamic model is possible through controller design. The dynamic model is constructed by MATLAB / Simulink to carry out the performance and verify the load frequency dynamic responses. Moreover, as the load demand changes, the turbine speed also changes with deviation in frequency. The PID controllers are used to control the frequency deviations. The optimization of controlling frequency deviation to precise value is a big challenge through the PID controller. This is solved efficiently by using PSO in LFC of Interconnected Power Systems. The analysis helps to improve the stability and reduces the complexity of system.

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Influence of Technological Factors on Individual Online User Behaviour of Social Media Consumers

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Abstract

Social media platform has turned the world in terms of a way the people communicate and have made our interactions very transparent. It is bringing with it a never known before opinion of the public on all activities surrounding the businesses, products, marketing, and services to the forefront. The internet user base is increasing in a fast trend and making social technologies accessible to a vast majority of people across the globe. This draws attention for a holistic understanding on whether adoption of internet technology has resulted in gainful and meaningful communications among consumers of products and brands alike over the years. The theoretical models like Technology Acceptance Models (TAM) and Theory of Planned Behavior (TPB) have contributed tools and techniques towards understanding this online user behavior of technology under various context. The present study intends to analyze the impact of technology factors on users' opinion giving, opinion seeking and opinion passing behaviours respectively. The results highlighted that socio-technology platforms have to pay attention to the interface between human and machine for more meaningful and gainful interactions.

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Leadership of Covid-19 in the Transaction of Vegetables at Kathmandu Valley in Nepal

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Abstract

The Covid-19 has affected the global community to a large extent and more precisely the consumable sector. The primary goal of this study is to determine how the Covid 19 pandemic has affected the sales and consumption of vegetables in the Kalimati Fruits and Vegetable Market in Kathmandu, Nepal. Also, it intends to determine how many kinds of green vegetables are supplied to residents of the Kathmandu Valley and what substitutions they have made in their kitchens to make up for the shortage. The study included 102 gate visitors to central fruit and vegetable market as respondents for data collection. The analysis revealed that during the hours of vegetable pick-up, only 20-40% of the whole regular supply is available, and vegetable prices have increased by 11-66%. Most of the locals replaced the green vegetables in their houses with locally preserved veggies instead of pulses, grains, dals, paneer, and dry beans. Moreover, majority of the respondents recommended preserving eatable veggies during bumper crop times for replenishment at times of crisis like Corona and even during periods of natural scarcity. The present study emphasizes on providing a learning towards sustaining in a crisis situation.

A Study on Consumers' Buying Behaviour towards Electric Vehicles (EVs) in Chennai City

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Abstract

The pollution caused by carbon emission created numerous health problems to the people in India due to its population density and it also accounts for depleting the health of mother nature. Hence, the people and government have collectively decided to look for alternative methods of commutation from fossil fuel vehicles, wherein Electric Vehicles (EVs) have come into existence. It has drawn enormous attention in the recent years. Hence, the present study focuses in understanding the transformation in the mindset of consumers' post purchase buying behaviour towards Electric Vehicle (EV). The study also explains the various factors and advantages of using electric vehicles. The study is restricted to Chennai city and it is based on both primary and secondary data sources from government departments, electric vehicle manufacturing companies and other reliable sources. The researchers have suggested the utilization of electric vehicles with regard to pollution control and peoples' health prospects.

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Job Security and Workplace Happiness among Indian IT Employees – An Empirical Demographic Analysis

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Abstract

Organizations are investing increasing amounts of money and resources in improving happiness at work. The importance of workplace happiness is recognised in all the sectors in a slow pace. Moreover, the achievement beyond job satisfaction is slowly realised by all the sectors. IT sector always thrives to attain next level of achievement, wherein it is open to accept challenges, by finding new ways to attain anything beyond. The IT job is a highly demanding in the job market, but it is highly volatile in nature. Hence, the high employee turnover and layoff are frequently heard in this industry. The primary aspect that gets affected any internal and external factor for undergoing a change is due to job security. Thus, job security being an individual factor gets influenced with psychological changes and physiological changes. Also, it effects workplace happiness of employees within an organisation. The internal organisational factors directly affect the job security. Keeping this in view, the present study aims at identifying the influence of demographic factors on job security and impact of job security on workplace happiness. The study comprised of 153 employees at all levels within the IT sector. The study adopted convenient sampling method to collect data, wherein the survey has been conducted through a self-devised questionnaire based on a five-point Likert Scale, delineating the research purpose and assurance of confidentiality The demographic factors like gender, age, experience, and qualifications at different levels are included. Also, to measure the workplace happiness, organisational factors like learning opportunities, leadership, and performance are considered. Furthermore, two-way ANOVA is used to understand the variance of each independent factor. Also, multiple regression analysis is used to measure the impact of job security on workplace happiness using SPSS.

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A Conceptual Review on Enhancing Social Sustainability by Improving Ergonomics in Manufacturing MSMEs

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Abstract

The economic, cultural, and ecologic dimensions of organizational sustainability have all been the subject of extensive research, which provides ample justification for a well-rounded approach to achieving it. This study provides concrete examples of how ergonomics-based methods and tools contribute to the ongoing improvement of social sustainability in organizations. Also, it prioritizes the social dimension because it is widely acknowledged as the most underdeveloped and understudied. The 17-underpinning metrics of the workroom sustainability framework posited in prior research provides the relationship amid social sustainability at the place of work and the biotechnology concept. The present research is conducted in a tool manufacturing company using the Regulating Energy and Building Activity (REBA), which is one of the flexible risk assessment methods to see the results, which could be factored into the overall size or value of sustainability outline indicators. The study has found that straight application through REBA outcomes is impossible, and yet it is known that the request of proposals in reaction to recognized risk stages impacts up to at least four of the total five factors that make up the strategy of sustainability. Hence, REBA is not an appropriate method for resolving ecological issues. In order to encourage social sustainability at the workplace, the authors of this study advocate for the implementation of ergonomic strategies and equipment. Often, one must choose between the traditional manual method and cutting-edge AI method. The extent of sustainability achieved depends on not only the approach taken but also the technique(s) employed. The study conceptually emphasized on some key takeaways through literature thereby using ergonomics in education to promote social sustainability as a means of knowledge exploitation.

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Volatility Analysis for Customized Portfolio with ARCH Family Models: A Comparative Analysis with reference to Indian Stock Market

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Abstract

With the current financial situation, the most concerning issue is level-headed venture. There are many instruments with which venture should be possible and it's turning into a ruling business. Aside from judicious financial backers, there are financial backers who will put resources into stocks, bonds, mutual reserves, taste for a decent return. However, they know nothing about risk related with such sort of ventures. This study is for financial backers separated from regardless of whether their objective will assist them with putting resources into specific portfolio considering Indian Stock Market with least gamble. There are certain standards, which will be dealt with concerning stocks from NSE and BSE. The stocks will be looked over Bank, IT, Pharmaceuticals, and Finance. The entire study is based on secondary sources of information from NSE, BSE, and Yahoo Finance. The seven modified portfolios will be shaped with a couple of stocks from every area with irregular and judicious blend. The measure for picking stocks will be based on 52-Week High, New High, Volume Exchanging, and Change Mid Cap to Enormous Cap. Additionally, the factors influencing the stock cost will be broken down. Moreover, out of seven portfolios, three portfolios will be picked which will give a great return with least gamble. Also, the ARCH family models will be used to choose the best portfolios. This study will help the financial backers and new in Indian securities exchange to grasp the market prior to effective money management arbitrarily or in view of information, sensationalist reporting, and falsehood.

Rethink, Reinvent and Reframing of Roles & Responsibilities of Anganwadi Teachers / Workers in Rajasthan – A Conceptual View on National Education Policy 2020

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Abstract

The Anganwadi was launched by the Government of India in 1975, as part of the Integrated Child Development Services program to combat hunger and malnutrition in children. Anganwadis are at the center of the ICDS. The early childhood care and education (ECCE) is more than preparation for primary school. It aims at the holistic development of a child's social, emotional, cognitive, and physical needs to build a solid and broad foundation for lifelong learning and well-being. The study intends to understand the present opportunity and urgent need of NEP 2020 in Anganwadi teachers/workers with regard to regulatory framework and implementation process, highlight the difference aspects and approaches, roles and responsibilities, identify opportunities, new dimensions, exchange knowledge, ideas, latest trends, developments, and contemporary challenges. Also, it attempts to highlight the opportunities and policy framework, implementation, detailed plans, and the study of National Education Policy 2020 in Anganwadi teachers/workers. Moreover, it aims to provide a platform for researchers, and practitioners, academicians to share their views and highlight and discuss the latest developments of the National Education Policy 2020: Rethink, Reinvent, and Reframe role and responsibility Anganwadi Teachers/workers in Rajasthan. This paper will improve the research and theory building in every area by facilitating the exchange of knowledge, ideas, latest trends, developments, and contemporary challenges.

Impact of Covid-19 on Hotel industry in Mangalore City – Post Covid Analysis

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Abstract

The proliferation of Covid-19 has caused a widespread issue in various spheres of society, particularly in the travel and hospitality sector. The year 2020 has been a worrying year for almost all nations because of the outbreak of the Coronavirus started in Wuhan City, China, which is also known as Covid-19. The outbreak is a worry for the entire world since it has an impact on so many areas, including tourism and hospitality. The hotel industry has encountered many difficulties, mostly because of altered client preferences and the requirement to fine-tune business models. The purpose of this study is to ascertain the effects of Covid-19 epidemic on the hotel sector in Mangalore city and analysing the attempts to overcome it is the goal. Moreover, the hoteliers who run multiple branches in Mangalore city were interviewed for the data. A total of 40 hotels has been considered for the primary data collection through interview and questionnaire methods respectively. Also, thematic analysis has been used to examine the data. The findings indicated that there have been little preparation for dealing with such a pandemic. Also, to deal with the effects of Covid-19, hotels have concentrated on increasing transparency with the workforce, giving enough information, and decentralising power to departmental levels. This study has focused on the managerial responses of hotel sector during the Covid-19 pandemic crisis as well as potential strategic directions that hotels may take in the future.

Strategy of Content Marketing under the Global Market Conditions and its Impact – An Empirical Study

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Abstract

With the growth of the internet and technology over the past few years, content marketing has become an increasingly popular marketing strategy. A new method of marketing emerged that uses information to assist, amuse, and educate internet users when the outmoded marketing forms on the internet grew ugly and confused. A thoughtful content strategy is the foundation of effective content marketing. In furtherance, choosing the appropriate content types is a crucial component of the plan. The research studies across the world have shown that a global content marketing strategy is currently thought to be a wise and practical decision. The real process of developing a content marketing strategy is time-consuming and difficult, wherein it calls for knowledge and experience. The incorporating content marketing into the broader marketing plan also requires adaptation to internal market developments. Moreover, the marketing industry is a dynamic and ever evolving environment that never becomes stale. The present research aims to analyse whether content marketing affects consumers' interests through comparative analysis. The present study intends to assess the significance of global marketing strategy for customer communication based on the analysis of difficulties. Also, the results highlight the best practises, and suggestions for developing a global marketing plan. This paper also provides a thorough discussion about the utilization of global content marketing strategy towards shape customers' interests with regard to market understanding and communication respectively.

A Study on Research and Technological Innovation in the Insurance Industry after Pandemic

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Abstract

Every individual is exposed to innumerable risk connected with his or her life and business. Also, every individual is very much interested in escaping from such risks and searches for protection. This led to the development of insurance business, which is a means to avoid the consequences of risk. The Covid-19 has been a significant impact on individuals, societies, business, and the wider economy across the world. The insurance industry has not been escaped its impacts and actions being taken across the industry globally in response to the Covid-19 pandemic. The present study focuses on various technological innovations, which has been upgraded after the pandemic. Insurance Regulatory and Development Authority (IRDA) of India always gives clear instructions and provide proper regulation to insurance business market. As per IRDA's annual report, insurance penetration in India increased from 3.67 percent in 2019-2020 to 4.20 percent in 2020-2021 recording an overall growth of 11.7 percent. The main objective of this paper is to understand the latest innovations in the insurance industry, which made it possible for insurers and provide them with the user driven and empathy rich experiences. The various technological innovations in insurance industry are artificial intelligence, internet of things, insurtech, social media data, virtual on boarding, tailor made insurance products, simpler and faster claim settlement and prevention of fraud and collusion. To conclude, the biggest contribution that technology-based innovations have made the world of insurance becoming comfortable and enabling large number of customers who are likely to get insured for the right reasons.

Impact of Total Quality Management Practices on Consumer Behaviour and Organizational Performance – An Empirical Analysis

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Abstract

The most popular management approach for improving the quality of goods and services is total quality management (TQM), which has been credited with helping organizations to increase their profit margins, market share, and cost savings. Moreover, the customers constantly care about getting value for their money. Hence, the management group must periodically prioritize the quality of their outputs and procedures. The present research envisages into how the comprehensive total quality management affects both organizational performance and customer purchase behaviour. The study comprised of 250 respondents who are consumers and staff members of Jammu and Kashmir Bank and adopted survey method and collected the primary data through a validated questionnaire. The statistical techniques like correlation, regression, factor analysis and other tests are performed to understand the significance, wherein the findings are interpreted and discussed accordingly. In furtherance, this research tries to ascertain how overall quality management affects customer purchasing behaviour and its impact on organizational success. The researcher suggests setting up of staff training and development programs towards building strong consumer relationships. Furthermore, all employees must participate in TQM practices since its affects every facet of business. Also, the findings provided the way for quality control procedures, which needs to be put in place.

An Empirical Study on Influence of EI on Remote Working and Employee Performance

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Abstract

The concept of emotional intelligence is of unparalleled interest in both popular literatures, with industry and academia respectively. Also, much work is being done to discover exactly what emotional intelligence encompasses and how it would be applied most effectively. The scenario of Covid-19 both pre and post has thrown up new challenges in employee engagement and technologies, which have evolved to cater to the situation in all organizations. The people around the globe have come across remote working atmosphere through online mode, wherein many workforces in human resources domains of organizations have realized that some jobs can be carried out without the physical presence by employees from any part of the globe or from their cosy homes. It is from these aforesaid developments the new challenges for human resources have evolved and technology has come to rescue across the entire globe. Moreover, online platforms like Zoom, Google Meets, MS-Teams, etc. have emerged. This in turn has made communication and work easier in remote working conditions. Furthermore, in doing so there are aspects like emotional intelligence becomes indispensable in lieu of employee's productivity, which is a measure of employee's performance and job effectiveness. Hence, there is a need to understand the role of emotional intelligence and its alignment to technology and employee productivity. The present study included 85 respondents from IT sectors in Bangalore through survey research method. The statistical analysis like correlation and regression are conducted, wherein the results are interpreted accordingly. Also, the present study is an attempt to understand the role of emotional intelligence, technology-innovation, and employee productivity in organizations for its overall growth and effectiveness. The researchers in this study have discussed about remote working, role of technology, and vital role played by emotional intelligence in helping employees to achieve their organizational goals with improved job performance.

A Study on Market Overview of Battery Vehicles

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Abstract

The battery vehicles are becoming popular in the recent years. It is also the alternative for automotives running conventional energy resources. The major components in battery technology, charger design, motor, steering, and braking are examined. In the past observations, the application of internal combustion engine is dominant. Moreover, the recent studies reported that a transition stage is occurring towards the purchase of battery vehicles. Furthermore, in battery vehicle no internal combustion engine is used, wherein all the power is based on battery power as the energy source. The need for conversion to battery vehicles is needed to minimize environmental pollution. Nearly all the car manufacturers have at least one model in hybrid battery vehicle. The questions come to us: which vehicle will dominate the market, and which one is suitable for future? Recently, there has been massive research and development work reported in both academic and industry. Many countries have provided incentive to users through lower tax or tax exemption, free parking, and free charging facilities. Also, on the other hand, the battery vehicle is an alternative and it has been used extensive in the last few years. The present study provides an overview of the recent research in battery vehicle. The descriptive research methodology is to be applied ensuring the support of both primary as well as secondary method of data collection. The researcher describes the development and comparison of different part of components of a battery vehicle through statistical analysis. In furtherance, a major observation of the study is that the decrease in air pollution due to usage of battery vehicles. It also assesses the recent development of battery vehicle and suggests the future development.

An Empirical Study on Academia-Industry Integration to Enhance Employability of Graduates

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Abstract

The creation of synergy among university and industry is the need of time in the competitive era of globalization. In furtherance, the response to incessantly growing complexities of contemporary business environment have necessitated an integration between academia and industry, which have been operating in discrete domains since long. The intersecting needs and interdependent relationship among all the stakeholders are required to be identified to strengthen academia-industry partnership. This empirical research attempts to study the dimensions of academia-industry partnership with objectives of how business schools are working closely with industry and to identify the feasibility and viability, whereas industry's contribution to academia would be most effective. Moreover, the primary information on implemented modes of Academia-Industry integration has been collected from faculty and students of business schools from Ahmedabad and Gandhinagar Districts of Gujarat. The results suggested that a synergistic relationship among B-schools and industry has to be carved for attainment of mutual benefits of all stake holders through enhancing employability of the graduates.

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A Study on Buyer Behaviour with reference to Online Shopping in Pandemic

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Abstract

Today, technology plays a vital role and there are so many changes, which have come into existence with its periodic updation over years. Moreover, all are living in a globalized world, wherein we can see so many tough competitions in various fields. Hence, to live a life in this modern world is subjected to adoption with the current technology. It is during the traditional period people are able to buy goods offline and we enjoyed doing shopping as that of spending time instead of sitting idle in our place. The advent of online shopping has come into existence long back. However, it has become indispensable amidst pandemic and post pandemic scenarios. The people have started doing online shopping by way of downloading various apps. Furthermore, the people working in various fields do not have time to spend on offline shopping due to nature of job and its associated time constraints. Thus, in spite of going out and spending their time they started using the new system of online shopping, wherein they can order food, clothing, home care services and any other type of accessories. Hence, people are getting adopted to the system of online shopping which saves time and energy as well as money, which has increased during Covid-19 pandemic lockdown and continuing to do so in post pandemic scenario as well. The present study focuses on the buyer behaviour with reference to online shopping. Also, it discusses about various types of online shopping and feedbacks from buyer.

Transition of Small and Medium Enterprises to Sustainable Enterprises: A Contemporary Approach

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Abstract

The manufacturing units are substituting their production system with modern technology as well as energy efficiency. This has a lot of impact on the production line since optimum technology leads to minimum waste of materials. Moreover, investment and simultaneous digital technologies makes them ESG compliant. The climate change has led the corporates invest in worthy environmental and green manufacturing practices by small and medium enterprises. The governments are framing new policies for sustainable policies for their companies to follow and help in combatting the climate change. The green manufacturing aims on reducing the waste in production, energy consumption, pollutant emissions and using more biodegradable materials. It also aims at recycling the old products to reduce the waste. Furthermore, in manufacturing units the sustainability-oriented practices in the use of material and reduction of wastage leads to sustainable growth and the resilient economies. Also, beyond production of green manufacturing targets the value chain to reduce energy consumption and using by-products to reduce waste management thereby protecting the resources of the earth. Despite the fact Small and Medium Enterprises (SMEs) lost the movement of sustainable practices for a period, but now joining the corporates due to some reasons. Now the question is how to get into the green manufacturing practices on par with other large-scale firms. The purpose of this study is to analyse the changing role of small and medium enterprises to a sustainable enterprise as per the global standards. The entire study is based on secondary data and conducts an exploratory study of various factors playing a role in sustainable enterprise. There are pressing concerns from the government and environmentalists to follow such guidelines. In the realm of sustainable development goals there is a need on the part of SMEs to change the roles to sustainable model to suit the needs of the economies.

A Study on Factors Influencing Customers' Perception Towards DTH at Chennai City

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Abstract

In today's technological world, entertainment plays an essential role to sustain human being in this world. The Indian entertainment industry encountered steady growth over the years. This new era in entertainment is modifying the working and viewing patterns of entertainment industry along with television sector. The evolutions in televisionzone are cable TV and Direct to Home (DTH). With the government making digitalization of television network mandatory. The reason being, DTH market is becoming one of therapid growing segments. Moreover, the technology used in DTH is originally referred to as Direct Broadcast Satellite (DBS) technology. The technology is advanced for competing with the localcable TV operators by providing higher quality satellite signals with additional numberof regional channels. In the buyer's market today, DTH service providers have to makelot of attempts to sell their product and set up their survival. This may be primarily due to the changes in perception of customers towards buying DTH. Hence, the study intends to understand the factors influencing customers' perception in using DTH. The study involves both primary and secondary data, wherein primary data has been collected through a structured questionnaire. The data are analyzed using statistical tools like T-test, Chi- square test, Friedman test, and Factor analysis. The paper mainly focuses on the factors influencing customer perception towards DTH services, awareness, and satisfaction level of DTH users and the problems faced by the customers in DTH services.

Understanding the Firm Transition across Size in India – An Overview

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Abstract

The micro enterprises represent more than 95 percent of all firms in India and even its share is even more than 99 percent firms in the unincorporated enterprises. The reason being distribution of firms is skewed towards smaller firms. Moreover, there is a paucity of research focusing on transition of firms across size in India. Keeping these in view, the present study aims to understand to how firms transit from smaller to larger size and larger to smaller size firms using Centre for Monitoring Indian Economy (CMIE) database of registered firms during 2006 to 2019. Both forward and backward transition among formal firms has been studied using old and new definitions of micro, small and medium enterprises (MSMEs). The findings show that there is a very low rate of transition from smaller to larger firms i.e., micro to small, small to medium, and medium to large firms. The average transition rate has been found higher as per old definition of MSMEs indicating investment as an important driver of dynamics of firms. Interestingly, transition among manufacturing sector firms is higher than the service sector firms. There is also negative transition from larger firms to smaller firms, which may moderate firm graduation across size. The factors affecting transition of firms include age, size, profit, assets, and ownership structure.

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Financial Inclusion Programme Available for Household Savings - An Overview

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Abstract

The Government of India and Reserve Bank of India (RBI) have been putting forth coordinated attempts to advance monetary consideration as one of the significant public goals of the country. Moreover, a portion of significant endeavors made over the most recent fifty years incorporate - nationalization of banks, developing of hearty branch organization of planned business banks, co-agents and territorial rustic banks, presentation of ordered need area loaning targets, lead bank plot, development of self-improvement gatherings, and allowing BCs/BFs to be delegated by banks to give entryway step conveyance of banking administrations, zero equilibrium, and so on. The crucial target of this multitude of drives is to arrive at the enormous segments of the up until recently monetarily barred Indian population. Hence, the Government of India have to promote households through different financial Inclusion programmes, that helps to promote our economic development.

Role of Incubation Center and Entrepreneurship Education in Developing Entrepreneurship Intention among Students – A Conceptual Review

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Abstract

The students at Higher Education Institutions (HEIs) can take entrepreneurship classes to improve their business skills. In furtherance, practitioners acknowledge that entrepreneurship education alone is insufficient to cultivate the entrepreneurial skill and capabilities of students, but they acknowledge that business incubators have their own distinct role to play in exposing and glinting the latent capacities of potential entrepreneurs. The present study has reviewed various studies formulated on entrepreneurship education and incubator center in motivating the entrepreneurship intention. This study adds to the body of knowledge by examining the role that entrepreneurship education and company incubation facilities have in promoting entrepreneurship. Furthermore, few studies have focused on the importance of business incubators for the growth of entrepreneurship, while majority of studies place an emphasis on entrepreneurship education. According to observations of this research study, the governments of developing nations should concentrate on incubation combined with education for university students because classroom instruction alone is insufficient to comprehend the entire entrepreneurial ecosystem.

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Brand Awareness of New Brands among Youths – A Conceptual Overview

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Abstract

The youth population is drastically increasing in developing countries like India with it - is the growing consciousness, awareness, and interest in fashion brands. The present study focuses on examining the factors and determinants that have a major influence on building brand awareness of new brands in fashion - amongst the youth in India. Moreover, to fulfill this objective primary research has been conducted on students in the age-group of 15-23 years to ascertain what factors contribute to them towards learning about a new brand. The survey examined the factors like, social media strategies of brands, brands exploiting new marketing and fashion trends, brand-cause affiliation, content type, brand engagement and peer recommendations influence on brand awareness respectively. The results showed that Indian youth is most responsive to brands that utilize video, graphic and influencer marketing. Furthermore, this group also values and shows great brand awareness towards brands that stand by a cause. Also, new brands that engage and interact with this type of audience are also appreciated. In addition to this, peer reviews are also important to this group and peer recommendations drive brand awareness and purchase motto. The results showed that Gen Z (Generation Z) mostly utilizes Instagram, and majority of brand awareness takes place on this platform as they are more receptive to ads on this platform too. Also, this generation utilizes the mobile devices for online shopping, wherein the browsing-signaling of the new brands must pay close attention to develop mobile friendly user interfaces. The survey also reflected a mindset shift that Gen Z in India is more open to modem western concepts like thrifting and gender fluid fashion. Although this mindset shift is a fairly new phenomenon and not present as strongly in all members of this group.

A Study on Students' Perception of Resumption of Offline Classes

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Abstract

The face-to-face learning is the traditional method through which most of the students around the globe acquire the basic knowledge from their childhood age. However, Covid-19 pandemic made an interruption in all the students' academic progress in terms of learning process. Keeping this in view, the present study focuses on students' perception after 100 percent resumption to offline classes. The sample included 274 final year undergraduate engineering students as respondents from EEE, MECH, CIVIL, ECE, CSE and IT departments through convenience sampling method. The final year students have been chosen due to they are more subjected to offline and online teaching-learning process. The study adopted descriptive research design to explain the results. A sample of 50 have been taken for pilot study to structure the questionnaire, wherein the Likert Scale has been administered. The findings revealed that students feel that only face-to-face learning can help in career development. Also, the study has found that students' positive perception on offline classes after resumption.

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Role of FinTech in Wealth Management Services: A Drive Towards Innovation

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Abstract

Fin Tech is a new tech that seeks to improve and automate the delivery and use of financial services. At its core, fintech is utilized to help companies, business owners and consumers better manage their financial operations, processes, and lives by utilizing specialized software and algorithms that are used on computers and, increasingly, smartphones. The word 'Fintech' is a combination of "financial technology". The financial inclusion refers to efforts to make financial products & services accessible and affordable to all individuals and businesses, regardless of their personal net worth or company size. The Fin Tech is also called as inclusive finance, wherein it changes the landscape of investment in wealth management. The advancements include the use of Big Data, Artificial Intelligence (AI) and Machine Learning (ML) to evaluate the investment opportunities, optimize portfolios, and mitigate risks. Keeping in view, the present study is conducted to understand the role of Fin Tech in wealth management services. The study adopted descriptive research method to explain the results. These developments are not only affecting quantitative asset managers but also fundamental asset managers who make use of these tools and technologies to engage in hybrid forms of investment decision making. In furtherance, financial inclusion strives to remove the barriers that exclude people from participating in the financial sector and using these services to improve their lives.

A Study on Students' Perceptions of the Entrepreneurial Spirit at a South African University

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Abstract

Entrepreneurship has been a topic of interest for the past four decades. Worldwide, the phenomenon has been acknowledged as a contributing factor of economic growth and development. Moreover, in South Africa it is considered as a solution to unemployment and poverty among the youth, specifically, wherein graduates cannot find employment. Therefore, the economists and educators believe that entrepreneurship is necessary to promote a robust entrepreneurial society through entrepreneurship. In addition to this, the development of entrepreneurial universities has blossomed in the recent years. In furtherance, the universities are playing a more active role in the country by equipping students with 21st century skills and fostering students with an entrepreneurial spirit. With this new role that universities are assuming it is necessary to determine students' perception on entrepreneurship education and the effectiveness of universities in promoting an entrepreneurial spirit, which can be a basis to evaluate the development of curriculums and programs. This research study aimed to determine the perception of South African students' perceptions towards entrepreneurial spirit created at their respective university. Hence, to understand the students' perception a self-administered questionnaire was used to collect the data from a convenience sample of 338 students. The descriptive research design approach has been adopted to explain the results. The collected data are analysed using reliability and validity analysis alongside a descriptive statistics analysis has been conducted. The results indicated that students believe that South African universities should motivate students to start businesses and to have an entrepreneurship department on campus. Also, it must formally educate the students on understanding the importance of entrepreneurship. However, they perceive that their university does not adequately highlight the entrepreneurship as a career option. Furthermore, the findings of this study provide important insights to university management and educators on how to develop programmes and curriculums to promote entrepreneurship and equip graduates to be self-employed.

Information Technology Act 2000 in the context of Model Law on Electronic Commerce (MLEC) – A Conceptual Overview

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Abstract

The Information Technology and Information Technology Enabled Services (IT & ITES) sectors are the important fields, which is undergoing rapid evolution and contributes to changing the shape of Indian business standards. This sector includes software development, consultancies, software management, online services, and business process outsourcing (BPO). According to one Times of India article, India's liberalization was possible due to its IT industries. In the 1990s, the industry started off with an export of nearly $100 million with around 5,000 employees. Now it is an industry that thrives globally, wherein India's IT exports are now around $70 billion with 2.8 million employees working in this sector. Hence, there is a sheer necessity to foster this sector through adequate legal aspects and appropriate protection measures to enhance its growth and sustenance. It is in this context; United Nations Commission on International Trade Law (UNCITRAL) – a subsidiary body of the U.N. General Assembly (UNGA) has enacted the Model Law on Electronic Commerce (MLEC) in 1996. The MLEC was the first legislative text to adopt the fundamental principles of non-discrimination, technological neutrality and functional equivalence that are widely regarded as the founding elements of modern electronic commerce law. The MLEC has been established to bring in uniformity within the e-commerce law aspects in several countries. Furthermore, the overall UNGA members counselled that each country should think about this MLEC before creating changes to its laws. Moreover, today e-commerce has been surmounting in many developing countries in accordance with pandemic and continues in the post-pandemic scenarios respectively, particularly a country like India with huge population accounting for voluminous transaction every day. This voluminous transaction through e-commerce applications and platforms necessitates the checks and balances in terms of legal aspects in terms of IT security measures to provide a safe ambience for users. Hence, the Information Technology Act, 2000 was notified on 17th October 2000 by Government of India, which deals with law-breaking and electronic commerce (e-commerce). While the primary draft was created by the Ministry of Commerce, Government of India because of the E-Commerce Act, 1998, and it was redrafted because of the 'Information Technology Bill, 1999', and officially passed in 2000. India became the 12th country to alter cyber law once it passed the knowledge Technology Act, 2000. The present study intends to understand and verify the objectives and options of the knowledge Technology Act 2000 (IT Act 2000) of India and its relevance to that of MLEC.

Geochemical Characterization of Groundwater using Pollution Index of Groundwater (PIG) in Hard Rock Aquifer of Cuddapah, Andhra Pradesh, South India

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Abstract

The most typical source of drinking water and irrigation in the entire planet is groundwater. Also, a region's groundwater chemistry is controlled by a variety of factors. Hence, monitoring the quality of the water on a regular basis becomes crucial. Moreover, the quality decline of ground water leads to planning the corrective actions in advance to stop further damage. This study intends to determine the hydrogeochemical characterization of groundwater in and around hard rock terrain of Cuddapah, Andhra Pradesh, South India. Thirty groundwater samples have been taken in April 2022 and evaluated for its physical characteristics, wherein major cations and anions are categorically examined to determine the geochemical characterization of the groundwater surrounding the Cuddapah Y.S.R District's hard rock aquifer in Andhra Pradesh, India. According to the pollution index of groundwater (PIG) categorization, 21% of total groundwater samples fall into the low pollution zone whereas 47% of samples fall into the moderate pollution zone and 32% of groundwater samples fall into the high pollution zone. Therefore, appropriate preventive steps must be adopted to reduce the health risk in this area. The geogenic and anthropogenic sources are the main contributing factors for fluoride and nitrate respectively. In furtherance, the rock dominance is the predominant hydrogeochemical factor controlling the water chemistry.

An Empirical Analysis on Psychological Well-Being and Personality Traits of Working and Non-Working Women

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Abstract

The employment status of women affects their psychological well-being, wherein the personality traits of these women positively or negatively influence this well-being as well. The study intends to compare the psychological well-being and personality traits of working and non-working women. Furthermore, the study has been carried out to understand the relationship between various domains of psychological well-being such as self-acceptance, positive relations with others, autonomy, environmental mastery, purposes in life, and personal growth with personality traits like conscientiousness, agreeableness, neuroticism, openness to experience, and extraversion of working and non-working women. The sample size comprised of 326 women out of which 163 are under working and 163 non-working categories. The data are analysed using (1) Ryff's Psychological well-being scale and (2) Big Five inventory for the assessment of psychological well-being dimensions and personality traits of women respectively. The results inferred that working woman scored higher in all the dimensions of psychological well-being than non-working women. Also, they scored higher in all the personality traits except for the extraversion trait. The psychological well-being dimensions have been significant and positively correlated to all personality traits except for neuroticism for both the women groups. It has been observed in this study that the proposed personality traits influence psychological well-being differently for working and non-working women respectively. Thus, the employment status of women plays an important role in changing the relationship between psychological well-being with personality traits.

Attitude Towards Girl Child and Awareness Regarding Beti Bachao Beti Padhao Scheme in the State of Punjab: An Empirical Investigation

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Abstract

The overall goal of the Beti Bachao Beti Padhao (BBBP) initiative is to promote the girl child and to spread awareness against declining child sex ratio. The main objective is to understand and find out if the campaigns under this BBBP scheme are able to raise enough awareness and bring about the changes in behaviour and attitude of people towards girl child. Keeping this in view, the study intends to determine the effectiveness of the Beti Bachao Beti Padhao scheme in the state of Punjab. Also, it aims to examine whether the campaign of this scheme has been able to create adequate awareness among masses and bring about the desired change in the mindset of people towards the girl child. The samples included 231 parents and are drawn through purposive sampling. The survey method has been administered to collect data thereby evaluating the BBBP scheme. The results indicated that there is a positive change in the mindset of the people, wherein 69.18 percent of the parents mentioned that their 'daughters are pursuing the career of their own choice'. However, a vast majority of 96.10 percent of the parents expressed that they are 'ignorant regarding schemes like BBBP' and only 13.42% of them 'believe in equal rights of men and women in household affairs'.

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Practices of Educational Communication during Covid-19, in Nepal: A Study on Perspectives of Teachers, Parents and Students

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Abstract

The educational communication during Covid-19 pandemic has created enormous impact in the teaching-learning process. In this context, the practices of educational communication have affected the aforesaid process to a large extent. Hence, there is a need to understand the perspectives of Teachers, Parents and Students during the pandemic towards such practices. This research examines efforts for learning in the pandemic, wherein it intends to examine the instructional strategies employed in Nepal's public schools during the Covid-19 pandemic. The study adopted a qualitative approach and included committed kids from various schools, teachers, and parents from Kageshwori Manohara Municipality of Kathmandu District, Nepal. The data is collected through interviews through a narrative inquiry and interpreted accordingly. The findings of the study indicated that there have been unexpected changes in people's lifestyle and taking online coursework is challenging, because of pandemic effect.

Geospatial and Machine Learning Approaches for Groundwater Potential Zones Mapping in Semi-Arid Regions of Andhra Pradesh, South India

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Abstract

The presence of groundwater in semi-arid environments varies through time and place due to environmental variations, topographic factors, and aquifer characteristics. Moreover, precise delineation of Groundwater Potential Zones (GWPZs) is crucial for the sustainable management of water resources in these aforesaid aspects. The present study integrates Remote Sensing (RS), Geographic Information System (GIS), and Analytic Hierarchy Process (AHP) to define and appraise GWPZs in a semi-arid region of Southwestern Andhra Pradesh, India. The ten thematic layers in raster format (geology, geomorphology, soils, drainage density (DD), lineament density (LD), land use and land cover (LULC), topographic wetness index (TWI), normalized difference vegetation index (NDVI), land surface temperature (LST), and slope) are produced. These thematic layers are integrated using the raster calculator to produce the GWPZs map after the AHP procedure and rank assignment. Also, by analyzing the water residence time data from 20 wells spread around the research region, validation was carried out. Additionally, the Receiver Operating Characteristics (ROC) curve has been created using machine learning approaches, suggesting a reasonable accuracy prediction (AUC). For those making decisions on the preservation and sustainable management of groundwater resources, this research gives meaningful information.

Recurrent Emotional Disturbances - An Empirical Study on Premenstrual Symptoms amongst Teaching Faculty

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Abstract

The emotional disturbances play an important role in one's life, wherein it affects the work-life balance of any individual. The present study intends to understand the possibilities of relationship between emotional aspects and premenstrual symptoms. The literature review on stress factors indicated that premenstrual symptoms accounts for work-life behavioural patterns of women. Hence, the present research intends to explore the recurrent emotional disturbances due to premenstrual symptoms particularly on women faculties in academia. Based on the literature review, the researcher included dependent variables like Emotional Discomfort (ED), Thoughts, Feeling & Behaviour Patterns (TFB), Causes for Stress (CFS) and General Dream Patterns (GDP). The study included 62 women from two colleges and two schools and adopted exploratory research design and descriptive method. The statistical analysis has been carried out using SPSS 25.0, wherein the reliability and Pearson's correlation analysis are analyzed. The reliability test through Cronbach's Alpha technique were found for Emotional Discomfort (0.928); Thoughts, Feelings and Behavioural Pattern (0.814); General Dream Patterns (0.800) and Causes for Stress (0.845). The Emotional Discomfort (ED) showed perfect positive correlation ($r = 0.347^{**}$, $p < 0.1$; $r = 0.370^{**}$, $p < 0.1$ & $r = 0.457^{**}$, $p < 0.1$) with Thoughts, Feelings & Behaviour Patterns (TFB), General Dream Patterns (GDP) and Cause for Stress (CFS) respectively. The findings suggests that increase in emotional disturbances accounts for increase in thoughts, behavioural patterns, general dream patterns and cause for stress of women in academia. It is clearly implied from the study that emotional disturbances exists among women teaching faculties and periodically impact their work-life behavioural aspects to a large extent in accordance with the premenstrual symptoms. Hence, this needs to be addressed in order to reduce emotional discomfort during the premenstrual phase, thereby reducing work-life imbalance.

Dowry and Women Harassment: A Menace to Indian Society

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Abstract

Human rights are the inalienable rights of every human being. The rights given by the Indian Constitution ensure that the citizens of India are entitled to them. Amongst all the rights one of the fundamental rights guaranteed is the right to equality. It is even after the celebration of the 73rd constitution day, Article 14 remains under question in the context of gender equality in general. The research shreds of evidence on socio-political, economic-educational, and cultural aspects prove that women are remaining a vulnerable group in India, though the position of women is gradually raising in these areas. Despite, several special acts enacted for women's rights, the harassment against women is increasing day-by-day due to their vulnerability. Even though the existence of stringent laws such as Dowry Prohibition Act-1961, Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act-2013, the harassment against women has been still increasing in our Democratic country India. According to the NCRB-2021 report, the cases pending on trial concerning to cruelty by husband and his relatives, dowry deaths, and Assault on Woman with Intent to Outrage her Modesty including sexual harassment are 6,51,405, 50,511, and 4,25,770 respectively. The in-laws and husbands together harass their women for the sake of dowry. Practically, nights are considered as the restricted time for women to travel alone. As the blood and flesh same for every human being why the discrimination happening? Why are women treated only as flesh and sex property? What is the reason behind the failure of law pertinent to women's rights? This theoretical paper attempts to find answers to these questions through qualitative methods using secondary data sources.

Assessment of Eating Attitudes and Body Shape Concerns among Youth – An Empirical Analysis

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Abstract

The eating behaviour is a function of individual and environmental factors, which influence meal timings, quantity of food intake and food preferences. Eating disorders are one of the most under-recognized psychiatric conditions that can lead to considerable morbidity. With their high workloads, academic pressure, and peer influence, the youths may be more likely to develop disordered eating. The sample comprised of 150 respondents from Amritsar in the age group of 17-25 years, wherein 71.3 percent of them are females and remaining 28.7 percent are males. The instruments used are demographic sheet, eating attitudes test (EAT-26) and body shape questionnaire (BSQ-34). The statistical analysis has been carried out using Statistical Package for Social Sciences (SPSS) version 17.0 for descriptive analysis (frequency, percentage, and mean), univariate analysis (Chi-square) and Pearson's correlation analysis. The results showed significant positive correlation between BMI categories and BSQ score at ($p < 0.05$). Furthermore, the score of EAT > 20 has been observed with 14.9 percent females and 11.6 percent males respectively. Also, the score of BSQ > 80 has been observed with 22.4 percent females and 13.9 percent males respectively. The high score on BSQ is the mediating (proximate) risk factor for eating (disorder) morbidity. In furtherance, the influence of other/distal risk factors may be mediated through it. The present research suggests that early detection of disordered eating attitudes and body shape concerns in youth should be a priority to provide appropriate intervention thereby helping to reduce the long-term negative consequences associated with both conditions.

Feministic Caricature: Igniting Virtual Minds to Ideological Clarity

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Abstract

An era of political activism and social transformation aimed at advancing women's civil rights and social equality, which is also known as the fourth wave of feminism. The fourth wave feminists could now coordinate international campaigns through online mode as a result of growth of social media platforms across the globe. One of the main reasons for the new wave of feminism is due to the Internet's widespread use. The online forums, blogs, and social media apps have made it relatively simple for feminist activists, particularly young women to join the social movement and promote consciousness-raising. They also had the option of anonymity online, which have made it simpler for them to share experiences of sexual harassment, sexism in both their personal and professional life, and misogynistic and oppression. Moreover, the cartoons and comics may rapidly appeal to a larger audience, and social media platforms like Instagram and Facebook have gradually developed into a hub for witty, hilarious, and fiercely feminist caricatures. Social media has made it easier for women to talk about their experiences with sexual assault and gender discrimination. It has also helped to keep the world's attention on issues that have fallen-off the news agenda. Thus, the online-posted feminist comics and cartoons have been significant to the Fourth Wave of Feminism. As a result, an effort is made here to draw attention to cartoons posted on social media and their contribution to women's empowerment and gender equality. This study employs a descriptive and analytical research methodology for understanding the feministic caricature through social media.

Contributions of the Legend J.W. Madeley - Historical Overview of Madras Water Works

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Abstract

Chennai, the 6th most populous city in India according to 2011 census has always faced the problem of shortage of drinking water since its inception as the city. The British settlers in Chennai initially came up with short-term temporary solutions to the question of water supply. However, in the turn of 20th century, the extent of city and the population began to grow immensely, and stop-gap measures such as drawing water from nearby wells and ponds, like the Seven Wells, no longer proved effective. A system of tapping a good source of water and then diverting it through channels to a common hub from where the water supply to rest of the city could be initiated has to be developed to meet the future demands. There are number of individuals involved in devising a plan for the proper supply of water to the city and its inhabitants like Hormus Nowroji. It was James Welby Madeley who is popularly known as "Father of Madras Water Supply" has successfully completed the execution of the Kilpauk Water Works, which started the supply of drinking water to the city of Chennai. This research study is an attempt to highlight the efforts and works of J.W. Madeley. Also, to review his Kilpauk Water Works in today's context towards providing effective drinking water supply at Chennai.

Historical View on High Court of Madras - A Benchmark of Indian Judiciary

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Abstract

The history of Indian judicial system from the early times is mired in obscurities. The early systems varied with dynasties and there were no uniform or standard system adopted all over India. It was during the medieval period, the law was applied based on their religion. Similarly, for Muslims the court applied Quranic principles while it was the Shastras for Hindus. This was the case until the British arrived in India. With the advent of the British, the administration of justice and development of courts began from 1639 A.D. in the Presidencies of Madras, Bombay and Calcutta. The Regulating Act of 1773 established the Supreme Court in Calcutta and in Madras it was established by King George III on 26th December 1800. India came under the direct control of the Crown by the Proclamation of Queen Victoria. In 1858 A.D. on the recommendation of the Law Commission, the Parliament of England passed the Indian High Court Act 1861, which suggested the establishment of High Courts in the three Presidencies. These High Courts would become the precursors to the High Courts in the modern day. The Act abolished the Supreme Courts, Sadar Diwani Adalat Courts and Sadar Faujdari Adalat Courts in the Presidencies. The High Court of Judicature at Madras was established by Letters Patent (dated 26th June 1862) granted by Her Majesty Queen Victoria. The present study traces the journey of High Court from a Crown's Court to a People's Court. Also, an attempt is made by the researchers in comparing the features of old British system with the current existing system.

Green Audit in Academic Institutions of Bargarh Town in Odisha - A Comprehensive Study

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Abstract

Green audit is the process of evaluating an organization's environmental impact and identifying opportunities for improvement. In this context, carbon footprint calculation plays an important role, wherein it helps in the assessment of academic institutions. The present study is a part of the doctoral research, which focuses on conducting a green audit in academic institutions to assess their environmental management practices and identify opportunities for improvement. Also, it focuses on the development and application of a tool for calculating the carbon footprint of an academic institution. The study involved in collecting data from various sources, including surveys, interviews, and case studies, and analyzed the data using various statistical techniques. The researcher has found that green audits can be a powerful tool for reducing the environmental impact of academic institutions and promoting sustainability. The carbon footprint calculation tool is designed to be user-friendly and easy to use. Also, it is a valuable resource for institutions looking to assess their environmental performance and identify opportunities for improvement. It allows academic institutions to input data on their energy consumption, waste management, and transportation, and then generates a report detailing their carbon footprint and suggesting areas for improvement. This research findings of the study makes a significant contribution to the field of sustainability in academic institutions and provides a practical guidance for institutions looking to reduce their environmental impact.

Unraveling the Themes of Social Injustice and Social Stratification in the Novels of Charles Dickens

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Abstract

Charles Dickens's novels deal with some of the most pressing issues of the society like class distinction, poverty, child labor, exploitation of the poor and perils of rapid industrialization. These issues are still prevalent in the present-day society. Moreover, Dickens's novels are read as classics because they are beyond the limitations of 'time and age'. This research paper undertakes to study three selected novels of Dickens - *The Great Expectations, A Tale of Two Cities* and *A Christmas Carol* to trace the themes of social injustice and class division and analyze how these differences adversely affected the society now and then. The set-in different backgrounds and by dealing with diverse characters, these novels depict how the widening gap between the wealthy and needy can have catastrophic effects on the society. Dickens a master of creating intense characterization portrays his characters suffering from the tyranny of supremacy. He skillfully describes the mistreatment and abuse of the poor and weak by the wealthy and powerful. However, in Dickens's world one can witness the oppressed hoping, dreaming, and rebelling to claim their rightful position in the society. The ruthless realities of hardships in Dickensian tales are also evident in today's world. This research study aims to draw parallels between the fictional world of Dickens's novels and the present society. It not only draws an analogy to the immorality depicted in these texts but also analyzes the moral lessons emphasized therein, which is a trademark of all Victorian literature.

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Determination of Heavy Metal Contamination in Ground Water Sources in Tadipatri Mandal of Anantapuramu District, Andhra Pradesh, India

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Abstract

India's groundwater is a significant source of water for drinking, agricultural, and industrial uses respectively. The goal of present study is to assess the quality of the groundwater in Tadipatri Mandal of Anantapuramu District in the Indian state of Andhra Pradesh with regard to heavy metal contamination. The study area is situated in the eastern region of Anantapur District and is bounded by latitudes 14°31'56.316"N to 14°46'30.973"N and longitudes 77°55'48.574"E to 78°08'6.424"E. It has a total area of 361 km^2 with an average elevation of 232m. Penna is the main river in the study region, and the area's geology is made up of limestone, dolomites, and shales with mafic intrusive from the Cuddapah supergroup's Chitravatri group. It is by using American Public Health Association (APHA) 2012's recommended procedures, a total of 32 groundwater samples have been taken from bore wells and hand pumps from the study area and put into a clean polythene bottle before being fully rinsed with deionized water and prewashed with 10 percent nitric acid. The heavy metals in water samples such as Iron (Fe), Aluminum (Al), Copper (Cu), Arsenic (As) and Zinc (Zn) in water samples are analyzed using the ICP-OES instrument (Agilent 725 series). The heavy metals are found in the range of Fe (07-1493 µg/L), Al (1-29 µg/L), Cu (1-86 µg/L) and Zn (8-121 µg/L) respectively. Moreover, from the analysis, it has been observed that 50 percent of groundwater samples possess a higher concentration of iron content as compared to drinking water standards (WHO) (300 µg/L). The high concentrations of iron can be attributed to shale dissolution and are primarily released from limestone weathering that contains Fe_2O_3 as well

as from oxidation of pyrite present in the limestone. Furthermore, anthropogenic sources such as fertilizers, industrial effluents, heavy metals from landfill leachates, mine tailings sewage, liquid waste disposal in deep wells, drainage from industrial waste lagoons, and industrial waste leakage can also contaminate groundwater. Also, the excess iron has been found in the drinking water, which may cause gastrointestinal upset, anemia, hemochromatosis, and skin pigmentation.

A Conceptual View on Pros & Cons of Social Media: Confronting Challenges Faced by Women in India

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Abstract

Technology has a direct impact on women's development by permitting their voices to be expressed or seen globally. Social media is an influential emerging platform across the universe for global communication and overcoming traditional challenges such as unemployment, low income, poor education and poor health or lifestyle. It also played a key role in empowering women and encouraging women, wherein it has created various opportunities for the civic population to plead their opinions for the movements. These aspects of social media supporting women are very much needed in the current scenario, whereas much response is not brought out by the mainstream media. The social media serves as a platform to share and elevate the voice of women when it comes to the huge challenges faced by women in growing cybercrime and their voices being suppressed. Such sites are used by harassers, online trolling, cyber abuse, and some are also vulnerable to predators due to their online presence. This research paper focuses on how to effectively use social media to empower women in a conservative culture-centric country like India. It also discusses the benefits and drawbacks of using social media. The study also discusses on women who are vulnerable to online bullying and online harassment. It also highlights the social media initiatives, analyses' existing hurdles, and make thoughts on how to use social media to profitably widen the scope of action on women's rights and gender equality.

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Historicism of Folktales – A Conceptual Overview

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Abstract

Folktales are verbal narratives that underline the tradition, culture, and standards of the society they belonged to. Although folktales appear to be myths their importance cannot be denied in the proofs found to ascertain facts. The folklores whichever popularly known amongst people are diverse and place oriented, which are also treated as heritage in some countries. It is a combination of tales or legend and one or many art forms. Some sources can also be derived from the semiotics of the folktales. Over years they have been elevating the social, cultural, and cognitive traits of both individual and community. The past has always found ways to establish its significance with evidence. The research study in this field is difficult as the practice is oral and often overlapped with other disciplines and one must find the clarity. History and Historicity are two different terms, which need to be evaluated to find the foundation of these folklores. The disciplines like sociology, linguistics, social anthropology, and even ethnology need to be observed to ascertain the reality and find traces of these folklores. The primary sources of information can facilitate the secondary sources to develop over years. However, often the question arises whether these folklores are all myths, stories, and fiction? This research study tried to derive the historical evidence of folktales. Also, to investigate the historicity and authenticity of cultural belief systems around the world. Moreover, historicism prompts the use of language structure for better analysis as one can find the Russian folklores are very much different from Indian Folktales. The paper also discusses the acute similarities in the myths and their structures, which raises the curiosity to explore their origins, sources, and development over time.

Mineral Chemistry of Syenites of Kamanery, Pakkanadu-Mukkanadu Alkaline Complex, Tamil Nadu

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Abstract

The mineral chemistry from the syenites of Kamanery at Pakkanadu ultramafic- alkaline-carbonatite rocks of Pakkanadu- Mulakkadu alkaline complex, Salem District, Tamil Nadu, has been investigated by using electron probe microanalysis. The syenite dyke are well-exposed at Kamaneri and are massive, leucocratic, medium to coarse grained and K-feldspar rich. The modal mineralogy includes K-feldspar (60-88 percent by vol), clinopyroxene (3-9 percent), amphibole (2-14 percent) as major minerals with mica (0.5-2 percent) quartz (0.5 percent), magnetite (0.5-1 percent), garnet (0.5-8 percent) and sphene (0.5-3.5 percent) as accessories. The subhedral amphiboles are calcic with low silica and alkalies, typical magmatic amphiboles. They are primary and represent an early magmatic liquidus phase. Furthermore, they have $Ca_B \geq 1.50$, $(Na+K)_A \geq 0.5$ and $Ti \leq 0.5$ and are classified as hastingsites. The subhedral to anhedral micas are classified as homogenous biotite with a restricted compositional variation of X_{Fe} and X_{Mg} values. The peraluminous biotites are a calc-alkaline akin to orogenic subduction. A wide variation in the Al^{iv} content is attributed to silica activity, temperature, and total pressure respectively. The euhedral to subhedral pyroxenes (cpx) are associated with the amphiboles and their textures suggests slow cooling. The pyroxenes are classified as Ca-rich varieties with non-aluminous character consistent with a low Al_2O_3 (1.81-2.69 wt percent) and low Mg# (0.489-0.517 wt percent). Moreover, the rapid crystal growth, which is a stimulus for Al substitution while Ti content is dependent on the bulk rock chemistry. The garnets are showing euhedral rhomb dodecahedral crystal habit and rich in CaO (29.79-30.03 wt percent), Al_2O_3 (6.32-6.94 wt percent) and FeO (21.53-22.21 wt percent). The

results of 04 garnet analysis are presented shows the pronounced substitutions in Al- Fe^{3+}, Ca – Mn, Mg- Fe^{2+} at the octahedral and dodecahedral sites. Based on the stoichiometry, it is clear that the garnets in the syenites at Kamanery, straddles at andraditic – grossular composition bearing magmatic signatures.

Impact of Training on Knowledge and Skills of Homemade Cocoa Chocolates among Rural Youths for Livelihood Security

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Abstract

Cocoa is one of the important plantation crops gaining commercial importance in Uttar Kannada district. The large area under areca nut and coconut in the district gives scope for the inter space to create multi-storeyed cropping systems supporting Cocoa area expansion. The department of Horticulture has brought many programmes to encourage the farmers in the district to take up cocoa cultivation. As a result, about 1500 ha is covered under Cocoa resulting in the production of 2750 tonnes of wet beans and 550 tonnes in the district. Moreover, many women progressive farmers are involved in cocoa cultivation and strong women SHG movement, whereas prosperous tourism in the district gives scope for agro processing and value addition units. Hence, the present study has been conducted with the objective to impart the knowledge and skills on commercial production of home-made chocolates. A quasi-experimental research design has been used to study the impact of training on production and sales of homemade cocoa chocolates from beans to market for livelihood security of rural youths. A sample of 150 youths aged between 20 to 35 years were selected from Sirsi and Siddapur taluks of Uttar Kannada district. Also, an intervention program to develop knowledge and skills to start an enterprise on homemade cocoa chocolates has been imparted for a period of three months. The training is imparted on processing of beans, product development, storage, packaging and marketing and an interrupted time-series design is used to test the efficacy of the training. Moreover, analyses of the results revealed that there is a significant impact from pre-test I (at 1 month), pre-test II (3 months) and after completion of the intervention programme after six months of the training on homemade cocoa chocolates. There has been a high gain in knowledge and skills of the respondents on homemade cocoa chocolates from 1.30 per cent to 56.60 per cent to 91.30 percent indicating high impact of training. The knowledge and skill of respondents on homemade cocoa chocolates increased considerably on components of product development, storage and packaging and marketing. Furthermore, among 150 participants, 6 youths were linked to Kadamba marketing society, a leading farmer's society in processing of indigenous Uttar Kannada fruits and vegetables. The follow-up after six months of training indicated that each youth have average earnings between Rs. 15,000 to Rs. 20,000 per month. This indicates the importance of need-based entrepreneurial trainings for the livelihood security of rural youths.

Motivational Beliefs and Learning Strategies as Predictors of Academic Achievement of Prospective Teachers

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Abstract

The academic achievement is day-by-day, attracting the attention of educators because it has been taken as a criterion for selection in various walks of life. Over the years, students with a good academic achievement are closely related to two correlated psychological components, motivational beliefs and learning strategies. Motivation is the study of what pushes or pulls an individual to start, direct, sustain and finally end an activity. A learning strategy is an individual's way of organizing and using a particular set of skills in order to learn content or accomplish other tasks more effectively. In furtherance, both the motivation and learning strategies are the need of an hour in education institutions. This study is significant because academic achievement is the unique responsibility of all educational institutions established by society to promote a whole sum scholastic development of the prospective teachers. Motivational beliefs and learning strategies should be stated as part of an integrated whole to successfully interpret leaning outcomes in prospective teachers' achievement. The data is collected from 300 prospective teachers of different districts of Punjab through self-constructed Socio-Demographic Sheet and Motivational Strategies for Learning Questionnaire (MSLQ). The study has adopted descriptive research method. The correlation analysis has been performed to study the relationship between academic achievement and motivational beliefs and learning strategies of prospective teachers. Also, regression analysis has been conducted, wherein motivational beliefs and learning strategies as predictors of academic achievement of prospective teachers. The results have revealed that peer learning and help seeking dimensions of learning strategies are significant, but peer learning emerged to be a positive contributor of academic achievement. In furtherance, peer learning and help seeking dimensions have a positive and significant correlation with academic achievement of prospective teachers. It suggested that collaborating with one's peer learning has been found to have positive effects on academic achievement and learners must learn to manage is the support of others. Furthermore, asking for peer help in obtaining favorable grades in exams, wherein it is necessary for the prospective teachers to apply this information from peers in real-life context. The comparative studies could have been undertaken in order to find the relationship of motivational beliefs and learning strategies with other variables in cross-cultural groups across country.

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Design Intervention Through Handwoven Pattu Weaving – An Overview

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Abstract

The 'Pattu' weaving is an ancestral craft of India, which is also practiced by menfolk of Meghwal community in Jaisalmer, Jodhpur and Barmer districts of western Rajasthan. It is often categorized as a supplementary weft weaving technique in which, the extra weft creates embroidery like effect. The motifs used in 'Pattu' are simple geometrical shapes inspired from inanimate objects in the surroundings. The main objective of this study is to develop motifs and apparel for contemporary market. Keeping this in view, the researchers have attempted to record and document the traditional motifs of 'Pattu' in textiles using photographic presentation by conducting a field visit. It is to be noted that there are fifteen motifs developed, which are used for preparing the fabric for Indo-Western garments in accordance with market trend. The previous research studies conducted in this area indicated the acceptability of developed garments, wherein the observation is that consumers liked the garments. The study suggests that there is a demand for 'Pattu', and it can be increased through product diversification, which in turn will help to broaden its market. The study has provided an overview in terms of design intervention and in disseminating regional sensibilities, resources and in strengthening socio-economic benefit of various stakeholders involved in it.

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An Investigation on the Traits and Operational Procedures of Living Business in Fashion

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Abstract

The household accessories and living business is expanding as customers' interest in living environments grows. As part of this trend, international fashion corporations develop their own brands early to capitalise on the varied benefits of each brand in an effort to boost sales. Due to the growing number of international fashions, the companies are looking to expand their living-related businesses. This study aims to investigate the methodologies needed for domestic fashion brands to explore their business. Furthermore, study on traits of the current brands of international fashion corporations is provided as utilizing the popularity of fashion brands, the impact of distinct textile patterns, increasing synergy by diversifying the company's operations, insufficient variety in materials suited for living items and unavailability of knowledge on quality parameters. The results have suggested working with designers and textile firms. Also, it envisaged into investigating the business strategies by including brand licencing and extending the strategy of private label living items by distributing firms.

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A Study on Gradual Increase in Youth Awareness towards Sustainable Fashion and Ecological Consciousness of Purchase Behaviour

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Abstract

The fashion industry contributes to approximately 20 percent of the world's industrial water pollution as most clothes are made of plastics, which will soon cause a microplastic catastrophe. This fashion industry has environmental effects, and second in oil in terms of worldwide pollution. Keeping these in view, the current study intends to acquire information about youth knowledge in a sustainable fashion. The data has been derived from primary and secondary sources. The sample included 102 respondents, wherein the age group are between18-26 years. The study adopted survey method and data is collected through a questionnaire and information has been collected regarding reducing, reusing, and recycling to get the appropriate information on sustainable fashion. Also, the present study inferred that a maximum number of respondents purchased their clothing because of its style. The data also indicates that millennials are likely to buy used electronics than clothing and other textiles. It has been observed that, due to fear of germs and cleanliness, some are reluctant to share their purchased items on social media. Furthermore, it has been found that millennials want to avoid repeating their dress choices as they feel ashamed to wear twice back-to-back. This in turn adds to the problem of fashion pollution. The study showed that a fall in the use of recyclable and reused apparel may be linked to increased use of social media.

Inquiry Training Model: A Dynamic Tool to Develop Scientific Thinking in Science Education

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Abstract

The educational evaluation program frequently assumed that students' performance levels are determined by their intelligence, effort, and motivation. The schools and other institutions value certain ways of thinking over others in actual instructional practice. Moreover, the students whose thinking styles do not align with the institution's values are typically penalized. It is considered that the learning styles of students and likelihood have a fit between the ways in which a subject is taught. This is applicable to many of the subjects particularly science. In furtherance, science is more of a method of inquiry and thought than a body of knowledge. Therefore, it is quite more important to teach students how to think than what to think and perceive them as they are learning. The inquiry, curiosity, and wonder should be alive in every classroom by which children's minds have to open-up to creativity and new possibilities. Furthermore, inquiry-based learning is the ideal complement to child's natural curiosity. It is to be noted that as opposed to traditional classroom learning, wherein a teacher presents facts and knowledge about a subject. The inquiry-based learning propounded by Richard Suchman is an educational strategy in which students follow methods and practices similar to that of professional scientists in order to construct knowledge. Suchman's model was developed on basis of analysis of different methods utilized by creative researchers particularly physical scientists. This inquiry training model gives more emphasis on developing awareness of and mastering the inquiry process. The present study aims to analyze the science process skills that students are taught by inquiry training model which are better than students into conventional learning. The study suggests that role of teachers in teaching with inquiry training is very much required as mentors and facilitators.

A Study on Concept Attainment of Adolescents in relation to their Spiritual Quotient of Fatehgarh Sahib District, Punjab

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Abstract

Today, with the rapidly changing environment the concern of the concept formation and a code of spirituality among the youth of nation. There is also a need for an appropriate awareness among the adolescents regarding concept attainment as well as spiritual intelligence. Keeping this in view, a study has been conducted on 100 adolescent students to analyze the relation between their knowledge regarding concept formation of various common terms and issues and spiritual intelligence. The results of the present study revealed that there exists average level of relation and significant differences between concept attainment and spiritual quotient among the adolescents. This research suggests useful applications at global level in the field of education, psychology and well as different branches of sciences and act as a ladder for future research.

Role of International Instruments on Human Rights: A Legal Perspective

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Abstract

The phrase 'Human Rights' has been used in an abstract and philosophical sense either as denoting a special category of moral claim that all humans may invoke more pragmatically. Moreover, as the manifestation of these claims in positive law like the Constitutional law guarantees to hold governments accountable under the National Legal processes. The core system of 'Human Rights' promotion and protection under the United Nations has a dual basis: the UN Charter adopted in 1945 and a network of treaties subsequently adopted by UN members. The normative basis of the UN Charter system is Universal Declaration of Human Rights, adopted on 10th December 1948, which has given authoritative content to the vague reference to human rights in the UN Charter. Although, it has been adopted as a mere declaration, without a binding force, it has subsequently come to be recognized as a Universal yardstick to check the State conduct. In the discipline of Human Rights, India has made significant contributions to international law; providing the legal duties of the nations in their relations with one another and their treatment of others. This paper discusses about the role of different international instruments in promoting, protecting and securing the human rights through varied national legal perspectives.

A Conceptual View on Interpretative Phenomenological Analysis as a Tool for Research in Education

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Abstract

Phenomenology is especially important to promote spontaneity and a natural flow of ideas, which are central to research in education. All research in education can be argued as a spontaneous act, wherein the research and its methodology are in a continuous state of analysis and implementation. In this context, phenomenology can serve as a method to build a relationship between the researcher and the researched, through the lens of 'Lived Experience'. The Interpretative Phenomenological Analysis (IPA) becomes a qualitative approach to examine the conditions of personal lived experience. IPA serves as a critical tool in the analysis of phenomena without the constraints of quantitative analysis and it is widely used in the areas of psychology, pain medicine and oncology. The critical analysis of areas where they lived experience is in a constant state of flow, necessitates the use of IPA, due to its viability as a method for interpreting complex interactions between the subjects and the themes of research. Moreover, the qualitative nature of IPA makes it a suitable tool to understand the 'Student's Experience' in an experiential learning classroom. The primary limitation of quantitative analysis in education is the use of hard end-points, which do not further examine the areas of experiential learning. The experiential learning strengthens the concept of learning through simulations and the interplay of the individual with the real world. Furthermore, the experiential learning promotes a connect between the teacher and the learner, and this connect builds the thread of understanding. The present study discusses about IPA as a tool for research in education with regard to experiential learning. The education in Science, Technology, Engineering, Arts and Mathematics (STEAM) utilizes aspects of IPA and creates the perception of research within a three-dimensional space. The present research focuses on this three-dimensional perception of research in education that are essential to the development of an effective foundation of methodology. Also, recommends it as a novel method of research in education and destroys the barriers to education and literacy. The study suggests that further research needs to be conducted in the use of IPA as a method of research in education and this paper explores this.

Changing Nature of Indian Federalism – An Overview

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Abstract

India has a vast territory with a great diversity of races, religions, castes, and languages. Moreover, the quest for one country can accomplish nothing without Federalism. The Indian constitutional reformers are convinced with regard to a need for federal polity when they drafted the constitution. Federalism means a treaty, a trust, or a form of political association with a constructive cooperation. This may be due to the existent system, wherein there is a separation of powers between the centre and the state. India's position is very controversial because the Indian constitution combines the features of a unitary and a federal constitution. The nature of federalism has never been the same throughout history. It is to be noted that when the same party was in power both at the centre and in the states, the federal system functioned quite smoothly. Also, from time-to-time, when a coalition government is in power, the functioning of federalism changes naturally, and today coalition politics is very much needed and order of the day. There are extensive constitutional provisions based on which the union government exercises effective control over the constituent states. Since 1950, a disturbing trend has been observed as the Union and competitor lists have grown while the state list appears to be shrinking. This has led to many questions regarding federalism and its redesign. As state governments are increasingly burdened with their fiscal obligations and centrally sponsored programmes should be fully funded by the central government. This will be an incentive for state governments to better implement such programmes. The centre should confine itself to policy making in these areas and leave the implementation to states, as they will be better able to assess local needs for public goods, which will maximize social welfare at the local level. Furthermore, in the 21st century there are many new challenges that need to be addressed. Federalism has a multi-party system, international treaties, environmental factors, terrorism, the voice of separation, globalisation, etc. However, any relationship between central government and inter-governmental organizations is at its core, wherein a political dispute that leads to economic conflict and underdevelopment, poverty, and the emergence of negative forces. Also, both the central and constituent governments must dedicate themselves to the task of preserving our nationhood through constructive Cooperative Federalism, which requires a high level of commitment. In the Indian context, any argument for strengthening the states by advocating the idea of coalition government is logically indefensible, but this does not mean that the states are appendages of the centre. The states have constitutional status and have a variety of legislative, executive, and judicial powers assigned to them to administer their territory. The era of coalitions cannot be supported over a long period of time because it makes the states stronger than the weak centre, which is contrary to Spirit of the Constitution to overcome the various divisive tendencies. It will serve as an

antidote to prevent such challenges from recurring in the future. In furtherance, both the central and state governments must dedicate themselves to the task of preserving our national integrity through Constructive Cooperation and Cooperative Federalism, which requires a high degree of political commitment, perseverance, tolerance, and willpower.

Achievement Motivation among Secondary School Students in accordance with School Environment – An Empirical Study

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Abstract

The achievement motivation plays a significant role in all spheres of human life particularly amongst students at schools. The reason being they are the future ray of hope of any nation. However, the environment acts as a catalyst with regard to achievement motivation. Hence, there is a need to understand the achievement motivation and its influence to that of school environment. Keeping this in view, the present research aims to examine the achievement motivation of secondary school students in relation to their school environment. The study targeted a population of 200 secondary school students of 10^{th} of Coimbatore, Tamil Nadu. In furtherance, the Achievement Motivation Inventory by Muthee and Thomas in 2009 and School Environment Inventory by Misra in 2002 have been used. The descriptive survey has been carried out for collection of data. The data obtained have been subjected to statistical analysis, wherein mean, standard deviation and t-test are calculated accordingly. The findings revealed that significant mean difference has been found in achievement motivation and school environment of secondary school students studying in government and private schools. Also, no significant mean difference between secondary school boys and girls in relation to their achievement motivation and achievement motivation to that of good school environment is higher than the secondary school students at poor school environment. The study suggests that school administrator has to maintain effective school environment in order to improve the educational level of school.

Encouraging Creativity and Metacognitive Practices in Higher Education with Special Reference to National Education Policy 2020

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Abstract

Metacognition is set forth plainly by pondering on one's reasoning. It alludes to the cycles used to plan, screen, and evaluate one's comprehension and execution. Moreover, metacognition incorporates a basic consciousness of one's reasoning and learning and oneself as a scholar and student. The metacognitive practices increase the students' capacities to move or adjust their figuring out towards new settings and tasks. They do this by acquiring a degree of mindfulness over the topic. Likewise, they also contemplate the undertakings and settings of various learning circumstances and themselves as students in these various settings. In furtherance, for making higher education more qualitative the creativity, innovation and metacognitive practices are very much important to incorporate in the curriculum. This conceptual research study mainly focuses on encouraging creativity and metacognitive practices in higher education with reference to NEP 2020.

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