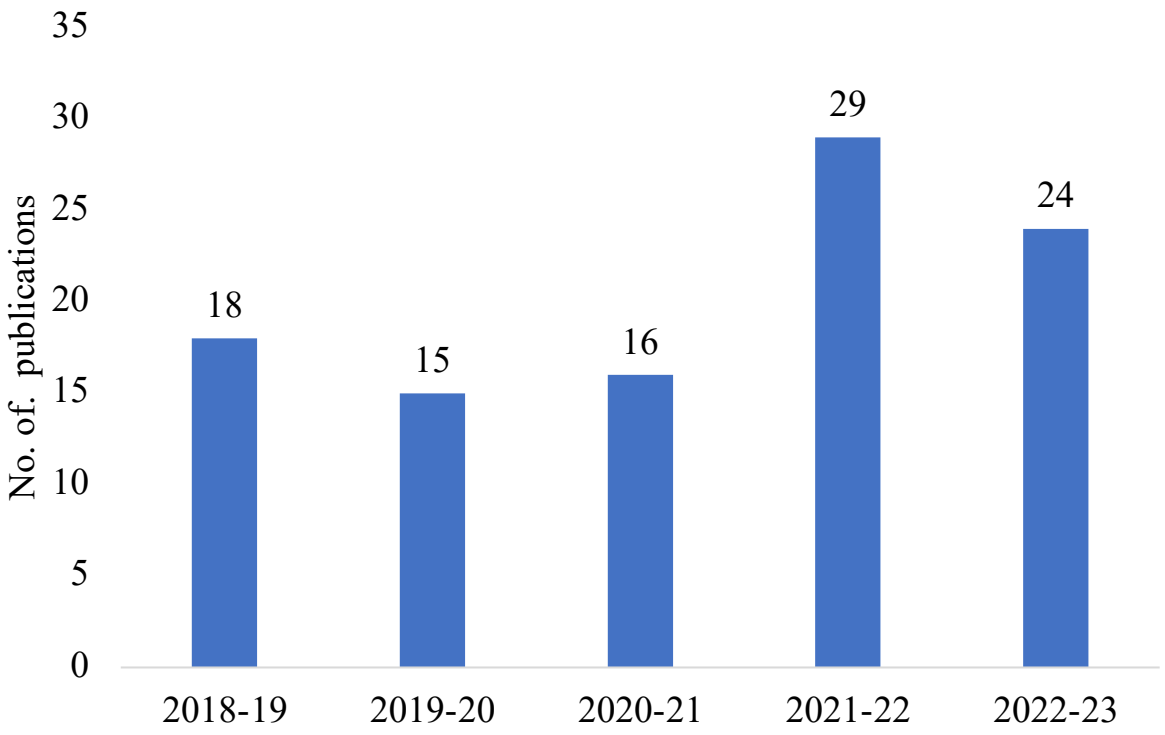
Rabindra Mahavidyalaya
Champadanga, Hooghly

3.3 Research Publications and Awards

3.3.1 Number of Research Papers in the Journals notified on UGC CARE list year wise during the last five years

Rabindra Mahavidyalaya
Champadanga, Hooghly

Publication of Research Papers in the Journals



Jayita Saha, Sumanti Gupta 2022-23

ELSEVIER

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Volume 100, October 2022, 107745

Molecular characterization, evolutionary and phylogenetic analyses of rice ACT/BAT-type amino acid transporters

Jayita Saha, Sumanti Gupta

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TYPE Data Report
PUBLISHED 05 October 2022
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OPEN ACCESS

EDITED BY
Turgay Unver,
FicusBio, Turkey

REVIEWED BY
Emre Ilhan,
Erzurum Technical University, Turkey
Hassan Ghazal,
National Center for Scientific and Technical Research (CNRST), Morocco

*CORRESPONDENCE
Dipankar Chakraborti,
dcgntcs@caluniv.ac.in

SPECIALTY SECTION
This article was submitted to Plant Genomics,
a section of the journal
Frontiers in Genetics

RECEIVED 01 August 2022
ACCEPTED 20 September 2022
PUBLISHED 05 October 2022

CITATION
Ghosh S, Purohit A, Hazra A, Mukherjee A, Bhar A, Gupta S, Chaudhuri RK and Chakraborti D (2022), Differential transcript expression profiles of susceptible and resistant pigeonpea cultivars at an early time point during Fusarium udum infection. *Front. Genet.* 13:1009127. doi: 10.3389/fgene.2022.1009127

Differential transcript expression profiles of susceptible and resistant pigeonpea cultivars at an early time point during *Fusarium udum* infection

Sanatan Ghosh[1], Arnab Purohit[2], Anjan Hazra[1], Aloleca Mukherjee[1], Anirban Bhar[3], Sumanti Gupta[4], Rituparna Kundu Chaudhuri[5] and Dipankar Chakraborti[1]*

[1]Department of Genetics, University of Calcutta, Kolkata, West Bengal, India, [2]EVA.4 Unit, Faculty of Forestry and Wood Sciences, Czech University of Life Sciences Prague, Prague, Czechia, [3]Post Graduate Department of Botany, Ramakrishna Mission Vivekananda Centenary College (Autonomous), Kolkata, West Bengal, India, [4]Department of Botany, Rabindra Mahavidyalaya, Hooghly, West Bengal, India, [5]Department of Botany, Barasat Govt. College, Kolkata, West Bengal, India

KEYWORDS

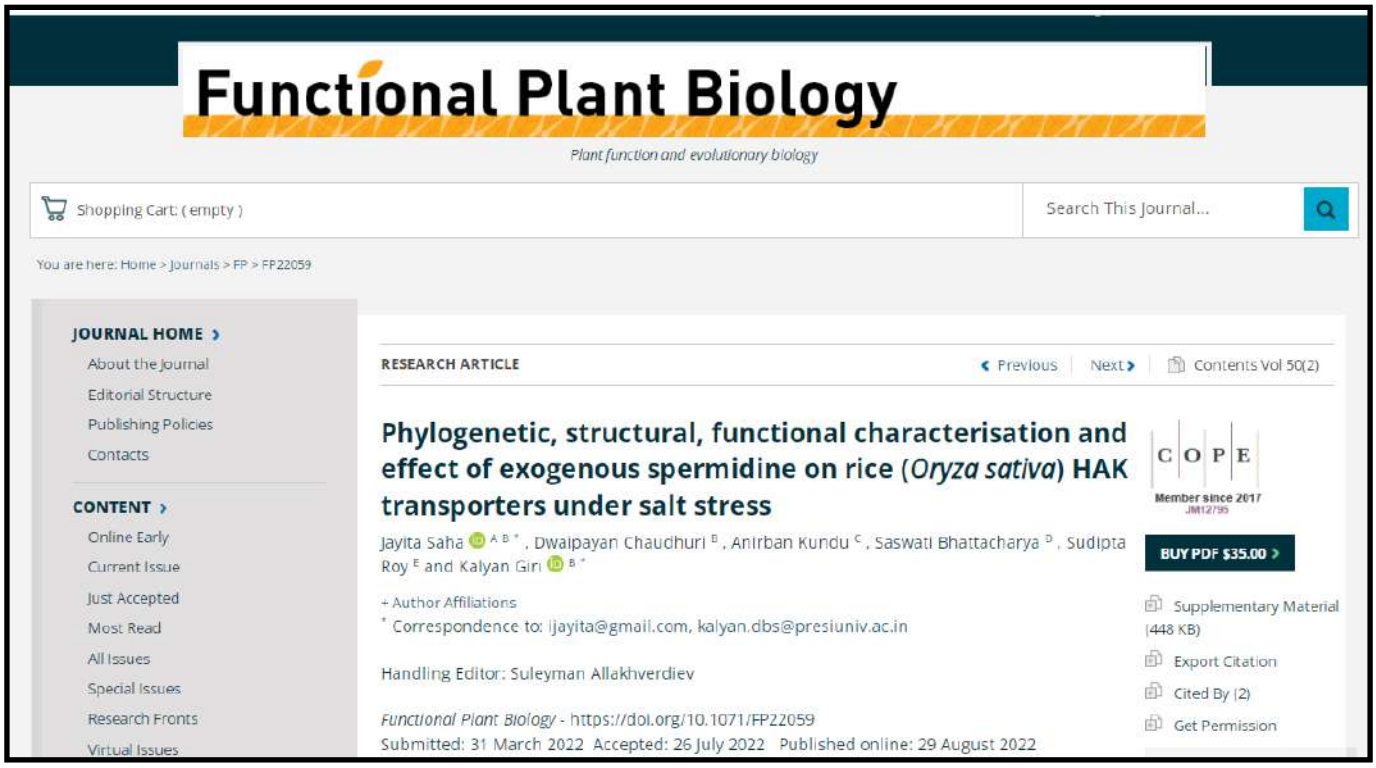
comparative transcriptomics, *Fusarium* wilt, next generation sequencing, fungal invasion, gene ontology

Introduction

Pigeonpea [*Cajanus* cajan (L.) Millspaugh] is ranked seventh among the legume crops, in terms of production, and is grown in arid and semiarid tropical regions of Asia, Africa, the Caribbean region, Latin America, and Australia. It is rich in vegetable protein (20%–22%), and its global productivity is nearly 5.012 million tonnes (FAO 2020). Pigeonpea is mostly grown as a field crop and as a backyard crop in more than 80 countries all over the world (Sameer Kumar et al., 2017). It is cultivated on 5.62 million hectares of land across the world, and India contributes 64% (2.85 million tons) of global production (Saxena et al., 2017). Pigeonpea is the second-most significant crop legume in India, mostly consumed as "dal." Seeds are an important source of protein for humans, whereas stems and leaves are used as fuel and animal feed. Vascular wilt caused by *Fusarium udum* (Butler) is the most damaging disease in pigeonpea and results in an annual loss of approximately 470,000 tons of grain in India (Saxena et al., 2017). *F. udum* is a soilborne, mitosporic, and necrotrophic fungus without known sexual stages in its lifecycle (Agrios 2008). *F. udum* produces three types of asexual spores, namely, thick-walled chlamydospores, 2–6 celled macroconidia, and 1–2 celled microconidia. The most frequently and abundantly produced spores are microconidia which are also found inside the infected host's vascular system. Macroconidia are primarily found on the surface of infected and dead host plants in sporodochia-like groupings. The old mycelium of the pathogen produces chlamydospores which can survive in the soil for a very long period (Purohit et al., 2017).

In pigeonpea, *F. udum*-mediated vascular wilt occurs at the early or late flowering, podding, or even seedling stages (Choudhury 2010). Xylem vessel clogging is an important phenomenon that leads to wilt in infected pigeonpea. Infected xylem

Jayita Saha, 2022-23



Functional Plant Biology

Plant function and evolutionary biology

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RESEARCH ARTICLE

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Phylogenetic, structural, functional characterisation and effect of exogenous spermidine on rice (*Oryza sativa*) HAK transporters under salt stress

Jayita Saha [A B *], Dwaipayan Chaudhuri [B], Anirban Kundu [C], Saswati Bhattacharya [D], Sudipta Roy [E] and Kalyan Giri [B *]

+ Author Affiliations

* Correspondence to: ijayita@gmail.com, kalyan.dbs@presiuniv.ac.in

Handling Editor: Suleyman Allakhverdiev

Functional Plant Biology - https://doi.org/10.1071/FP22059

Submitted: 31 March 2022 Accepted: 26 July 2022 Published online: 29 August 2022

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Supplementary Material (448 KB)

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Rabiul Alam, 2022-23

DOI: 10.1002/bio.4399

SPECIAL ISSUE ARTICLE

LUMINESCENCE WILEY
The Journal of Biological and Chemical Luminescence

Recent developments in the creation of a single molecular sensing tool for ternary iron (III), chromium (III), aluminium (III) ionic species: A review

Sudipta Saha[1] | Rabiul Alam[2]

[1]Department of Chemistry (UG+PG), Triveni Devi Bhalotia College, Raniganj, Paschim Bardhaman, India

[2]Department of Chemistry, Rabindra Mahavidyalaya, Champadanga, Hooghly, India

Correspondence
Rabiul Alam, Department of Chemistry, Rabindra Mahavidyalaya, Champadanga, Hooghly, 712401, India.
Email: rabiul.alam1950@gmail.com

Abstract

Rational design of a molecular sensing tool is an important topic in molecular recognition, signalling, and optoelectronics that has piqued the interest of chemists, biologists, and environmental scientists. Approximately 150 years have passed since the beginning of the fluorescent chemosensor sector. Due to the paramagnetic properties of Cr^{3+} and Al^{3+}, it is tough to prepare a photoluminescence plug-in detector. Most dye-based Al^{3+} sensors must be utilized in organic or mixed solvents for robust hydration of Al^{3+} in water. The sophisticated molecular design of sensors, conversely, allows for the detection of these metal ions in aqueous medium. The design of chemosensors using various fluorophores and their mechanisms of action have been thoroughly discussed. A literature survey covering the design of chemosensors and their mechanisms of action have been thoroughly discussed covering the period 2010–2022 and that was carried out including innovative and exemplary activities from numerous groups throughout the world that have significantly contributed to this sector. The most important advantages of these probes are their aqueous solubility and quick response with outstanding selectivity and sensitivity for temporal distribution with high fidelity of metals in living cells.

KEYWORDS
colorimetric, fluorimetric, molecular sensor, trivalent metal ions

Abbreviations: AIEE, Aggregation-induced emission enhancement; BSA, Bovine serum albumin; C2C12, Immortalized mouse myoblast cell line; CH_3CN, Acetonitrile; CH_3OH, Methanol; CHEF, Chelation enhancement of fluorescence; DFT, Density functional theory; DLS, Dynamic light scattering; DMSO, Dimethyl sulfoxide; DNSA, Dansyl amide; EDTA, Ethylenediaminetetraacetic acid; em, Emission; ESI, Electrospray ionization; ESIPT, Excited-state intramolecular proton transfer; EtOH, Ethanol; ex, Excitation; FAAS, Flame furnace atomic absorption spectroscopy; FI, Fluorescence intensity; FRET, Fluorescence resonance energy transfer; HaCaT, Aneuploid immortal keratinocyte; HeLa, Human epithelial carcinoma cell; HEPES, 4-(2-Hydroxyethyl)piperazine-1-ethanesulfonic acid; HepG2, Human hepatocellular liver carcinoma cells; hMSCs, Human mesenchymal stem cells; HOMO, Highest occupied molecular orbital; HRMS, High-resolution mass spectrometry; ICP-ES, Inductively coupled plasma emission; ICP-MS, Inductively coupled mass spectrometry; ICT, Intramolecular charge transfer; K_a, Binding constant/association constant; K_d, Dissociation constant; K_f, Formations constant; K_{sp}, Solubility product; LMCT, Ligand-to-metal charge transfer; LOD, Limit of detection; LUMO, Lowest unoccupied molecular orbital; MS, Mass spectroscopy; NIR, Near infrared; PET, Photoinduced electron transfer; PL, Photoluminescence; PMDTA, *N,N,N′,N″,N‴*-pentamethyldiethylenetriamine; Raw 264.7, Abelson leukaemia virus transformed cell; SH-SY5Y, Human neuroblastoma cell line; SMMC-7721, Hepatocellular carcinoma cell; SQ, Squaraine; TBET, Through bond energy transfer; TDDFT, Time-dependent density functional theory; TEM, Transmission electron microscopy; THF, Tetrahydrofuran; TPE, Tetraphenylethylene; Tris, Hydroxymethyl]aminomethane; Tris-HCl, Tris(hydroxymethyl]aminomethane hydrochloride; TXRF, Total reflection X-ray fluorimetry; UV, Ultraviolet; Vis, Visible; W138, Normal lung fibroblast.

Ambalika Biswas, 2022-23

Indian Journal of Socio Legal Studies. (Vol.- XII. Issue- I. ISSN 2320-8562. Impact Factor(IIJF):2.139 2023)

Yellow Wallpaper a Reflection of Women's Mental Health

Ambalika Biswas*

This paper attempts to show the position of women and their mental health in the 19th Century American Society through the portrayal of the woman character who is the narrator of the story and supposedly went through post-partum depression. This short story is stated to be a collection of a journal entry and an autobiographical story of Charlotte Gilman Perkins. This autobiographical work is shown from the light of the mental health of women and the rest cure method practiced in the society then.

This paper also discusses the concept of mental illness, the approach toward it, and the ideas of mental health with respect to women in 19th-century American Society. The following segment emphasizes on application of this knowledge to The Yellow Wallpaper with the purpose to study the image of insanity in Gilman's description and compare it with the mental health of women in the present society.

Even though there was an increase in expertise in medical science bias about female physiology was only taken care of in the 19th century. The narrator is supposed to have suffered from hysteria which is undoubtedly the first mental disorder attributable to women. Hence, we aim to discuss the mental health of women in the 19th century and compare it with the women of present society through the portrayal of the narrator's mental illness and Gilman's treatment of it as depicted in The Yellow Wallpaper.

Keywords: Women's Mental Health, Post-Partum Depression, Rest Cure, Insanity, Hysteria.

Introduction:

The short story *The Yellow Wallpaper* is considered a significant work in early American feminist literature for dealing with women's mental and physical health in the nineteenth century in America. The societal standards of femininity and the position of women in the 19th century as well as their mental health has been constantly questioned in this story. The analysis of the story can have a dynamic application of these ideals upon women which can have great effects on their mental health. The author Charlotte Perkins Gilman is also said to have gone through mental illness. Hence, this story is also said to be autobiographical which deals with the fact that a constant male subordination by the male characters of the story and their lack of ability to understand the narrator Jane led to aggravated mental illness resulting in insanity by the end of the story. *The Yellow Wallpaper* is a story that is set in 19th-century American society and revolves around a couple who shifts to a new house during their summer vacation. The narrator of the story suffers from mental depression. Her husband John is her treating physician as well as a doctor by profession. John deals with his wife in a unique way where he instructs her to refrain from activities like writing or working. Jane was denied any vocation to express herself through creative modes like writing. This method of treatment existed in society then and was known as *restcure* where a woman was kept completely isolated from social and physical activities to not overstimulate her. Rest cure was introduced by S.Weir Mitchell in 1873. His patients were mainly women with mental illness who "had tried out the doctor, and exhausted drug shops and spas and travel, and outlived a nurse or two" (Poirier,1983. p.17). In the case of the narrator, the failure to understand her on the part of her husband further pushes her into a fantasy world where she reflects her inner turmoil through a yellow wallpaper and identifies a trapped woman inside the wallpaper who makes a desperate attempt to be freed. Finally, she rips open the yellow wallpaper and completely becomes hysterical by the end of the story in her attempt to free the imaginary trapped woman from the yellow wallpaper. Hence the text portrays a woman's declining mental health due to constraints put upon her by society. The outcome of this failure to adhere to societal norms is life-threatening. This paper attempts to discuss women's mental health issues as portrayed in the 19th and 20th centuries and in the present times.

Mental Health can be defined as our emotional, psychological, and social well-being. How we think, feel and act is governed by mental health. Mental Health determines how we cope with stress in our day-to-day life. In every stage of life, Mental Health is considered to be a very important aspect. However, it is important to understand that poor mental health and having a mental illness are not the same thing, both these terms can be used interchangeably. For example, a person with poor mental health may not be diagnosed with mental illness and similarly, a person with poor mental illness can also enjoy periods of good mental health. (About Mental Health).

* Assistant Professor (English), Rabindra Mahavidyalaya,Champadanga, Hooghly,West Bengal

Amit Das, 2022-23

IJFANS INTERNATIONAL JOURNAL OF FOOD AND NUTRITIONAL SCIENCES

ISSN PRINT 2319 1775 Online 2320 7876

 UGC CARE Listed (Group -I) Journal Volume 11, Iss 12, 2022

IMPROVING TEACHING QUALITY IN HIGHER EDUCATION THROUGH STUDENT EVALUATION AND FEED-BACKS

Amit Das

Assistant Professor, Department of Education, Rabindra Mahavidyalaya ,Champadanga, Hooghly, West Bengal, India

Abstract

This paper examines the role of student evaluation and feedback in enhancing teaching quality in higher education. Beginning with a comprehensive literature review, the historical context, theoretical frameworks, and previous research on student evaluation effectiveness are explored. Methodologies for implementing student evaluation systems, including sampling procedures, data collection methods, and evaluation instruments, are discussed. The paper analyzes the impact of student feedback on teaching quality, including quantitative and qualitative analyses of survey data, identification of common themes and patterns in student feedback, and changes implemented based on student suggestions. Best practices for maximizing the utility of student feedback and recommendations for policy and practice in higher education are presented. Future directions and research implications are also discussed, highlighting emerging trends, areas for further inquiry, and implications for policy and practice. Overall, this paper provides valuable insights into the importance of student evaluation and feedback as catalysts for continuous improvement in teaching quality in higher education.

Keywords: Student evaluation, Feedback, Teaching quality, Higher education, Best practices

1 Introduction

1.1 Background and Significance

In the realm of higher education, the significance of student evaluation and feedback mechanisms in improving teaching quality has been widely acknowledged (Smith et al., 2018). As universities strive for excellence in teaching and learning, understanding the historical evolution and theoretical underpinnings of student evaluation becomes imperative (Brown & Emery, 2019). Previous studies have emphasized the pivotal role of student feedback in informing instructional practices and fostering faculty development (Gibbs & Coffey, 2017). However, despite its importance, challenges persist in effectively implementing and utilizing student evaluation systems (Dolan & Long, 2020).

1.2 Purpose of the Study

This literature review aims to explore the multifaceted role of student evaluation in higher education and its implications for teaching quality improvement (Sears & Wood, 2017). By synthesizing existing research, this study seeks to provide insights into the effectiveness of various evaluation methods and their impact on instructional practices (Muniz et al., 2018).

IJFANS International Journal of Food And Nutritional Sciences
Official Publication of International Association of Food and Nutrition Scientists

IJFANS INTERNATIONAL JOURNAL OF FOOD AND NUTRITIONAL SCIENCES

ISSN PRINT 2319 1775 Online 2320 7876

Bikash Halder, 2022-23

© 2022 IJRAR August 2022, Volume 9, Issue 3 www.ijrar.org (E-ISSN 2348-1269, P- ISSN 2349-5138)

IJRAR.ORG E-ISSN: 2348-1269, P-ISSN: 2349-5138

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ISSUES AND CHALLENGES OF DIGITAL TECHNOLOGY IMPLEMENTATION IN DIFFERENT COLLEGES OF WEST BENGAL: A STUDY

Bikash Kumar Halder
Librarian
Rabindra Mahavidyalaya
Champadanga, Hooghly, West Bengal, India

Abstract: In the modern society where digitization is the main phenomena there is the problem to implement the digital system in broader way to the society. The different problems may be education, monetary, political, and technological and intensify of the human being. The study mainly focuses to the higher educational institutions in west Bengal of India where full digitization is the main problem. This study is basically based on the survey method and observation method with apply snow-ball sampling technique. Highlight the different issues and different challenges to implementing the digital technology in the higher educational institution of West Bengal and what is the basic view of the teachers in the different institution about digital technology implementation. The study finds that most of the institutional colleagues are more or less fond about the digital technology, but the main problems are lack of fully support by the authority and other stakeholders and fund supply. Hence the Government and institutional authorities should provide supporting fund and infrastructural facilities and also organize different seminar, conference, training program and workshop to implementing the digital technology.

Keywords: Digital system, Higher education, Digital technology, Utilization, Acceptance, College, West Bengal, India

1. INTRODUCTION:

In the digital age where implementing the digital system in higher education, a big challenge. The acceptance of digital system is the main problem in India. So, it is not easy to accepting the digital facility by the student's and other academicians those who are in touched with higher educational institutions. In case of higher education system, it is the prior issues and challenges of the students and teachers for accepting and utilizations of the digital system. Most of the students and teachers are not proficiency about the digital system and they don't know how to use the digital system, they are very much proficiency about the traditional system i.e., chalk and talk method even those teachers, who are proficiency about digital technologies but there is also the problem that their institution doesn't accommodating the digital infrastructure. It may be implemented if simple changes be done;firstly, in the higher educational departmentthey develop their infrastructure for implementing the digital system and secondly the authority also supports to implement the digital technologies and providing the necessary fund for implementation of digital technology. Academicians are also making themselves expert if they participate indifferent training programme, conference, seminar workshop to aware about the digital system.Presently the digital system is rapidly implementing to the difference institution and teachers and students are also interested for the new system because the digital technology is easy to

ভূগোল ও উন্নয়ন চর্চা
17th Year, Volume-1 ● June 2022
Registration No : Wbben/2007/21524 ● ISSN 2581-4788

দূরসংবেদন ব্যবস্থা ও ভৌগোলিক তথ্য ব্যবস্থাপনার আলোকে হলদিয়া পৌরসভা এলাকার ভূমির ব্যবহার পরিবর্তন—একটি আলোচনা

সঞ্জয় মাইতি* ও শিবব্রত দাস**

সারাংশ :

ভূমি ব্যবহারের ক্রমশ পরিবর্তন যেকোনো শহর বা নগরের একটি গুরুত্বপূর্ণ বৈশিষ্ট্য। বর্তমানের আলোচ্য শহর হলদিয়াও তার ব্যতিক্রম নয়। ২০০১ থেকে ২০১৮ সাল পর্যন্ত কীভাবে এখানকার ভূমির ব্যবহার পরিবর্তন হয়েছে, তা বিভিন্ন সালের উপগ্রহ মানচিত্রের সাহায্যে দেখানো হয়েছে। ২০০১ সালের ক্ষেত্রে ল্যান্ডস্যাট ৭ এবং ২০০১ এবং ২০১৮ সালের জন্য লিস্ III (LISS-III) উপগ্রহ মানচিত্র ব্যবহার করা হয়েছে। QGIS সফ্‌টওয়ার এর মাধ্যমে সুপারভাইসড ইমেজ ক্লাসিফিকেসন-এর দ্বারা মোট ৫টি ভূমি ব্যবহারের শ্রেণি তুলে ধরা হয়েছে; যথাক্রমে নির্মানাধীন এলাকা (Built up Area), কৃষি জমি, জলভাগ, উদ্ভিদ আচ্ছাদন এবং উন্মুক্ত ভূমি (Open Land). Supervised ইমেজ ক্লাসিফিকেসনের পর প্রস্তুত মানচিত্রের যথার্থতা নির্ণয় করার জন্য ক্ষেত্র সমীক্ষা করে বাস্তব সত্য পরীক্ষা করা হয়েছে।

সাংকেতিক শব্দ :

উপগ্রহ মানচিত্র, Landsat-7, LISS-III, QGIS, Supervised ইমেজ ক্লাসিফিকেসন

ভূমিকা :

যে কোনো দেশ কালের নিরিখে পরিবেশের পরিবর্তনের একটি গুরুত্বপূর্ণ নিয়ন্ত্রক হল—ভূমি ব্যবহারের পরিবর্তন (Turner, 1994)। এই ভূমি ব্যবহার সম্বন্ধে অনুসন্ধান যে কোনো শহরের বৃদ্ধির পর্যালোচনার ক্ষেত্রে বেশ গুরুত্বপূর্ণ। তাই যেকোনো পরিকল্পনা সঠিক এবং বর্তমান সময় পর্যন্ত নির্ধারিত (Up to Date) ভূমি ব্যবহারের ওপর নির্ভর করে থাকে। পরিবেশ এবং নগরীয় ভূমি ব্যবহারের মানচিত্র প্রস্তুতে দুরসংবেদন ব্যবস্থা একটি গুরুত্বপূর্ণ তথ্যের উৎস হিসাবে কাজ করে (Patkar, 2003)। বর্তমানে নগর পরিকল্পনাকারী এবং গবেষকদের কাছে নগরের ভূমি ব্যবহারের মানচিত্র খুবই গুরুত্বপূর্ণ।

উদ্দেশ্য :

এই সমীক্ষার প্রধান উদ্দেশ্য হল কীভাবে হলদিয়া পৌরসভা এলাকার ভূমির ব্যবহার ২০০১ সাল থেকে ২০১৮ সাল পর্যন্ত পরিবর্তন হয়েছে, যে সম্পর্কে অনুসন্ধান ও বিশ্লেষণ করা।

উপাও ও পদ্ধতি :

এই সমীক্ষা বিভিন্ন সময়ের দূরসংবেদন এর স্থানিক তথ্য (Spatial Data)-র ওপর নির্ভরশীল। উপগ্রহ মানচিত্রগুলির USGS Global Visualization Viewer এবং NRSC-এর Bhuvan ওয়েবসাইট থেকে নেওয়া হয়েছে। ভূমি ব্যবহারের মানচিত্রগুলি QGIS (V3. 14.0 Pi) সফ্‌টওয়ারের সাহায্যে করা হয়েছে। এই সমীক্ষা সুপারভাইস্‌ড ইমেজ ক্লাসিফিকেসন ও Visual ইমেজ বিশ্লেষন-এর ওপর নির্ভরশীল। ২০০১, ২০১১ এবং ২০১৮ সালের ভূমি ব্যবহারের মানচিত্রগুলি Ground truth verification দ্বারা যাচাই করা হয়েছে।

ওয়ার্ড ভিত্তিক মানচিত্র এবং ভূমি ব্যবহার সম্পর্কিত তথ্যের জন্য হলদিয়া পৌরসভা এবং হলদিয়া উন্নয়ন পর্ষদ (HDA)-এর সাহায্য নেওয়া হয়েছে।

*গবেষক (ফকির মোহন বিশ্ববিদ্যালয়) এবং কলেজ শিক্ষক, ভূগোল বিভাগ, রবীন্দ্র মহাবিদ্যালয়, হুগলি (বর্ধমান বিশ্ববিদ্যালয়)।
ই-মেল "maitysanjaygeo@gmail.com"
** অধ্যাপক, ফলিত ভূগোল বিভাগ, র‍্যাভেন্‌শ বিশ্ববিদ্যালয়, কটক

Original Article

Seasonal Migration and Child's Schooling: A Survival Approach

Contemporary Voice of Dalit
1–21

DOI: 10.1177/2455328X221131663
journals.sagepub.com/home/vod

Susmita Sengupta[1] and Sanat Kumar Guchhait[2]

Abstract

The article opts to investigate the long-term effects of parental seasonal migration on a child's access to school education. The phenomenon of seasonal migration 'leaving child at home' or 'accompanied by' is a very common feature in the Purulia district where migration is the only viable option to sustain livelihood in lean-agricultural season. Although parents' migration in such areas seems to be essential for the family economy, lack of parental care is found to be responsible for academic and psychological non-adjustment that affects a child's education to a great extent. The Cox Regression Hazard Model and the Kaplan–Meier Estimator analysis of school participation have been employed to explore the survival probability of children at varying contexts, viz. migration status, gender, caste and age. The result shows the negative impact of parental migration on school participation of left-behind children leading to early dropout before the completion of the school education cycle.

Keywords

Seasonal migration, left-behind, opportunity cost, survival function, dropout

Introduction

India made a Constitutional commitment (86th Amendment Act, 2002; Article 21-A) to provide free and compulsory education to all children in the age group of 6–14 years, but the goal which was expected to be achieved by 1960, remains elusive, till today. Still large numbers of children, especially in specific groups remain excluded from schooling, jeopardizing equitable access to elementary education (Govinda & Bandyopadhyay, 2008). The reasons why children are unable to complete basic education in developing countries have been attributed to structural factors at household, school and societal levels (Colclough et al., 2003). Seasonal migration at the household and societal level usually shrinks the window of opportunity to access education of the children left behind. Seasonal migration leaving children behind at home may have adverse consequences for adolescent behaviours (Antman, 2012), especially educational attainment leading to frequent absenteeism and a high rate of school dropout (Antman, 2010). Moreover,

[1] Department of Geography, Rabindra Mahavidyalaya, Champadanga, Hooghly, West Bengal, India.
[2] Department of Geography, The University of Burdwan, West Bengal, India.

Corresponding author:
Susmita Sengupta, Department of Geography, Rabindra Mahavidyalaya, Champadanga, Hooghly, West Bengal 712401, India.
E-mail: ssg.serampore2016@gmail.com

RAY: International Journal of Multidisciplinary Studies, E-ISSN: 2456-3064
Volume VIII, No. 1 / April, 2023, 2021, pp. 33-40.

The Reflection of Totalitarianism in Orwell's *1984* compared with Polpot's Cambodian Regime

Ambalika Biswas
Assistant Professor,
Department of English,
Rabindra Mahavidyalaya,
Champadanga, Hooghly.
ambalikab8@gmail.com

Structured Abstract:

Purpose: This paper attempts to discuss the totalitarian regime as discussed in the dystopian novel *1984* by Orwell and compare it with the totalitarian regime during Polpot's rule in Cambodia known as Khmer Rouge.

Study Method: This paper involves an intertextual reading of the two texts.

Findings: Theoretically speaking totalitarianism is a form of government that does not allow freedom to individuals and pursues to subjugate almost all aspects of a person's specific life to the authority of the state. A perfect totalitarian society is portrayed in Orwell's *1984* where he discusses a society of government with absolute power. The story depicted in this novel indicated to the readers in 1949 an actual possibility in the future where if totalitarianism were not opposed then some variation of the world described in the novel could become a reality in only thirty-five years. The totalitarianism represented in *1984* by Orwell can be widely compared with the totalitarianism represented in Polpot's regime in Cambodia during the Khmer Rouge. During the Polpot regime, the Cambodian genocide took place from 1975-1979, it was one of the worst human tragedies that the world saw in the last century. The Khmer Rouge regime headed by Pol Pot combined extremist ideology with ethnic repression and an infernal disdain for human life to produce subjugation, desolation, and killing on a gigantic scale.

Originality: In this paper, the totalitarianism presented by Orwell in the novel *1984* will be compared with the totalitarianism practiced by Pol Pot during Khmer Rouge.

Paper Type: Theoretical Research Paper.

Keywords: Totalitarianism, Khmer Rouge, Genocide, Extremist Ideology, Repression.

Introduction

In Orwell's *1984* the novel portrays the social settings that took place when the novel was written. The novel represented the features of a totalitarian government which are substituting the previous government at times by force, having an apparently captivating leader, having

Bikash Halder, 2022-23

June 2022

A Study on UGC-CARE Journals of Library and Information Science

Partha Chattopadhyay Librarian
Hiralal Bhakat College, Nalhati, Birbhum, West Bengal, chattopadhyaypartha224@gmail.com

Bikash Kumar Halder Librarian
Rabindra Mahavidyalaya Champadanga, Hooghly, West Bengal, bkh.bikash@gmail.com

Amit Das, 2022-23

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For the paper title of

" STUDY ON NEW PROBLEMS AND OBSTACLES FACING INDIA'S EDUCATIONAL SYSTEM"

Published in

Anveshana's International Journal of Research in Education, Literature, Psychology and Library Sciences

Volume-7, Issue-6

NOV/DEC 2022, ISSN: 2456-3897 (Online)

Dr. G. Mohana Charyulu
Editor-in-Chief
Anveshana's International Journal of Research in Education, Literature, Psychology and Library Sciences
AIJRELPLS

Website: www.anveshanaindia.com **Email Id:** editor.apub@gmail.com

Daath Voyage
: An International Journal of Interdisciplinary Studies in English
(A peer reviewed open access journal)
ISSN 2455-7544
www.daathvoyagejournal.com
Vol.7, No.3, September, 2022

Attitudes to Prostitution: A Study of Manik Bandopadhyay's "The Final Solution"

Basabi Pal
Assistant Professor,
Rabindra Mahavidyalaya,
Champadanga, Hooghly
&
Pamoli Nandy
Research Scholar,
Bankura University, Bankura

Abstract: Manik Bandopadhyay's "The Final Solution" is a notable short story where he represents woman as the subject and active agent not as passive recipient, keeping aside the popular tendency of androcentrism in the history of partition. Providing an alternative history, this short story presents its female protagonist Mallika as an active participant of the post-partition changes. The story narrates the agony of the young mother Mallika who chooses prostitution to sustain her family and especially her little son. The family's prolonged starvation and her husband's inability to earn their livelihood make her so desperate that she accepts the job of prostitution. In this article we would like to focus her choice of prostitution from different feminist positions. There are varying opinions regarding feminist positions on prostitutions. This paper is an attempt to read Mallika's attitude to prostitution from her outlook of the liberal and radical feminist. This article details an analysis of Mallika's sentiments and thoughts regarding prostitution from these two primary feminist positions on prostitution.

Keywords: Partition, Prostitution, Liberal feminist, Radical feminist.

Introduction

Manik Bandopadhyay is a renowned Indian writer and one of the major novelists in the development of the 20thcentury Bengali literature. His literary career is enriched with famous novels and short stories. His notable fictional works are Padma Nadir Majhi (The Boatman on the River Padma), Putul Nacher Itikatha (The Puppet's Tale) and Chautoshkone (The Quadrilateral). He deals with the different problems in which the human beings become the worst victims. Sometimes he is interested in exploring the psychological condition of the protagonists of his fictions. He is a remarkable novelist with his representation of some characters who endure some extraordinary socio-political situations. Instead of making a subjective analysis of such socio-political crisis, he wants to depict the characters with their crisis and resolution.

International Journal of Statistics and Reliability Engineering
Vol. 9(3), pp. 475-480, 2022 (ISSN(P): 2350-0174 ; ISSN(O):2456-2378)

IARS

ORIGINAL ARTICLE

A Sharp Approximation of Stress-Strength Reliability for a Hollow Rectangular Tube under the Weibull Setup

Sadananda Chatterjee[1] and Sudhansu S. Maiti[2]

[1]Department of Statistics, Rabindra Mahavidyalaya, Champadanga, Hooghly -712401, W.B., India
E-mail:sadanandastat@gmail.com
[2]Department of Statistics, Visva-Bharati University, Santiniketan-731235, India
E-mail: dssm1@rediffmail.com

Received: 09 July 2022 / Revised: 12 October 2022/ Accepted: 02 November 2022

Abstract

This paper proposes a new approach for estimating the reliability of system where stress and strength are defined as complex function and whose reliability is difficult to manage through analytic techniques. The discretization was the earlier approach for reliability approximation. But the method fails to provide extent of error in terms of distributional parameters. To get rid of this difficulty, researchers propose method of offering bound based approach where reliability planner`s not only get a clear idea about the extent of error but also can manipulate in terms of design parameters. Here, this reliability approximation has been under taken under the Weibull setup which is widely used model for reliability analysis and a sharp approximation of reliability for a hollow rectangular tube has been found out. Using our work, reliability planners will be able to obtain reliability in terms of design parameters during the early stages of product design and adjust it according to their requirements.

Keywords: Stress-Strength Model; Hollow Rectangular Tube; Reliability Bounds; Reliability Approximation.

Notations

$S_X(x)$	: Survival function of a random variable evaluated at the x
$F_X(x)$	: Cumulative distribution function corresponding to $S_X(x)$
$W(\lambda, \alpha)$	: Weibull distribution with scale parameter λ and shape parameter α
$E(X)$	: Expectation of random variable X
R	: System reliability
$U(\lambda, \alpha, \beta, \mu, \phi, \Upsilon, \lambda_M, \lambda_Z, \lambda_Y, \lambda_T)$	: Upper bound of the reliability for hollow rectangular tube under the Weibull setup
$L(\lambda, \alpha, \beta, \mu, \phi, \Upsilon, \lambda_M, \lambda_Z, \lambda_Y, \lambda_T)$	: Lower bound of the reliability for hollow rectangular tube under the Weibull setup
R_{approx}	: Reliability approximation for hollow rectangular tube under the Weibull setup
$E(\lambda, \alpha, \beta, \phi, \Upsilon, \lambda_M, \lambda_Z, \lambda_Y, \lambda_T)$	: Extent of error for hollow rectangular tube under the Weibull setup

1. Introduction

Designing of items is an important task in manufacturing industries. The designing of an item should be done in such a way that its reliability is high. To assess the reliability one has to study the behaviour of the stress function of the item which is random in nature. Again stress may be function of some random components. Furthermore, there may be other factors also which make the stress a random variable. These factors are like change of operators, uncertainty in the environmental situations, measurement errors etc. Therefore, study of the stress function is an important aspect in reliability engineering. But in most cases the task is intractable due to complexity of the stress function. There are some techniques for approximating the reliability of complex engineering items.

Taylor-series, Monte-Carlo, Quadrature, Discretization, Discrete approximation and Reliability approximation approaches are used for approximating reliability of complex engineering items. In the recent past, discretization approach has been used widely for determining reliability of different complex items. This concept was originally imbedded in designing of factorial experiments, proposed by Taguchi (1978) to approximate a normal distribution by a 3-point discrete distribution. For discretizing stress and strength distributions, D`Errico and Zaino (1988) modified the experimental design method and suggested a moment equalization approach. English et al. (1996) applied this moment equalization rule in the stress-strength setup and approximate a distribution of a random variable by 6-point discrete distribution. They considered different alternative of strength parameters under normality of the factor variables and established that the errors from discretization were small enough under the normal situation. This moment based discretizing approach of English et al has drawn attention to the reliability analyst. Roy and Ghosh (2009) discretized a continuous random variable by equating the raw

Swadeshi Research Foundation A Monthly Journal of Multidisciplinary Research
International Peer Reviewed, Refereed, Indexing & Impact Factor - 5.2, Ex- UGC S.N. 4990
ISSN : 2394-3580, Vol. - 9, No. - 1, Nov. - 2021, Special Issues

2021

Effect of Cricket Training Programme on Selected Psychological Variables of School Going Boys

Sk. Sultan Ali
Research Scholar, Burdwan University
Dr. Hiralal Adhikari
Prof. N.B.S. Mahavidyalaya (RETD), Burdwan University
Dr. Atanu Das
Asst. Prof. Rabindra Mahavidyalaya, Burdwan University

Abstract :- The present study aims to focus on the effect of cricket training on the mental skills of the young school going boys since it is believed that cricket plays a vital role in the development of young people. It has been found from experience that cricket may prove to be a very useful long lasting component for the young stars all round development which in turn bring forth both educational and social benefits. According to the teachers cricket coaching helps in improving different psychological variables like Self confidence, Concentration ability, Motivation, Attitude etc. Therefore the study aims to focus with the objectives of the effect of cricket training on the self confidence of the school going boys, to find out the impact of the cricket training on the concentration ability of the young school going boys and to find out whether specific cricket training has any impact on the motivation level of the school going boys. For this purpose 30 school going boys have been selected and three psychological variables have also been selected. Before start training three psychological variables i.e self confidence, Concentration ability and the Motivation level of the selected boys have been tested with the help of some selected questions from Mental Skills Questionnaire by Bull, Albison & Shambrook (1996). After that the boys have been given six months cricket training on daily basis and after the completion of the training again the psychological variables have been tested. The collected data has been analyzed with statistical analysis.

Introduction :- Since the 16th century cricket has a very well known history span, playing international matches was started since 1844 although history reported that Test cricket was started in 1877. Though the game was first developed in Engaland, it is played in most of the countries. Measurement of the boundary varies from 75 yards to 100 yards from the middle pitch. Training belongs to a part of educational process in which young people can acquire new information. There is a scope for the people to re learn and reinforce their previously acquired knowledge and skills and most importantly the students can have chances to rethink and improve their skills bringing effectiveness at work. Drills means doing physical exercise by repeated practice in a mechanical manner.

Cricket is such a game that can overcome the boundary divisions of culture, language and social divisions. Cricket reaches all of our ethnic communities like no other sport. This game provides opportunities for those who are disabled physically and mentally.

Since it is a team game young people can learn to be co operative by supporting their peers inculcating positive behavior both in the classroom and outside the classroom. Competitive mind is also formed by playing this game. They get opportunities to dream big and work hard for bringing the success to achieve the goals. Not only it helps to gain success, but also it helps to defeat others or accept own defeat i.e they learn to manage or control themselves in difficult situations. One needs to be physically fit and strong and the ability of co ordination in different skills of the game.

Health benefits include :-

- Toleration and Preservance
- Balance and coordination

Safiul Alam Mallick, 2022-2023

Applied Surface Science 610 (2023) 155411

Contents lists available at ScienceDirect

Applied Surface Science

journal homepage: www.elsevier.com/locate/apsusc

Full Length Article

Linearly potentiated synaptic weight modulation at nanoscale in a highly stable two-terminal memristor

Sudheer [a,1], Rupam Mandal [a,b], Dilruba Hasina [a,b], Alapan Dutta [a,b], Safiul Alam Mollick [c], Aparajita Mandal [a], Tapobrata Som [a,b,*]

[a] SUNAG Laboratory, Institute of Physics, Bhubaneswar, Odisha 751 005, India
[b] Homi Bhabha National Institute, Training School Complex, Anushakti Nagar, Mumbai 400 094, India
[c] Rabindra Mahabidyalaya, University of Burdwan, Hooghly, West Bengal 712 401, India

ARTICLE INFO

Keywords:
Artificial synapse
Neuromorphic computing
Memristor
Resistive switching
Ion-implantation
Conductive atomic force microscopy
Functional oxide

ABSTRACT

The fabrication of nanoscale electronic synapses is an essential step towards the development of neuromorphic devices having a high integration density. Excellent learning abilities of such electronic synapses are crucial for the emulation of human brain potentialities. In order to achieve the same, linearly potentiated synaptic weight modulation (having negligible variability at nanoscale) is a primary and essential requirement. Here, we investigate solid-state memristor-based nanoscale synaptic emulators that exhibit linearly potentiated synaptic weight entries irrespective of amplitude, width, and frequency of the input voltage pulses. The memristive synapses under consideration replicate all the essential synaptic functions including potentiation and depression, spike-rate dependent plasticity, paired-pulse facilitation, and both excitatory-inhibitory responses and therefore, fulfil the requirements to build neuromorphic devices which can emulate brain-like functionalities. The incorporation of metallic ions in an amorphous oxide thin film leads to both distinctly linear weight adjustability and highly stable resistive switching operation which depend on the amplitude of the driving bias voltage. This study will help to understand and optimize the linearity in performances of oxide memristor-based synapses for neuromorphic applications.

1. Introduction

The excellent competences of our biological neural network [1,2] continue to inspire the scientific community during the last few decades to develop computers with human brain-like aptitudes, where information processing and memorizing can be performed within a single unit [3–5]. Neuromorphic architecture, an emerging next generation computation platform [6] is promising in this respect to build extremely compact energy-efficient artificial neural network comprising of several electronic synapses [7–9]. In search of a suitable material to develop efficient electronic synapses, extensive research is being carried out on metal oxides (MOs) due to their ability to mimic bio-synaptic functions by means of conductivity modulation and their compatibility with existing CMOS techniques [10–12]. It is interesting to note that in MOs, the existence of intrinsic defects such as oxygen vacancies (O_V) and their dynamics under external electric field is quite similar to the dynamics of ionic (Na^+, K^+, Ca^{2+}, etc.) migration in a biological synapse [13,14]. Till date, both two- and three-terminal structured electronic synaptic devices based on MOs are studied, albeit the former one is preferred due to the geometric parallelism as well as similar conduction analogy to a bio-synapse [15–18]. It has the simplest geometry and makes the fabrication process easier and less time-consuming [19,20]. Among various types of two-terminal electronic synapses [11,21–25], resistive switching (RS)-based memristive devices are considered to be highly efficient due to their large endurance, long retention, ultra-low power consumption, and fast switching capability [26,27]. However, the realization of neuromorphic functionalities in RS-based memristors with ultra-high integration density still remains a great challenge. To overcome this challenge, the characteristics of an artificial synapse need to be studied at nanoscale [7,17,28,29]. Considering the above factor, compact nanosized organization of artificial memristive synapses is achieved using conductive atomic force microscopy (cAFM) technique to mimic different functionalities of a bio-brain [30,31]. For instance, a conducting tip (~25 nm radius) maps both the morphology and response

* Corresponding author at: SUNAG Laboratory, Institute of Physics, Bhubaneswar, Odisha 751 005, India.
E-mail address: tsom@iopb.res.in (T. Som).
[1] Present address: FCIPT, Institute for Plasma Research, Bhat, Gandhinagar, Gujarat 382 428, India.

https://doi.org/10.1016/j.apsusc.2022.155411
Received 21 May 2022; Received in revised form 16 October 2022; Accepted 18 October 2022
Available online 23 October 2022
0169-4332/

Vivekananda Meta, 2022-23

© 2023 IJRAR March 2023, Volume 10, Issue 1 www.ijrar.org (E-ISSN 2348-1269, P- ISSN 2349-5138)

IJRAR.ORG E-ISSN: 2348-1269, P-ISSN: 2349-5138

INTERNATIONAL JOURNAL OF RESEARCH AND ANALYTICAL REVIEWS (IJRAR) | IJRAR.ORG

An International Open Access, Peer-reviewed, Refereed Journal

Impact of COVID-19 on Migrant Labourers in Unorganized Sector

Vivekananda Meta

Assistant Professor, Department of Economics

Rabindra Mahavidyalaya, Champadanga, Hooghly,

712401, West Bengal, India.

Abstract

COVID-19 is a newly discovered infective disease caused by corona virus and its infection has been increasing day by day. On the other hand migrant labourers have the great contribution to economic growth in country. In this paper, we would like to discuss some of the important issues regarding the effect of epidemics like COVID-19 on the migrant labourers in unorganized sector of Hooghly district. For this purpose we collected the primary data from 200 sample household. This study shows that the maximum migrant labourers have lost their job and its effect is powerful in decreasing the migrant labourer's income. It also shows that the reverse migration will create excess pressure on the agriculture in rural economy resulting poverty in a significant number of people.

Key Words: COVID-19, migrant labourers, agriculture, rural household, West Bengal

I. Introduction

Coronavirus disease 2019, also called COVID-19 has been declared a pandemic by the World Health Organization (WHO) on March 11, 20120. The main symptoms of this disease are fever, cough and breathing trouble. These are usually expressed within 2-14 days. This new virus and disease had been unknown before the outbreak began in Wuhan, China, in December 2019. The first case in India was identified on January 30, 2020 in Kerala. More cases started coming to light in the country from March onwards and as on12th July the total number of reported cases were 879466 and still increasing too rapidly.

In West Bengal its first confirmed case was on March17, 2020 in Kolkata. As on July 12, 2020, a total of 617079 samples have been tested in the state, of which 30013 are confirmed, 18581 people were cured and discharged. The state has also seen 932 deaths till date due to the pandemic.

সুকুমার রায়ের 'আবোল-তাবোল': শতবর্ষে ফিরে দেখা

পীরুপদ মালিক
সহযোগী অধ্যাপক, বাংলা বিভাগ
রবীন্দ্র মহাবিদ্যালয়, চাঁপাডাঙা, হুগলি, পশ্চিমবঙ্গ

সারসংক্ষেপ: সুকুমার রায় সাহিত্যের বিভিন্ন ক্ষেত্রে যে সাফল্য লাভ করেছেন তার মধ্যে উল্লেখযোগ্য ছড়া। এই ছড়া থেকে কবিতা হয়ে ওঠা বা ছড়া-কবিতার গ্রন্থ 'আবোল তাবোল'। গ্রন্থটি প্রকাশিত হয় আজ থেকে প্রায় একশ' বছর আগে অর্থাৎ ১৯২৩ খ্রিস্টাব্দে। সুকুমার রায় যতই স্বীকারোক্তি করুন যে, আবোল তাবোল ছোটোদের জন্য লেখা বই বাস্তবে তা কিন্তু নয়, এর অনেক কবিতায় ক্রান্তদর্শী সুকুমারের পরিচয় পাওয়া যায়। পাশ্চাত্য সাহিত্যে লুইস ক্যারল, এডওয়ার্ড লিয়ার যে অদ্ভুত জগৎ গড়ে তুলেছিলেন, আমাদের দেশে সুকুমার রায় সেই জগতের প্রথম এবং সার্থক প্রতিভূ। 'আবোল তাবোল' এর প্রায় প্রত্যেকটা ছড়া আমাদের মুখস্থ। কিন্তু বড়ো হয়ে যখন ফিরে পড়ার চেষ্টা করি তখন 'আবোল তাবোল' আমাদের চোখের সামনে এক অন্য জগৎ খুলে দেয়। সমগ্র আবোল তাবোল জুড়েই আছে লেখকের হাল্কা কথার আড়ালে গভীর কথা বলার এক নিজস্ব প্রকাশ-রীতি, যা আমরা অনুক্ষণ পর্যবেক্ষণ করতে পারি। আসলে এই আপাত আজগুবি ও অসম্ভব কল্পনা তাঁর সাহিত্যে নির্মোকের ভূমিকা পালন করেছে।

সূচক শব্দ : সুকুমার রায়, আবোল তাবোল, খেয়াল রস, উদ্ভট জগত, ননসেন্স।

বাংলা শিশু-কিশোর সাহিত্যে তিন পুরুষ ধরে রাজত্ব করেছেন রায়চৌধুরী পরিবার যা পরে রায় পরিবার নামে খ্যাত। এই পরিবারে দ্বিতীয় পুরুষ হিসেবে জন্মগ্রহণ করেন সুকুমার রায় ৩০ শে অক্টোবর, ১৮৮৭ খ্রিস্টাব্দে মধ্য-কলকাতার ১৩ নং কর্নওয়ালিস স্ট্রিটে। পিতা উপেন্দ্রকিশোর রায়চৌধুরী, মাতা বিধুমুখী দেবী। এই পরিবারে প্রথম থেকেই প্রতিভার অভাব ছিল না। উপেন্দ্রকিশোরের সতীর্থ প্রমদাচরণ সেন প্রথম সার্থক শিশু-পত্রিকা 'সখা'(১৮৮৩) প্রকাশ করেন। এই পত্রিকাতেই উপেন্দ্রকিশোরের সাহিত্যচর্চার হাতেখড়ি হয়। তারপর বিভিন্ন পত্র-পত্রিকাতে নিয়মিত লিখতেন। তবে পেশা হিসেবে তিনি ফটোগ্রাফি চর্চা আরম্ভ করেন। তাঁর তোলা কয়েকটি ফটোগ্রাফ সেকালে যথেষ্ট খ্যাতি অর্জন করেছিল। পরে বিদেশ থেকে 'হাফটোন' ও লাইন ব্লকে ছাপার যন্ত্রপাতি আনিয়ে তিনি প্রতিষ্ঠা করেন 'ইউ. রায় অ্যান্ড সন্স'। এই প্রতিষ্ঠান থেকেই প্রকাশিত হয় শিশু-কিশোরদের উপযোগী পত্রিকা 'সন্দেশ' যা বাংলা শিশু সাহিত্যের জগতে এক মাইল ফলক। এ হেন পরিবারেই উপেন্দ্রকিশোরের দ্বিতীয় সন্তানরূপে জন্মগ্রহণ করেন সুকুমার রায়। ক্রমশ পারিবারিক শিল্প-সংস্কৃতির ঐতিহ্যে ধীরে ধীরে বেড়ে ওঠেন। সাকুমার রায়ের বাল্যশিক্ষা শুরু হয়েছিল 'ব্রাহ্মবালিকা

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শামসুর রাহমানের কবি-চেতনার গভীরে ভাষাপ্রেম ও স্বদেশপ্রেম: ‘বর্ণমালা, আমার দুঃখিনী বর্ণমালা’ এবং ‘জন্মভূমিকেই’

পীরুপদ মালিক
সহযোগী অধ্যাপক, বাংলা বিভাগ, রবীন্দ্র মহাবিদ্যালয়, চাঁপাডাঙা, হুগলি, পশ্চিমবঙ্গ, ভারত

Absti•act

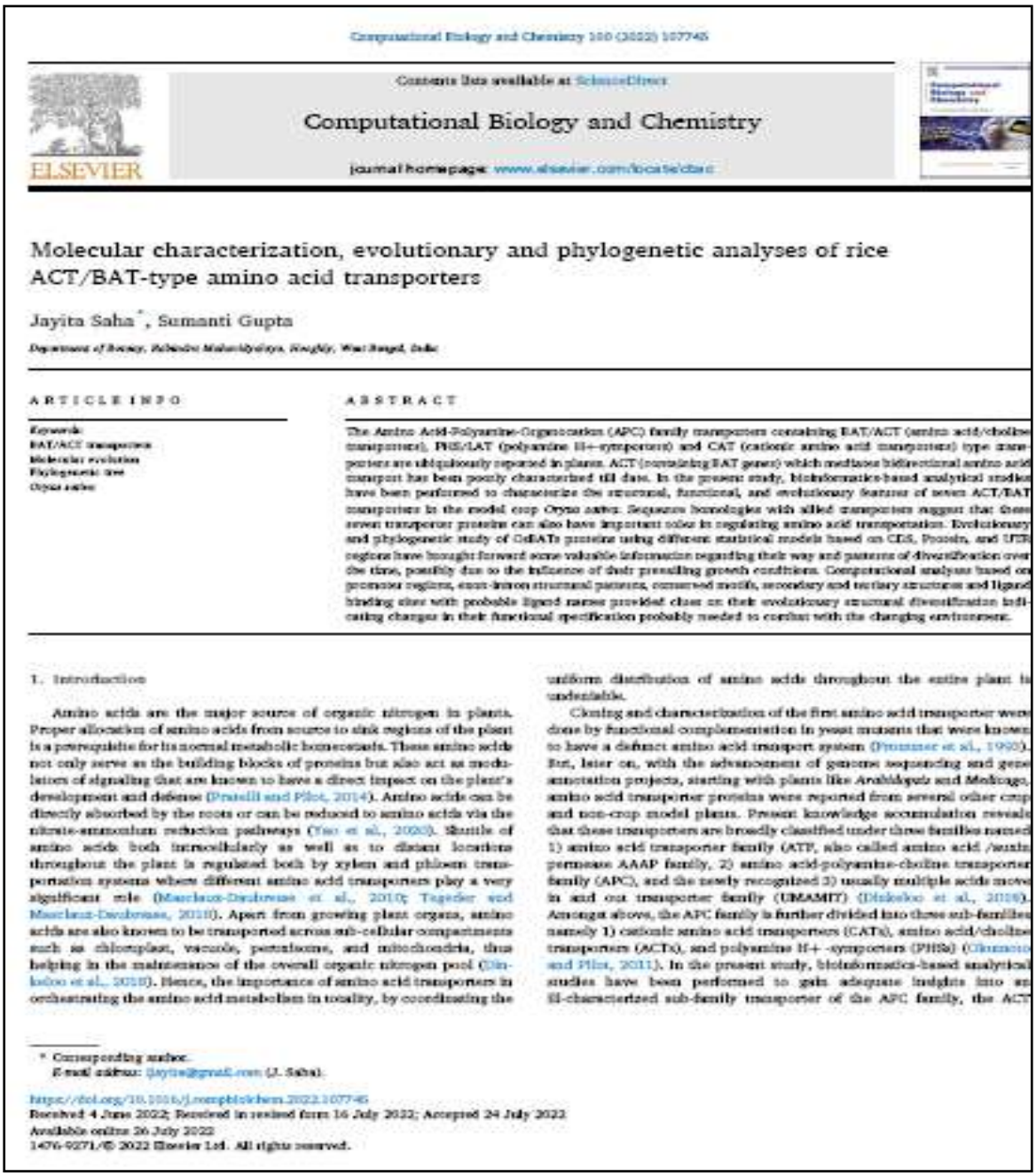
Sfinntsui• *Raliittaii(1929-2006) is one of llie leading figures of mod:fern Bengali Peels Bangladesh. In tlte secoitd half of the twentieth century, 5h amsur Rahman is i establislted as a gi eat, popular poet in both Bangladesh and West Bengal. Not o Bengal, lie carried great admii ation amoiig the lovers of Bengali poetry all over the Two widely popular OHfiiS of Sliawsur Jaminan are 'Barnamala, Amar Due Barnaniala and 'Jaitmabliuitiikei that deal with the freedom movement ofBangladesj believed that* i/ie *role of a poet is closely related to the cultural progress of a nation can note the celebratory representations of generous, humane attitude and romantic rp N* ***lits works.*** f7ie *post emergency incidents left a deep impression on his mind. As a r* /fie *tedious urban lfe has been depicted in some of his poems. His patriotic and n a t i o n identity is undoubtedly inseparable from his personality. Each and every person loves! mother tongue. Shanisur Rahman is no exception. His mother tongue is Bengali of reigns in his mind for ever. Deep love for his mother tongue is well-expressed in* they:a *'Bariianiala, Amar Duhkliini Bariiamala'. All the fifty one letters of Bengali* alpha *always glitter in ltis heart like stars. The poem 'Janmabhumikei deals with the* pain *modern life, the fediousness anJ monotony of urban life and at the same time romantic love for ltte old days and an intense love for his motherland Bangladesh have been r e f i l l* ***vivo:fly*** iii *ltte poem. In the long run, lhiz' poem has become a great patriotic poem. Inb* ***of his poems discussed in this essay,*** *ltte poet lms niaJe a smooth journey from his la!, mother tongue towards love for his country.*

Keywords: ***Shamsur Rahman, Bangladesh, Pain of life, Mother tongue, Patriotis Romanticism***

॥ ১ ॥

পঞ্চাশের দশকের সবচেয়ে শক্তিশালী কবি শামসুর রাহমান। এই সময়ের কবিরা সার্বিকভাবে আত্মনি উপলব্ধির চেতনার গহনে নিমগ্ন ছিলেন না। আত্মগত রোম্যান্টিক অনুভূতির বহু বিচিত্র ঘটনা ঘটে থাকে অনেক রোম্যান্টিক কবিই সেই সময়ে তাঁর চারিদিকের জীবনযাত্রার ঘটনাবলী সম্পর্কে সচেতন থাকতে

Dr. Jayita Saha, 2022-23



Computational Biology and Chemistry 100 (2022) 107745

Contents lists available at ScienceDirect

Computational Biology and Chemistry

journal homepage: www.elsevier.com/locate/cbac

Molecular characterization, evolutionary and phylogenetic analyses of rice ACT/BAT-type amino acid transporters

Jayita Saha*, Sumanti Gupta

Department of Botany, Bidhannagar Mahavidyalaya, Hooghly, West Bengal, India

ARTICLE INFO

Keywords:
BAT/ACT transporters
Molecular evolution
Phylogenetic tree
Oryza sativa

ABSTRACT

The Amino Acid-Polyamine-Organocation (APC) family transporters containing BAT/ACT (amino acid/choline transporters), PHS/LAT (polyamine H+-symporters) and CAT (cationic amino acid transporters) type transporters are ubiquitously reported in plants. ACT (containing BAT genes) which mediates bidirectional amino acid transport has been poorly characterized till date. In the present study, bioinformatics-based analytical studies have been performed to characterize the structural, functional, and evolutionary features of seven ACT/BAT transporters in the model crop *Oryza sativa*. Sequence homologies with allied transporters suggest that these seven transporter proteins can also have important roles in regulating amino acid transportation. Evolutionary and phylogenetic study of OsBATs proteins using different statistical models based on CDS, Protein, and UTR regions have brought forward some valuable information regarding their way and patterns of diversification over the time, possibly due to the influence of their prevailing growth conditions. Computational analyses based on promoter regions, exon-intron structural patterns, conserved motifs, secondary and tertiary structures and ligand binding sites with probable ligand names provided clues on their evolutionary structural diversification indicating changes in their functional specification probably needed to combat with the changing environment.

1. Introduction

Amino acids are the major source of organic nitrogen in plants. Proper allocation of amino acids from source to sink regions of the plant is a prerequisite for its normal metabolic homeostasis. These amino acids not only serve as the building blocks of proteins but also act as mediators of signaling that are known to have a direct impact on the plant's development and defense (Pratelli and Pilot, 2014). Amino acids can be directly absorbed by the roots or can be reduced to amino acids via the nitrate-ammonium reduction pathways (Yao et al., 2020). Shuttle of amino acids both intracellularly as well as to distant locations throughout the plant is regulated both by xylem and phloem transportation systems where different amino acid transporters play a very significant role (Masclaux-Daubresse et al., 2010; Tegeder and Masclaux-Daubresse, 2018). Apart from growing plant organs, amino acids are also known to be transported across sub-cellular compartments such as chloroplast, vacuole, peroxisome, and mitochondria, thus helping in the maintenance of the overall organic nitrogen pool (Dinkeloo et al., 2018). Hence, the importance of amino acid transporters in orchestrating the amino acid metabolism in totality, by coordinating the uniform distribution of amino acids throughout the entire plant is undeniable.

Cloning and characterization of the first amino acid transporter were done by functional complementation in yeast mutants that were known to have a defunct amino acid transport system (Frommer et al., 1993). But, later on, with the advancement of genome sequencing and gene annotation projects, starting with plants like *Arabidopsis* and *Medicago*, amino acid transporter proteins were reported from several other crop and non-crop model plants. Present knowledge accumulation reveals that these transporters are broadly classified under three families named 1) amino acid transporter family (ATF, also called amino acid /auxin permease AAAP family, 2) amino acid-polyamine-choline transporter family (APC), and the newly recognized 3) usually multiple acids move in and out transporter family (UMAMIT) (Dinkeloo et al., 2018). Amongst above, the APC family is further divided into three sub-families namely 1) cationic amino acid transporters (CATs), amino acid/choline transporters (ACTs), and polyamine H+ -symporters (PHSs) (Ghoumaid and Pilot, 2011). In the present study, bioinformatics-based analytical studies have been performed to gain adequate insights into an ill-characterized sub-family transporter of the APC family, the ACT

* Corresponding author.
E-mail address: jayita@gmail.com (J. Saha).

https://doi.org/10.1016/j.compbiolchem.2022.107745
Received 4 June 2022; Received in revised form 16 July 2022; Accepted 24 July 2022
Available online 26 July 2022

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Dr. Jayita Saha, 2022-23

CSIRO PUBLISHING

SPECIAL ISSUE | RESEARCH PAPER
https://doi.org/10.1071/FP22059

Functional Plant Biology

Phylogenetic, structural, functional characterisation and effect of exogenous spermidine on rice (*Oryza sativa*) HAK transporters under salt stress

Jayita Saha[A,B,*], Dwaipayan Chaudhuri[B], Anirban Kundu[C], Saswati Bhattacharya[D], Sudipta Roy[E] and Kalyan Giri[B,*]

For full list of author affiliations and declarations see end of paper

*Correspondence to:
Jayita Saha
Department of Botany, Rabindra Mahavidyalaya, Champadanga, Hooghly, West Bengal, India
Email: jjayita@gmail.com;
Kalyan Giri
Department of Life Sciences, Presidency University, 86/1 College Street, Kolkata 700073, West Bengal, India
Email: kalyan.dbs@presiuniv.ac.in

Handling Editor:
Suleyman Allakhverdiev

Received: 31 March 2022
Accepted: 26 July 2022
Published: 29 August 2022

Cite this:
Saha J et al. (2022)
Functional Plant Biology
doi:10.1071/FP22059

ABSTRACT

The HAK (High-affinity K^+) family members mediate K^+ transport that confers normal plant growth and resistance against unfavourable environmental conditions. Rice (*Oryza sativa* L.) HAK transporters have been extensively investigated for phylogenetic analyses with other plants species with very few of them functionally characterised. But very little information is known about their evolutionary aspects, overall structural, functional characterisation, and global expression pattern of the complete HAK family members in response to salt stress. In this study, 27 rice transporters were phylogenetically clustered with different dicot and monocot family members. Subsequently, the exon–intron structural patterns, conserved motif analyses, evolutionary divergence based different substitution matrix, orthologous-paralogous relationships were studied elaborately. Structural characterisations included a comparative study of secondary and tertiary structure, post-translational modifications, correspondence analyses, normal mode analyses, K^+/Na^+ binding affinities of each of the OsHAK gene members. Global expression profile under salt stress showed clade-specific expression pattern of the proteins. Additionally, five OsHAK genes were chosen for further expression analyses in root and shoot tissues of two rice varieties during short-term salinity in the presence and absence of exogenous spermidine. All the information can be used as first-hand data for dissecting the administrative role of rice HAK transporters under various abiotic stresses.

Keywords: HAK transporters, Indica rice, MEGA, normal mode analyses, phylogenetic tree, real-time PCR, salt stress, spermidine, synteny analyses.

Introduction

Potassium is an essential macronutrient that plants accumulate in huge quantities accounting for about 2–10% of their total dry weight (Cai *et al.* 2021). However, their cytosolic concentrations are kept at approx. 100 mM (20–200 mM in the vacuoles) (Sharma *et al.* 2013), providing an optimum environment for the functioning of enzymes. K^+ ions are involved in several fundamental biochemical processes that include enzyme activation, osmoregulation, protein synthesis, metabolism of carbohydrates, stomatal movement, and photosynthesis. (Hasanuzzaman *et al.* 2018; Cheng *et al.* 2018; Ou *et al.* 2018). Additionally, K^+ ions play a pivotal role in abiotic stress tolerance (Wang *et al.* 2013; Véry *et al.* 2014; Hasanuzzaman *et al.* 2018). In plants, the root absorbs K^+ ions against a concentration gradient (since soil K^+ concentration ranges from 0.1–1 mM) facilitated by K^+ transporters and channels (Wang and Wu 2013). While the K^+ channels demonstrate low-affinity transport operating in higher K^+ concentrations (>0.5 mM), the K^+ transporters are capable of functioning in much lower K^+ concentrations (<0.2 mM) (Cheng *et al.* 2018).

K^+ uptake by roots and its transport to different plant parts are mediated by various $[K^+]$ transporters. The plant K^+ transporters are quite conserved and can be broadly categorised in four basic types: (1) TrK/HKT1 family; (2) KT/HAK/KUP family (HAK family); (3) CHX

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Paritosh Chandra Sinha, 2022-23

Theoretical and Applied Economics
Volume XXIX (2022), No. 1(630), Spring, pp. 187-214

Attention economy and higher-order beliefs in voters' online attention searches

Paritosh Chandra SINHA
Rabindra Mahavidyalaya, Champadanga, W.B., India
paritoshchandrasinha@gmail.com

Abstract. *Presently we are living in an attention economy where individuals' attention-spectrum is becoming very basic to their social, political and economic decision choices. With the use of Google Trends search volume index (SVI) data, this study explores whether the voters' online attention searches around the context of the assembly election of West Bengal in 2021 show any higher-order beliefs or not. Methodologically, firstly, it has used the method of moments, then, followed both descriptive and inferential empirical analysis and finally, it has identified the cointegrating presence of voters' lower-order vis-à-vis higher-order beliefs in their online search-attention for a few selected socio-politico-economic keywords. The study offers a few policy implications of online attention searches at attention management by stakeholders.*

Keywords: higher-order beliefs, spatial dimension, behavioral economics, voters' attention.

JEL Classification: D72, D79.

Link to website of the Journal: https://www.ectap.ro/theoretical-and-applied-economics-number-1-2022/r146/

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Bikash Halder, 2022-23

A Perusal on Preservation and Conservation Techniques in the Government Aided College Libraries of Diamond Harbour and Alipore subdivision in South 24 Parganas

Bibhash Ram Singha
singhabibha84@gmail.com

Bikash Kumar Halder
Rabindra Mahavidyala, bkh.bikash@gmail.com

A Perusal on Preservation and Conservation Techniques in the Government Aided College Libraries of Diamond Harbour and Alipore subdivision in South 24 Parganas

Mr. Bibhash Ram Singha
Librarian
Malda Women's College, Malda
Mobile: 7980237598
Email: singhabibha84@gmail.com

Mr. Bikash Kumar Halder
Librarian
Rabindra Mahavidyalaya, Champadanga, Hooghly
Mobile: 8296352203
Email:bkh.bikash@gmail.com

Abstract: *The present study is exhibited the preservation and conservation techniques in the college libraries of Diamond Harbour and Alipore subdivisions in the district of South 24parganas. It is also discusses degradation problems of print and non-print materials, causes of deterioration of library documents, and different obstacles to using preservation techniques. To secure the library materials in a good manner need to apply the preservation and conservation techniques which includes cleaning and dusting, use of insecticides and insect repellent such as Thymol, Dichlorovos, Dursban, Naphthalene balls, Neem leaf etc., besides that there is a provision for security systems of the college libraries to secure the library materials, mutilation and defacing of paper-based materials and shelving library documents to allow for free flow of air. But binding, photocopying, and use of insecticide and insect repellent for preservation are used occasionally. Hence, the results indicate that the different college libraries are more or less need to preserve their library documents according to the existing preservation policy as well as new preservation policy, and also college authorities should provide sufficient funds and engage skilled laborers.*

Keywords: College libraries, Preservation, Conservation, Diamond Harbour Subdivision, Alipore Subdivision, South 24parganas.

Analyst

ROYAL SOCIETY OF CHEMISTRY

PAPER

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Cite this: *Analyst*, 2022, **147**, 471

Rhodamine 6G-based efficient chemosensor for trivalent metal ions (Al^{3+}, Cr^{3+} and Fe^{3+}) upon single excitation with applications in combinational logic circuits and memory devices†

Dipankar Das,[a] Rabiul Alam [a] and Mahammad Ali *[a,b]

A new rhodamine 6G-based chemosensor ($\mathbf{L^3}$) was synthesized and characterized by ^1H, ^{13}C, IR and mass spectroscopy studies. It exhibited an excellent selective and sensitive **CHEF**-based recognition of trivalent metal ions M^{3+} (M = Fe, Al and Cr) over mono and di-valent and other trivalent metal ions with prominent enhancement in the absorption and fluorescence intensity for Fe^{3+} (669-fold), Al^{3+} (653-fold) and Cr^{3+} (667-fold) upon the addition of 2.6 equivalent of these metal ions in the probe in H_2O/CH_3CN (7 : 3, v/v, pH 7.2). The corresponding K_d values were evaluated to be 1.94×10^{-5} (Fe^{3+}), 3.15×10^{-5} (Al^{3+}) and 2.26×10^{-5} M (Cr^{3+}). The quantum yields of $\mathbf{L^3}$, [$\mathbf{L^3}$–Fe^{3+}], [$\mathbf{L^3}$–Al^{3+}] and [$\mathbf{L^3}$–Cr^{3+}] complexes in H_2O/CH_3CN (7 : 3, v/v, pH 7.2) were found to be 0.0005, 0.335, 0.327 and 0.333, respectively, using rhodamine-6G as the standard. The LODs for Fe^{3+}, Al^{3+} and Cr^{3+} were determined by 3σ methods and found to be 2.57, 0.78 and 0.47 μM, respectively. The cyanide ion snatched Fe^{3+} from the [Fe^{3+}–$\mathbf{L^3}$] complex and quenched its fluorescence *via* its ring-closed spirolactam form. Advanced level molecular logic devices using different inputs (2 and 4 input) and a memory device were constructed.

Received 2nd October 2021,
Accepted 9th December 2021

DOI: 10.1039/d1an01788h

rsc.li/analyst

1. Introduction

Due to their biological and environmental importance, the selective and sensitive detection of transition metal ions through the design of suitable fluorescent chemosensors has attracted the deep attention of chemists and biologists.[1,2] The excess or deficiency of a metal ion in a living system can lead to several diseases. Although, chemosensors for single analyte detection are plentiful, chemosensors corresponding to multiple metal-ion detection have been less explored,[3] even though a number of trivalent metal ions, like Fe^{3+}, Al^{3+} and Cr^{3+}, are important both biologically and environmentally. As for example, Cr^{3+}, an essential trace element, displays a huge impact on the metabolism of carbohydrates, fats, proteins and nucleic acids through the activation of certain enzymes and by the stabilization of proteins and nucleic acids.[4,5] It also plays an important role in the maintenance of normal levels of glucose, triglycerides and total cholesterol.[6–11] While an overdose of Cr^{3+} inflicts a negative effect on normal enzymatic activities, and cellular structure and function, causing a disturbance in glucose levels and lipid metabolism, its deficiency would lead to a variety of diseases, including the risk of diabetes, cardiovascular diseases and nervous system disorders.[12]

The Cr^{3+} ion, present in the cytoplasm, can lead to mutation and cancer due to non-specific binding to DNA at elevated levels affecting the cellular structures and damaging the cellular components.[13] Moreover, Cr^{6+}, the oxidized form of Cr^{3+}, is extremely toxic and carcinogenic as it can easily penetrate cell membranes, causing cancers through the oxidation of DNA and some proteins.[14–17]

Aluminium (Al^{3+}), the third most prevalent element on Earth, is widely present in the Earth's crust and in most kind of animal and plant tissues and natural waters.[18–22] It has found wide applications in the food, textile and paper industries and also in the manufacture of household utensils. According to the World Health Organization (WHO), aluminium is a food pollutant and the WHO prescribed a safe Al concentration of 200 mg L^{-1} in drinking water.[23] It accumulates in various mammalian tissues, such as the brain, bone, liver and kidney,[24,25] where it causes renal failure,[26] which is associated with age.[27] Aluminium toxicity damages the central nervous system, resulting in neurodegenerative Alzheimer and Parkinson diseases.[28]

Among these trivalent metal ions, Fe^{3+} is an essential element in living organisms and plays a vital role in the life process of organisms[29] and in many biological activities of organisms, such as muscle contraction, nerve conduction and

[a]*Department of Chemistry, Jadavpur University, Kolkata 700 032, India. E-mail: mali2062@yahoo.com; Fax: +91-33-2414-6223*
[b]*Vice-Chancellor, Aliah University, IIA/27 New Town, Kolkata 700160, India*

†Electronic supplementary information (ESI) available. See DOI: 10.1039/d1an01788h

Bikash Halder, 2022-23

June 2022

A Study on UGC-CARE Journals of Library and Information Science

Partha Chattopadhyay Librarian
Hiralal Bhakat College, Nalhati, Birbhum, West Bengal, chattopadhyaypartha224@gmail.com

Bikash Kumar Halder Librarian
Rabindra Mahavidyalaya Champadanga, Hooghly, West Bengal, bkh.bikash@gmail.com

A Study on UGC-CARE Journals of Library and Information Science

Abstract: - The University Grants Commission has published the list of CARE journals of all disciplines such as Science, Social Science and Arts & Humanities. The subject Library & Information Science has also been included in the CARE list under Social Science stream. The study measures information statistically or mathematically. These CARE list of journals are analyzed from different perspectives by giving various tables highlighting different aspects of informetric measurement.

Key words: - UGC-CARE Journal, Social Science, Library & Information Science

Introduction: - The University Grants Commission to match global standards of high-quality research in all academic disciplines under its purview, announced the establishment of a dedicated Consortium for Academic and Research Ethics (CARE) by issuing a public notice on 28th November, 2018. The objectives of UGC- CARE are to promote quality research, academic integrity and publication ethics in Indian universities, to promote high quality publications in reputed journals that would help in achieving higher global rank, to develop an approach and methodology for identification of good quality journals to prevent publication in sub-standard journals to create and maintain "UGC- CARE Reference List of Quality Journals" for all academic purposes. There are various needs of UGC- CARE List. These are the credibility of research publications is extremely important because it represents the academic image of not just an individual but of the situation and the entire nation. The number of research articles published in reputed journals is one of the globally accepted indicators considered for various academic purposes such as institutional ranking, appointments, promotions of the faculty members, membership of academic communities, award of research degrees etc. The problem of sub-standard journals has become a cause of serious concern all over the world. The percentage of research articles published in poor quality journals is reported to be high, which has adversely affected its image. Publications in sub-standard journals reflect adversely leading to long-term academic damage of individual, institution and the nation. The scope of the UGC-CARE List is manifold. They are:

UGC-CARE has taken the responsibility of preparing "UGC-CARE Reference List of Quality Journals" (UGC- CARE List)

A list of Indian journals, especially from disciplines of Arts, Humanities, Languages, Culture and Indian Knowledge Systems is being prepared and updated quarterly (UGC CARE Group I).

UGC- CARE List includes journals from all disciplines indexed in globally accepted databases, as indexed in Scopus (Source List) or Web of Science (Arts and Humanities Citation Index

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Volume 9 Issue 3 August 2022, Date of Publication: 15-August-2022

PAPER ID : IJRAR22C2046

Registration ID : 252300

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Bikash Halder, 2022-23

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Eureka Mondal, 2021-22

https://doi.org/10.33307/entomon.v47i4.792
ENTOMON 47(4): 391-396 (2022)
Article No. ent. 47405

Relative efficacy of selected insecticides to check rice yellow stem borer *Scirpophaga incertulas* (Walker) (Lepidoptera, Crambidae) at Hooghly, West Bengal, India

Eureka Mondal* and Kaushik Chakraborty

Department of Zoology, Raiganj University, Raiganj 733134, Uttar Dinajpur, West Bengal, India.
Email: eurekazoology10@gmail.com

ABSTRACT: Rice yellow stem borer (YSB), *Scirpophaga incertulas* Walker is one of the major destructive insect pests rendering huge crop damage. Nine insecticide formulations, either solely or in combinations were applied in the rice (*var. Lalat*) field for two consecutive seasons during 2019-2021 to assess their efficacy to suppress YSB population and to stabilize yield. The combination of flubendiamide (480 SC) @80 g a.s.ha^{-1} on 45 DAT and deltamethrin (1%) + triazophos (35%) @300 g a.i.ha^{-1} on 80 DAT, treated the rice crop, recorded minimum YSB incidence (4.14 egg clutches, 4.78 larvae and adults 3.17/5 hills) and damage (2.12% dead hearts (DH) and 1.47 white ear (WE). This treatment gave significantly higher grain yield (3.63 t ha^{-1}), an increase of 45.78 per cent over control. The incidence (12.21 egg clutches, 14.12 larvae and adults 11.76/5 hills) and crop damage (14.83 DH and 11.10% WE) was maximum in the treatment, neem seed kernel extract (5%) @50 ml L^{-1} at 15- day intervals after transplanting and neem leaf extract (5%) @7 ml a.s. L^{-1} on 35, 50, 65 and 80 DAT, resulting in minimum yield (2.88 t ha^{-1}). Other combinations of insecticide application gave variable results.

KEY WORDS: Grain, yield, damage, population, flubendiamide, deltamethrin, triazophos

INTRODUCTION

Rice (*Oryza sativa* L.) is the most important cereal crop and primary energy source for two third of the world's population (Khan *et al.*, 2015). India ranks first in area of cultivation and second in rice production in the world (DES, Govt. of India, 2016). Annually, about 30 per cent pre-harvest crop loss was noted in India (FAO, 2018). Out of that, insect pests cause, in average, 25-41 per cent rice crop damage, globally (Savary *et al.*, 2019). Rice yellow stem borer (YSB), *Scirpophaga incertulas* Walker is the most dominating and destructive insect pest that ravages the rice field globally. To check insect pest induced crop damage, Indian farmers apply insecticides of different newer brands in high quantum without any concern to the environment and also to the farmer's health (Horrigan *et al.*, 2002). Under modern IPM practice, the best way to reduce pesticide 'tread-mill' is to rely on phyto-formulation based pest control methods (Watts, 2010). Relative efficacy of nine selected insecticide formulations was evaluated against YSB.

MATERIALS AND METHODS

The experiment was carried out at paddy field area of Tarakeswar, Hooghly (22.8958° N; 88.0159°E) in two consecutive *kharif* seasons during 2019-2021. The rice cultivar *Lalat* (IET-9947), a most widely grown popular rice variety was used for the experiment. Parentage of this cultivar were

* Author for correspondence

International Journal of All Research Education and Scientific Methods (IJARESM), ISSN: 2455-6211
Volume 9, Issue 11, November-2021, Impact Factor: 7.429, Available online at: www.ijaresm.com

Lifelong Education

Haripada Dhara

Assistant Professor of Education, Rabindra Mahavidyalaya Champadanga, Hooghly West Bengal, India

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ABSTRACT

Education is processes, events, activities and conditions those assist and encourage learning. Education may be planned or random but it helps in learning. Lifelong education can be provided through informal, formal and non-formal education processes. Hence, lifelong education can be defined as a process of both deliberate and unintentional opportunities influencing learning throughout one's life span. Dimensions of lifelong education have also been detailed along with its goals. Pre-requisites of lifelong education, concept of integration, flexibility and diversity and lifelong education as a master concept are also given due consideration.

Keywords: Education, Learning, Lifelong Education.

INTRODUCTION

Education is processes, events, activities and conditions those assist and encourage learning. Education may be planned or random but it helps in learning. Thus education is a service. Lifelong education requires that someone i.e. government or other agencies who develop policies and devote resources to education; these cover a broad array of informal, non-formal and formal settings where deliberate choices are made.

What is life?
Life is the condition that distinguishes animals and plants from inorganic matter, including the capacity for growth, reproduction, functional activity, and continual change preceding death.

Similar: 1.existence, 2.being, 3.living, 4.animation.

Wikipedia: **Life** is a characteristic that distinguishes physical entities that have biological processes, such as signaling and self-sustaining processes, from those that do not, either because such functions have ceased (they have died), or because they never had such functions and are classified as inanimate. Various forms of life exist, such as plants, animals, fungi, protists, archaea, and bacteria. Biology is the science that studies life.

What is long?
Long means-
1: for or during a long time- *long* a popular hangout
2: at or to a long distance: FAR*long*-traveled
3: for the duration of a specified period month-*long* all summer *long*
4: at a point of time far before or after a specified moment or event -was excited *long* before the big day
5: after or beyond a specified or implied time-didn't stay *longer* than midnight
6: for a considerable distance- threw the ball *long*
7: in or into a long position (as on a market)

© 2022 IJRAR March 2022, Volume 9, Issue 1 www.ijrar.org (E-ISSN 2348-1269, P- ISSN 2349-5138)

IJRAR.ORG E-ISSN: 2348-1269, P-ISSN: 2349-5138

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Artificial intelligence and social development of India.

HARIPADA DHARA

RABINDRA MAHAVIDYALA
Champadanga, Hooghly
West Bengal, India

Abstract:
Artificial Intelligence is **an approach to make a computer, a robot, or a product to think how smart human think**. AI is a study of how human brain think, learn, decide and work, when it tries to solve problems. And finally this study outputs intelligent software systems. Artificial intelligence is already impacting our lives in a major way. Be it getting driving instructions through our smartphone or getting daily reminders by our fitness device to increase our workouts, all these are manifestations of how artificial intelligence is changing the way we function. What is often less understood is the significant role artificial intelligence can play in the social sector.

Keywords: Artificial intelligence, social development, India.

Introduction:
Artificial intelligence (AI) is intelligence demonstrated by machines, as opposed to **natural intelligence** displayed by animals including humans. Leading AI textbooks define the field as the study of "intelligent agents": any system that perceives its environment and takes actions that maximize its chance of achieving its goals.
AI can help farmers analyse a variety of factors, such as temperature, weather conditions, soil conditions, and water usage, in real-time. It can be used to optimize planning and generate a more bountiful yield by determining the best crop choices and the most optimal way to utilize resources. AI has been effectively deployed to detect crop damage with the help of low-attitude sensors, from drones to smartphones, to improve the crop yield of small farms.
Artificial intelligence is already impacting our lives in a major way. Be it getting driving instructions through our smartphone or getting daily reminders by our fitness device to increase our workouts, all these are manifestations of how artificial intelligence is changing the way we function. What is often less understood is the significant role artificial intelligence can play in the social sector.

What is Artificial?
Artificial means-
1. made or produced by human beings rather than occurring naturally, especially as a copy of something natural.
"her skin glowed in the artificial light"
2. (of a person or their behaviour) insincere or affected.
"she gave an artificial smile"

Artificiality (the state of being **artificial** or **manmade**) is the state of being the product of intentional human manufacture, rather than occurring naturally through processes not involving or requiring human activity. Wikipedia

What is intelligence?
Intelligence has been defined in many ways: the capacity for abstraction, logic, understanding, self-awareness, learning, emotional knowledge, reasoning, planning, creativity, critical thinking, and problem-solving. More generally, it can be described as the ability to perceive or infer information, and to retain it as knowledge to be applied towards

Haripada Dhara, 2012-22

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Education system in new Indian Society

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Author Name : Haripada Dhara

ABSTRACT

Knowledge is Power". There is no doubt in the fact that 21st century is going to be a knowledge century, and economic development and human resources development are closely linked together. India being the nation of young people, is full of aspirations and has lot to achieve in the era of knowledge. Indian government has realised that education plays an indispensible role in the empowerment of people social or economic. Earlier higher education used to be seen as a luxury, which was available to few only, but now it is proved that it contributes effectively in national, social and economic development. The presence of quality institutes of learning is seen as a sigh of development of the society. While basic level education makes the person literate, higher education makes him stand out, makes him realises his true potential.The world has realized that the economic success of the states is directly determined by their education systems. Education is a Nation's Strength. A developed nation is inevitably an educated nation. Indian higher education system is the third largest in the world, next to the United States and China. Since independence, India as a developing nation is contentiously progressing in the education field. Although there have been lot of challenges to higher education system of India but equally have lot of opportunities to overcome these challenges and to make higher education system much better.*This education system profile provides an in-depth overview of the structure of India's education system, its academic institutions, quality assurance mechanisms, and grading practices, as well as trends in outbound and inbound student mobility. To place current education reforms and mobility trends into context, we will first provide an overview of current socioeconomic developments in India and introduce some key facts about the country, before we outline mobility patterns and the education system.*

Keywords: Education, Growth and Development, Indian society.

Haripada Dhara, 2012-22

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Human Resource Management

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Human Resource Management

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Author Name : Haripada Dhara

ABSTRACT

Human resource management (HRM or HR) is the strategic approach to the effective and efficient management of people in a company or organization such that they help their business gain a competitive advantage. It is designed to maximize employee performance in service of an employer's strategic objectives. Human resource management is primarily concerned with the management of people within organizations, focusing on policies and systems. HR departments are responsible for overseeing employee-benefits design, employee recruitment, training and development, performance appraisal, and reward management, such as managing pay and employee-benefits systems. HR also concerns itself with organizational change and industrial relations, or the balancing of organizational practices with requirements arising from collective bargaining and governmental laws. Human Resources Management also deal with the facilities and requirements the Human Workforce are availing and need for their working process and carrier growth. It used to act as a bidirectional process flow which increase the "Workforce" and "Senior Management" and collaborate everybody's requirements in a solution space and help to provide a better and value added service or outcome to customer or client of the organization. Human resource management (HRM), the management of work and people towards desired ends, is a fundamental activity in any organization in which human beings are employed. It is not something whose existence needs to be elaborately justified: HRM is an inevitable consequence of starting and growing an organization.

Keywords: human resource, management, policy.

Joydip Ghosh, 2021-22

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Acta Parasitol. 2021 Dec;66(4):1480-1489. doi: 10.1007/s11686-021-00416-1. Epub 2021 Jun 2.

Potential Anti-leishmanial Activity of a Semi-purified Fraction Isolated from the Leaves of Parthenium hysterophorus

Joydip Ghosh [# 1], Sondipon Chakraborty [# 1], Somaditya Dey [1 2], Debarati Mukherjee [1], Biswajyoti Sarkar [1], Suvadip Mallick [1], Aritri Dutta [1], Tanmoy Dutta [3], Soumen Bhattacharjee [3], Narayan Ghorai [4], Chiranjib Pal [5]

Affiliations + expand

PMID: 34076820 DOI: 10.1007/s11686-021-00416-1

Abstract

Purpose: In the present perspective, emergence of resistant strains of Leishmania donovani and severe side effects resulting from the use of conventional anti-leishmanial therapies present an urgent need for developing novel agents against this parasite. We have explored the effectiveness of secondary plant metabolites as alternative choices in the treatment for visceral leishmaniasis (vl).

Methods: The plant Parthenium hysterophorus L. (Asteraceae) was collected from the West Bengal

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Abstract

Journal of Entomology and Zoology Studies 2022; 10(5): 301-310

Journal of Entomology and Zoology Studies

Available online at www.entomoljournal.com

E-ISSN: 2320-7078
P-ISSN: 2349-6800
www.entomoljournal.com
JEZS 2022; 10(5): 301-310

Received: 26-07-2022
Accepted: 28-08-2022

Souren Dutta
Rabindra Mahavidyalaya, Department of Zoology, Champadanga, Hooghly, West Bengal, India

Nayan Roy
Assistant Professor, Ecology Research Unit, M.U.C. Women's College, Department of Zoology, Burdwan, West Bengal, India

Corresponding Author:
Nayan Roy
Assistant Professor, Ecology Research Unit, M.U.C. Women's College, Department of Zoology, Burdwan, West Bengal, India

Review on bionomics and management of rice stem borer

Souren Dutta and Nayan Roy

DOI: https://doi.org/10.22271/j.ento.2022.v10.i5d.9071

Abstract
Rice (*Oryza sativa* L.) is used as staple food for the overwhelming majority of the world's population. Rice production hampered mostly by stem borers like, yellow stem borer (*Scirpophaga incertulas*) pink stem borer (*Sesamia inference*), dark headed stem borer (*Chilo polychrysus*), stripped stem borer (*Chilo suppressalis*). For minimize the infestation farmers use different resistant rice cultivars like, TKM 6, PTB 10, Su Yai 20, Mudgo, DV 139, Taitung 16, Gontra Bidhan 3, MTU-2020, IR 50, NDR-97, etc. against stem borer population. For controlling deleterious pest population farmers mostly use insecticide which exhibit good results than any botanicals against rice pests. Other techniques including using microbial pesticides, other biocontrol agents, use of pheromones or allomones, staggered planting, synchronized planting, removal of infected leaves, steams with pruning shears, using of trap crop, etc. are effective for control rice pests. But indiscriminate use of chemical insecticides results in great economic loss with destabilizing of biodiversity and resulting cross resistance against insecticides. So, pest population ecology based sustainable management strategies of such pest species is very essential for climate smart pest management (CSPM) as well as climate smart agriculture (CSA) of rice and other crops in the near future.

Keywords: *Oryza sativa*, stem borer, sustainable management strategies, CSPM, CAS

1. Introduction

Rice (*Oryza sativa* L., Gramineae or Poaceae, 2n=24.) is used as staple food for the overwhelming majority of the world's population (Adhikari *et al.*, 2012) [5]. About 90% of rice in the world is grown and consumed by the population of the Asian countries (Samanta *et al.*, 2014) [80]. Rice accounts for nearly 42.5% of total food grain production in India (Arora *et al.*, 2019; Dutta and Roy, 2016; Ghule *et al.*, 2008) [9, 38, 43]. In West Bengal presently the crop is grown in 59.35 lakh hectare areas with a production of 150.37 lakh tonnes (Chattopadhyay *et al.*, 2008) [23]. Nearly 63% of total irrigated area of West Bengal yields approximately 15.48% of India's rice production (Dey *et al.*, 2005) [36]. Plains of West Bengal offer diversified agro-ecological conditions for cultivation of about 124 cultivars of rice (Adhikari *et al.*, 2012) [5]. In West Bengal, rice is grown in three different cropping seasons such as Aus (autumn rice), Aman (winter rice) and Boro (summer rice). Among them rate production during Aman (winter rice) crop season, is relatively high, followed by Boro (summer rice) and Aus (autumn rice) crop season (Sinha and Mishra, 2013) [91]. In fact, insect pests are among the most important biological constraints limiting rice yield potential and reflect large scale reduction both in quality and quantity throughout the world (Adhikari *et al.*, 2012; Arora *et al.*, 2019; Baharally and Simon, 2014; Banerjee *et al.*, 2018) [5, 9, 12, 14]. Rice production in West Bengal hampered by many biotic stresses mostly by rice insect pests like stem borer (yellow stem borer, *Scirpophaga incertulas*, pink stem borer, *Sesamia inference*, dark headed stem borer, *Chilo polychrysus*, stripped stem borer, *Chilo suppressalis*), leaf folder (*Cnaphalocrocis medinalis*), plant hoppers (*Nilaparvata lugens*, *Sogatella furcifera*), leaf hopper (*Nephotettix virescens*, *N. nigropictus*), rice hispa (*Dicladispa armigera*), rice bug (*Leptocorisa acuta*, *L. oratorius*), gall midge (*Orseolia oryzae*), etc. which cause about 9.5% of total production loss either caused directly during different stages of life stages or by indirectly transmitting different viruses (Dhaliwal *et al.*, 2010; Dutta and Roy, 2016; Rajesh *et al.*, 2018; Sarkar *et al.*, 2016) [37, 38, 75, 83].

বারাকপুরের সমাজ-চিত্র
(১৭৭৫-১৮২৪ খ্রি.)

অভিজিৎ বাগ

বর্তমান উত্তর-চব্বিশ পরগণা জেলার অন্তর্গত একটি ছোট শহর বারাকপুর। ১৭৭২ খ্রিষ্টাব্দে[১] (মতান্তরে ১৭৭৫ খ্রিস্টাব্দ[২]) এই শহরে ইংরেজ ইস্ট-ইন্ডিয়া কোম্পানি কর্তৃক সেনানিবাস প্রতিষ্ঠাকে কেন্দ্র করে এখানে কলকাতা থেকে ইউরোপীয় সেনা ও অফিসারদের আনাগোনা শুরু হয়েছিল। গঙ্গার নিকটবর্তী অবস্থান, মনোরম প্রকৃতিক দৃশ্যপট ইত্যাদি খুব সহজেই এই শহরের প্রতি তাঁদের হৃদয়কে আকৃষ্ট করেছিল। তাই এর সঙ্গেই এখানে মিশনারীদের আগমন খুব আশ্চর্যের কিছু ছিল না। গভর্নর জেনারেল লর্ড ওয়েলেসলি (১৭৯৮-১৮০৫ খ্রিস্টাব্দ) এই বারাকপুর শহরকে এত পছন্দ করতেন যে, তিনি এখানে কলিকাতার মতই উন্নয়নমূলক কাজকর্ম করতে শুরু করেছিলেন। চিড়িয়াখানা স্থাপন এই শহরের গুরুত্ব বৃদ্ধি করেছিল। কলিকাতাস্থিত ইউরোপীয়দের কাছে বারাকপুর শহর ছিল সপ্তাহান্তে অবসরযাপনের এক অতি পছন্দের গন্তব্য। যাইহোক উক্ত প্রবন্ধে অষ্টাদশ শতকের শেষলগ্ন থেকে ঊনবিংশ শতকের বিশের দশকে সংঘটিত সিপাহী বিদ্রোহ (১৮২৪ খ্রিস্টাব্দ) পর্যন্ত বারাকপুর সেনানিবাস অঞ্চলের শিক্ষা, স্বাস্থ্য ও ধর্মের একটি সংক্ষিপ্ত ইতিহাস লিপিবদ্ধ করার আন্তরিক প্রয়াস নেওয়া হয়েছে। আজ থেকে প্রায় ২০০ বছর আগেকার তৎকালীন কলিকাতা সংলগ্ন একটি ছোট জনপদ বারাকপুরের একটি সামাজিক-চিত্র অঙ্কন এর মুখ্য উদ্দেশ্য। কোম্পানির আমলে বারাকপুরে তৎকালীন স্কুলের বাচ্চাদের শিক্ষা, মহামারী কলেরার করাল গ্রাস (১৮১৭-২১ খ্রিস্টাব্দ) আর খ্রিস্টীয় চার্চ প্রভৃতি বিষয়ে আলোকপাত করা হয়েছে এই প্রবন্ধে।

একটি প্রচলিত বাক্য বা প্রবচন হল— ব্রিটিশ সাম্রাজ্যর সূর্য কখনও অস্ত যায় না। একসময় পৃথিবীর প্রায় সমগ্র মহাদেশেই ব্রিটিশ সাম্রাজ্যর বিস্তারনীতির প্রতিফলন হিসেবে ব্রিটিশ উপনিবেশ স্থাপিত হয়েছিল। এই কলোনি বা উপনিবেশগুলির মাধ্যমে ওইসব বিজিত দেশগুলিতে ইংল্যান্ডের খ্রিস্টান ধর্মের প্রচারকরা ধর্ম প্রচার ও বিস্তারের কাজ করতেন। ফলে এই সব কলোনিগুলিতে খ্রিস্টান ধর্মের প্রচারের সাথে সাথে ইংল্যান্ডের গৌরবময় সংস্কৃতি ও ভাবধারার অনুপ্রবেশ ঘটেছিল। আর এই সংস্কৃতি ও উদার গণতান্ত্রিক ভাবধারার অন্যতম সহায় ছিল অবশ্যই ইংরেজি

Abhijit Bag, 2021-22

Power of Knowledge Peer Review Journal, Volume 1, Issue:II July to Sept. 2021 ISSN 2320-4494 Impact factor 3.7286

Chakma;a glimpse of miserable life

Abhijit Bag
Assistant Professor, Department of History,
Rabindra Mahavidyalaya, Champadanga, Hooghly, West Bengal.

'Chakma' is an aboriginal, marginalized group of people who had lived at the North-Eastern part of undivided India. A Chakma people calls themselves 'Sawngma' or 'Chawngma'[1] though British scholars pronounced themselves as 'Chakma' or 'Chukma'. They are known as 'Jumma people' locally. This group was known as 'Tsak - Thek' in Burma.[2] Chakmas are usually old inhabitants of Chittagong Hill Tracts (now Bangladesh). The CHT is at the southern part of Bangladesh now. There are three districts namely Chittagong hill region, Banderban and Khagrachari formed CHT. There are many small tribes but Chakma and Merma have majority among them. Once Chittagong (old Saptagram) was ruled by European powers with regard to trade & commerce and at last it was dominated by Mughals and then British East India company occupied this CHT region. Mir Khan, the governor of Bengal handed over the Chittagong to the British East India Company in 1760 AD. A treaty had been formulated between them and therefore company held the western part of the Nijampur road of Chittagong (Dhaka Trunk Road) and the rest was given to the Chakma king Siyar Mast Khan. This place was declared under Chakma Territorial jurisdiction by the company in 1763. But there was a sharp conflict found between Chakmas and company for the rate of tax that was collected from Chakmas by the company. This situation deteriorated more when military intervened here. Governor General of Bengal and Chakma chief signed a peace treaty in the year of 1787 AD at Fort William. A constitution was drafted for the CHT region in 1860 AD. British Govt. had conferred distinct administrative power to this region and therefore it was known as "Hill Tracts of Chittagong". It created CHT as an autonomous area for Chakmas covering an area of 5,093 square miles.[3] The CHT regulation act of 1900 declared this place as "Excluded Area" and by the India Act of 1935 CHT was known "Fully Excluded Area".[4]

According to the declaration by Sir Cyril Radcliffe CHT (98 % of Buddhist) was included into new born state of Pakistan (14 Aug, 1947 AD) where majority of the people believe in one single faith that is Islam but the problem is, Pakistan is not a democratic state. This declaration sparked the row among the Chakmas lived CHT area as they didn't want to be a part of any theocratic state. Chakma students' leaders like Lalit Kumar Chakma, G. Deoyanetc erupted in protest against this proclamation and they met Nehru with their demand that CHT should be comprised into Indian Territory other than Pakistan, later is not a secular state. They wanted CHT to be merged into Hindu majority India instead of Pakistan as Chakmas by origin are Hindus. Their mission to meet Nehru and Radcliffto withdraw the decision became fruitless. They thought that their decades old culture and tradition would be unabated and safe if this region was added to India. No stone was left unturned on behalf of them but nothing got succeeded rather failed. On the other side Pakistan knew the motive of the Chakma people.

Abhijit Bag, 2021-22

Power of Knowledge Peer Review Journal, October Special Issue-III 2021 ISSN 2320-4494 Impact factor 3.7286

The Agitation of APCSU in Arunachal Pradesh

Abhijit Bag
Assistant Professor, Department of History,
Rabindra Mahavidyalaya, Champadanga, Hooghly, West Bengal.

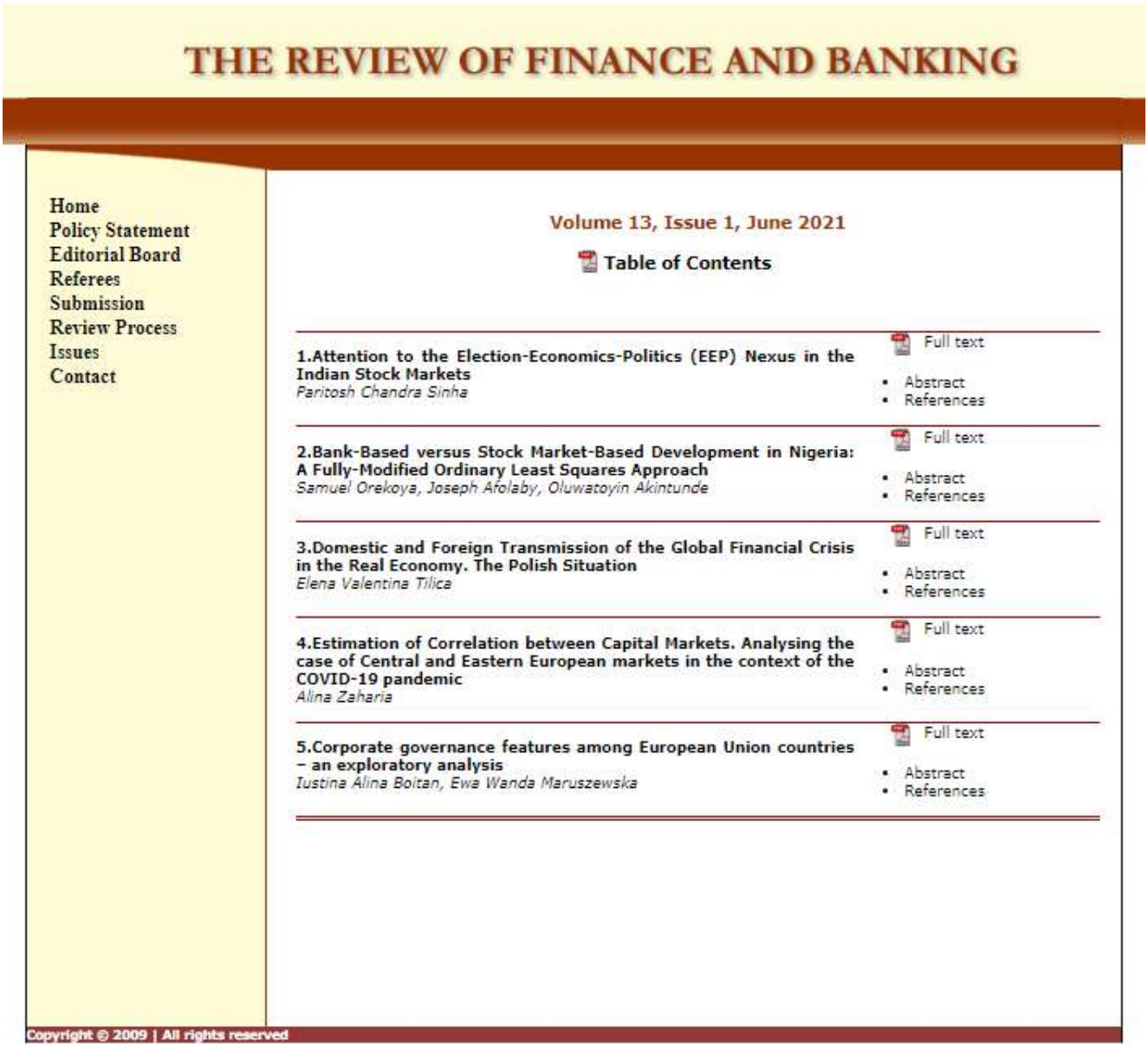
Abstract: Once upon a time there had been a Buddhist Chakmatribelived in Chittagongdistrict of undivided India. This CHT region (ChittagongHill Tracts)was declared as a "Fully Excluded Area" by the Government ofIndia act,1935 passed in the parliament of United Kingdom.Agroup of Chakmastrespassed the border and took shelter into Indian Territory of NEFA (now Arunachal Pradesh)in 1964for evading atrocity bythe Pakistani government. Whatsoever democratic movement of Chakma students (APCSU) has been continued for decades in Arunachal Pradeshfor their basic needs. They are struggling for their fundamental rights.But they are only treated as'illegal migrants' nothing else in this state. Even the Supreme Court'sverdict is yet to be implemented by the state govt. of Arunachal Pradesh asithas directed the state govt. for granting them the Indian citizenship soon. The Citizenship (Amendment) Act, 2019 was passed in the Indian parliament andnow it is assumed that Chakmas will not be discriminated more in this province.

Key Words: Arunachal Pradesh, Chakma Students' agitation, Stateless, the Citizenship Act 2019

Arunachal Pradesh is one of the tribal dominated states of north-east India. Formerly it was knownas NEFA (North-East Frontier Agency). The people of this provincial state have a different culture, food habit and tradition.Christianity is the predominant religion of the Northeastern Indian state of Arunachal Pradesh. According to the census of 2011 Christians constitute 30.26% of the state's population.1 Total population is 1,383727 of which male and female are 713,912 and 669,815 respectively.There are diverse ethnic groups in this province. The Chinese People's Liberation Army (PLA) had captured some of its areas during the Sino-India war of 1962. Nowadays China claims parts of Arunachal Pradeshespecially on Tawang and it becomes a bone of contention between India & China. Though Arunachal Pradesh is an integral part of India. We have seen the ruins of many Hindu temples were found during excavations.

Butthe socio-political scenario of Arunachal Pradesh has changed overnight when the infiltrators sought shelter in this north-east Indian state. There were about twenty thousands of refugeesfromChittagong Hill Tractsin Pakistan crossed the border and were settled inthis province (NEFA)in1964.2There were also thousands of them settled other parts of the country. Chakmas had left behind their wealth in Pakistan due to life threat by military action. There are some notable research works done on Chakma issue e.g.,The Chakmas Life and Struggle byS.P.Talukdar, Genesis of Chakma Movement in Chittagong Hill Tracts by Chandrika BasuMajumdar&Genesis of Chakma Movement (1772-1989) HistoricBackground by Bikach KumarChoudhuryetc.

Paritosh Chandra Sinha, 2021-22



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Volume 13, Issue 1, June 2021

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Dr. Safiul Alam Mallick, 2021-22

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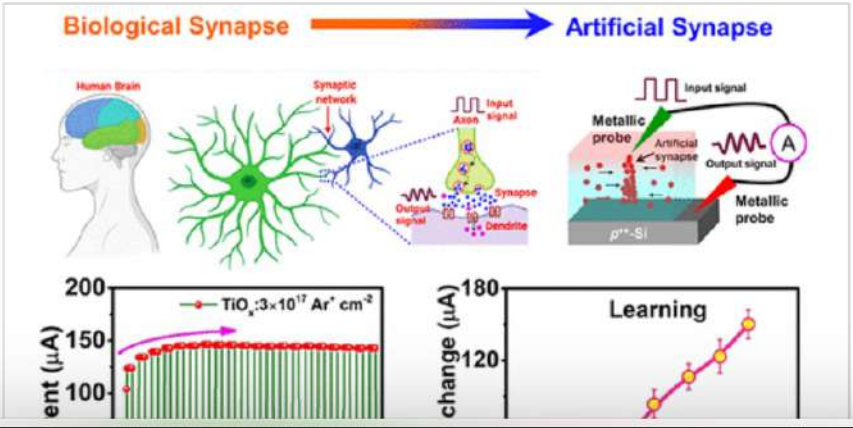
Abstract



Dr. Vivekananda Meta, 2021-22

Journal of Social Work and Social Development, Volume 12, Number 01, June 2021

Agricultural Sector: Determinants of Bank Default in Repayment of Loan in Hooghly District

Vivekananda Meta[1]

Abstract:

This study investigates the determinants of bank default in repayment of loan in agricultural sector of Hooghly district in West Bengal. It also looks in to the presence of wilful defaulter. We have collected the primary data from 364 sample borrowers who have taken loans from Commercial, Regional Rural and Co-operative banks. Here the dependent variable is probability of bank default. We employed the logit models to identify the main determinants that influence the bank default of the borrowers. This study shows the two types of defaulters, namely, wilful defaulters and involuntary defaulters. The reason for the wilful default includes membership of the governing body of the loan sanctioning authority. The reasons for the involuntary default include low level education, short fall of desired level of investment, higher dependency ratio, lack of proper irrigated, unproductive use of loans, technology, crop failure and inability of the borrowers to repay the loans.

Keywords: Defaulter, Ability to Repay, Wilful, Investment, Involuntary

Introduction:

We know bank loans are taken with the purpose of investment. If the loans are utilised for productive purpose, then their income will be generated and it is expected that the borrowers will be able to repay the loans to the banks and thus reduces the bank default. If the process goes on in this manner the wheel of development will smoothly run. But, in the rural areas, we see that many institutional credit sectors are seriously breaking down due to growing number of bank defaulters or loan overdues.

As a result the banking facilities cannot be spread in rural areas. So the bank default is the vital factor to build up the social banking.

When the co-operative credit societies were the only institutions delivering rural credit, the problem of overdue was so acute that a large number of them went into liquidation or become dormant. Similarly, when commercial banks extended their network or rural branches during the post-nationalized period,

1 ***Vivekananda Meta**, Assistant Professor, Department of Economics, Rabindra Mahavidyalaya, Champadanga, Hooghly, 712401, West Bengal, India. Mobile- 9732527272, Email: drvivekanandameta@gmail.com.*

Paritosh Chandra Sinha, 2021-22

Ramanujan International Journal of Business and Research, 2021, 6, 87-

doi: https://doi.org/10.51245/rijbr.v6i1.2021.411
ISSN: 2455-5959

ARTICLE

Noise of Investors' Attention Mania in the 21st Century Indian Stock Markets

Paritosh Chandra Sinha [1,*]

[1]Rabindra Mahavidyalaya, Hooghly, W.B., India.

*paritoshchandrasinha@gmail.com

Abstract

This paper characterises neoclassical investors as behavioral listeners rather than rational activists in their choices of attention searches online. It proposes that investors' attention search is distributed at three different attention layers - focused, selective and homogenized attention layers. It employs three sets of attention attributes on economics, politics, and political party and personality, and empirically, examines if attention search keywords at different attention layers have attention impacts on the NSE Nifty and BSE Sensex market returns. At group-wise attention attributes, the paper shows that investors' attention impacts are scattered over attributes and related to economics, politics, and political parties

সেলিনা হোসেন এর গল্প 'খোয়াই নদীর বাঁক বদল' : জীবনের বাঁক বদল

পীরুপদ মালিক

সারসংক্ষেপ :

সেলিনা হোসেন বাংলাদেশের শুধু নয় সমগ্র বিশ্বে এক উল্লেখযোগ্য নাম। তাঁর 'খোল করতাল' (১৯৮০) গল্পগ্রন্থের অন্যতম শ্রেষ্ঠ গল্প 'খোয়াই নদীর বাঁক বদল'। এই গল্পে সময়ের সরণী বেয়ে খোয়াই নদীর গতিপথ বদলে যাওয়ার সাথে মনুমিয়ার জীবনেরও কিভাবে বদল ঘটেছে তার নির্মোহ আখ্যান জীবন-বাস্তবতার পরতে পরতে আঁকা হয়েছে। খোয়াই এর চর জেগে ওঠার সঙ্গে মনুমিয়ার উত্থান, আর নদীর গতিপথের বদলের সঙ্গে তাঁর জীবনের করুণ পরিণতির কাহিনি এই গল্প।

সূচক শব্দ :

সেলিনা হোসেন, খোয়াই নদী, মনুমিয়া, জীবন বাস্তবতা, স্বপ্ন ও স্বপ্নভঙ্গ।

প্রতিপাদ্য বিষয় :

বাংলা ভাষায় রাষ্ট্র হিসেবে বাংলাদেশের নিজস্ব সাহিত্যিক ঘরানার অন্যতম বলিষ্ঠ লেখক সেলিনা হোসেন। ১৯৪৭ পরবর্তী সময় থেকে বাংলাদেশের সাহিত্যে নানা অনুষঙ্গ যুক্ত হয়। তাদের মধ্যে উল্লেখযোগ্য সামরিক শাসনের হাতে বাঙালির নিপীড়ন, বাহান্ন'র ভাষা আন্দোলন, স্বাধীনতার জন্য মুক্তিযুদ্ধ। একই সঙ্গে নানা ধরনের বিপর্যয় মোকাবিলা করতে হয়েছে দেশবাসীকে। দাঙ্গা, দুর্ভিক্ষ, মহামারী, জলোচ্ছ্বাস, সাইক্লোন, গণ-অভ্যুত্থানের মতো নানা ছোটো ছোটো সংগ্রাম। এই সমস্ত কিছুই তাঁর সাহিত্যের বিষয় হয়ে উঠে এসেছে। তিনি একসময় একটি নিবন্ধে লিখেছিলেন – 'ভেবেছিলাম সেই সময়ের কথা লিখবো, যা একান্তই আমার, যাকে আমি ভরিয়ে তুলি দিনরাতের সমুদ্র-মন্থনে, যার জন্য আমার প্রতিমুহূর্তের বয়স্ক হওয়া, যা আমার শ্রম ও যন্ত্রণা এবং ইটের ভাটার মতো লাল হয়ে ওঠা আগুনে পোড়ানো সুখ। সব মানুষের বুকের ভেতরেই সময় লুকিয়ে থাকে। সৃষ্টিশীল লেখকেরা তাকে বর্ণাঢ্য করে। এই রঙ মেশানোর খেলার জন্যই সে অন্যের চাইতে আলাদা। সেজন্য লেখকের নিজের বলে কোনো সময় থাকে না। তা সবার হয়। ভেবে দেখেছি আমিও আমার সময়কে নিজের বলে ধরে রাখতে পারিনি। সেটা অনেকের হয়ে উঠেছে।'[১] অর্থাৎ বিভিন্ন সময়ে তাঁর লেখার বিষয় ভিন্ন হয়েছে।

Paritosh Chandra Sinha, 2021-22

SKBU Business Review, Vol. 1, No. 1, July 2021 ISSN: 2583-0678

Stable, Unstable and Adaptive Stock Markets: A Tale of Market References

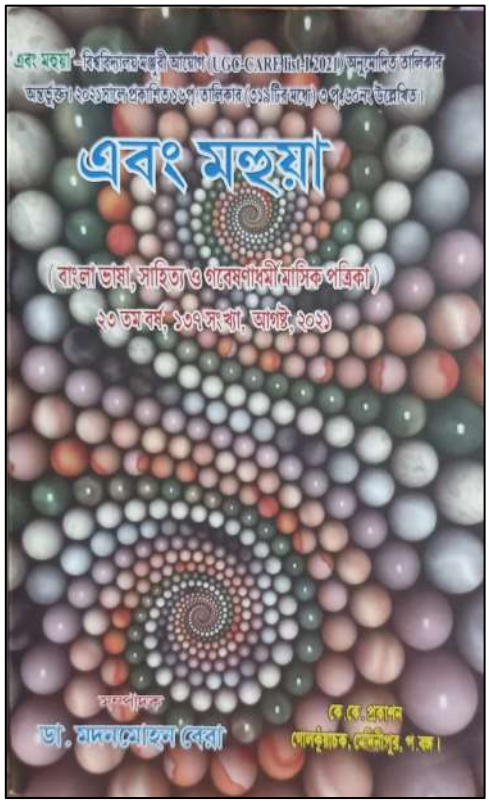
Dr. Paritosh Chandra Sinha
Assistant Professor, Department of Commerce,
Rabindra Mahavidyalaya, Hooghly, West Bengal

Abstract

Purpose of the Study: The present study explores if the linear CAPM vis-à-vis its autoregressive distributed lag (ARDL) augmentation model stands up to expectations at the stable, unstable and adaptive references of the NSE stock market in India.
Study design/methodology/approach: With a sample of the NSE Nifty stocks in India during April 3, 2000 and January 14, 2019, methodologically, this study firstly considers if the CAPM and its ARDL augmentation can explain stocks' returns at the full-length data, and then, it considers the same at the market references of the pre-2008-09 financial crisis (stable market), during the financial crisis (unstable market) and the post-financial crisis (adaptive market).
Findings: With the data of nine stocks from the Nifty, this study shows that the linear CAPM has little explanatory powers at the both cases of use of the full-length data and the different market references while the ARDL augmentation of the same has better explanatory powers in all the cases.
Implications of the study: The mutual fund managers can identify effects of investors' reference-dependence of market situations along with the overall market impacts. This study shows the extents of such reference dependencies with the data of Nifty stocks.
Originality/value: With the ARDL model, the static CAPM view is calibrated with the dynamic reference-dependence perspectives along with their behavioral applicative values.

Keywords: *Efficient Market Hypothesis; Fractal Market Hypothesis; Chaos Theory; Behavioral Economics; Adaptive Market Hypothesis.*

Address for Correspondence: Dr. Paritosh Chandra Sinha, S/O: Narayan Chandra Sinha, Purbayan, Indrakanan South, PO: Sripally, Dist: Bardhaman East, W.B, India. PIN: 713103; Land Mark: Opposite of Sethia Jain Cold Storage, DVC Road, Bardhaman. Mb. (0091) 6296300422; (0091) 9732339694. **Email:** paritoshchandrasinha@gmail.com



Soumitra Das, 2021-22

ভারতবর্ষে স্বস্তিমৃত্যুর গ্রহণযোগ্যতা

সৌমিত্র দাস

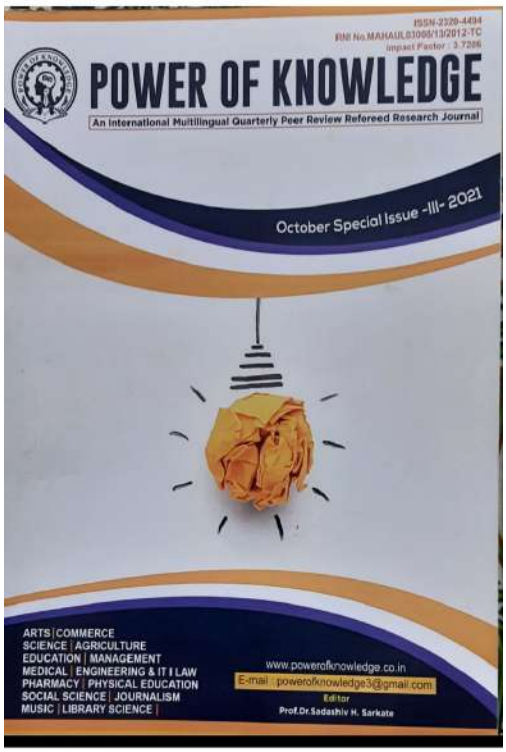
স্বস্তিমৃত্যু ব্যাবহারিক নীতিবিদ্যার একটি মুখ্য আলোচ্য বিষয়। তাই স্বস্তিমৃত্যুর আলোচনা করতে গেলে নৈতিকতার প্রশ্ন চলে আসে, অর্থাৎ স্বস্তিমৃত্যু কি গ্রহণযোগ্য? স্বস্তিমৃত্যুকে কি আইনি স্বীকৃতি দেওয়া উচিত? ইত্যাদি। স্বস্তিমৃত্যু সমর্থনযোগ্য কিনা তা আলোচনা করার পূর্বে আলোচনা করা দরকার এই স্বস্তিমৃত্যু বা ইউথেনেশিয়া কী? বা স্বস্তিমৃত্যু কাকে বলে?

স্বস্তিমৃত্যু কী? —তা আলোচনা করতে গিয়ে বিশিষ্ট ব্যাবহারিক নীতিবিদ পিটার সিঙ্গার তাঁর 'Practical Ethics' গ্রন্থে বলেছেন—

"Euthanasia means according to the dictionary, ' a gentle and easy death', but it is now used to refer to the killing of those who are incurably ill and great pain or distress, for the sake of those killed, and in order to spare them further suffering or distress."[১]

পিটার সিঙ্গার স্বস্তিমৃত্যু বলতে এমন একটি পরিস্থিতি সাপেক্ষ মৃত্যুকে বুঝিয়েছেন যখন কোন ব্যক্তি এমন একটি দুরারোগ্য ব্যধিতে ভুগছেন যা তাকে অনবরত কল্পনাতীত দুঃখ কষ্ট বা যন্ত্রণা দিয়ে চলেছে। এবং এই রোগের কোন সমাধান সূত্র মেডিকেল সাইন্স (Medical Science) এই মুহূর্তে দিতে পারছে না। এই রকম একটি কঠিনতম পরিস্থিতিতে সেই দুরারোগ্য ব্যাধিতে আক্রান্ত ব্যক্তি নিজের ইচ্ছায় শুধুমাত্র শারীরিক অক্ষমতার কারণে বা প্রতিকূল পরিস্থিতির জন্য ওই দুঃখ থেকে নিবৃত্তি পাওয়ার জন্য নিজেকে হত্যা করতে সমর্থ হচ্ছেন না। এইরূপ পরিস্থিতিতে ওই ব্যক্তির অনুরোধে এবং তার আত্মীয়-স্বজনের অনুমতিতে চিকিৎসক কর্তৃক যদি ওই ব্যক্তির মৃত্যু ঘটানো হয় তখন তাকে বলা হয় স্বস্তিমৃত্যু।

'Euthanasia' শব্দটি গ্রিক শব্দ 'Eu' এবং 'Thanatos' শব্দ যোগে উৎপন্ন; যার অর্থ হলো Good Death অর্থাৎ সুন্দর শান্তিপূর্ণ মৃত্যু।[২] কিন্তু Euthanasia বা স্বস্তিমৃত্যুকে শান্তিপূর্ণ মৃত্যু বললেও তা ঠিক বোধগম্য বিষয় হয় না। কারণ খুব সাধারণ মৃত্যুও শান্তিপূর্ণ হতে পারে। Euthanasia বা স্বস্তিমৃত্যুর প্রধান কথা এই যে এই মৃত্যুতে সমবেদনা বা সহানুভূতির প্রদর্শন করা হয়ে থাকে। অর্থাৎ যে হত্যায় সহানুভূতি বা সমবেদনা প্রদর্শন করা হয়ে থাকে তাই হল স্বস্তিমৃত্যু। স্বস্তিমৃত্যুতে দুরারোগ্য ব্যাধিতে আক্রান্ত ব্যক্তির প্রতি দয়া বা সহানুভূতির প্রদর্শন করা হয় তাই এই প্রকার হত্যাকে



Bikash Halder, 2021-22

Relooking the National Education policy 2020 from the perspective of the Libraries: a study

Bikash Kumar Halder
Librarian
Rabindra Mahavidyalaya Champadanga, Hooghly, West Bengal

Abstract:- The National Education Policy, 2020 aims to address the many growing developmental imperatives of our country. It helps to revise and revamp of all aspects of the education structure to create a new system with the aspirational goals of the 21st century education. Here the education concept is being broadened such as school education for the children, higher education and adult education. Every minute aspect is given equal emphasis to build a vibrant and global education system in India that will be effective to keep abreast with this globalized education system throughout the world. The effective and far-reaching effects of libraries by providing the digital library services and extending the school libraries during the non- school hours from school education to the life-long learning is again emphasized by providing various aspects. The emphasis is also given to the ICT enabled education system which is now very accepted in the present COVID stricken world. However, through this policy the Govt. of India is trying their best in the education sector which is the actual need of the hour.

Keywords:- National Education Policy; Adult education; ICT; Libraries; Digital libraries; lifelong learning

Introduction:- The Union Cabinet, chaired by Prime Minister Narendra Modi approved the National Education Policy 2020 on July 19, 2020. The policy is based on the Draft National Education Policy 2019 chaired by Dr. K. Kasturirangan, the former chairman of the Indian Space Research Organization submitted to the Ministry of Human Resource & Development (MHRD) on December 15, 2018. The four part National Education Policy (NEP) covers School education (Part I); Higher Education (Part II); others key Areas of Focus (Part III) such as adult education, promoting Indian languages and online education; and Making it happen (Part IV), which discussed the policy's implementation.

Objectives & Methodology: - The objective of this paper is to highlight the different aspects of the new Education Policy in the light of Libraries. Libraries have a great role in education. Online source and literature review method are being followed in this study. APA 6th edition has been followed here.

Major Highlighted Areas of National Education policy, 2020

1. The policy seeks to restructure school curricular and pedagogy in a new '5+3+3+4 design, so that school education can be made relevant to the needs and interests of learners at different developmental stages----- Foundation Stage (five years)

Swadeshi Research Foundation A Monthly Journal of Multidisciplinary Research
International Peer Reviewed, Refereed, Indexing & Impact Factor - 5.2, Ex- UGC S.N. 4990
ISSN : 2394-3580, Vol. – 9, No. – 2, Dec. – 2021, Special Issues

2021

Impact of Cricket Training on the Selected Composition of Body Structure of the School Going Boys

Sk. Sultan Ali
Reaearch Scholar, Burdwan University
Dr. Hiralal Adhikari
Prof. N.B.S. Mahavidyalaya (RETD), Burdwan University
Dr. Atanu Das
Asst.Prof.Rabindra Mahavidyalaya, Burdwan University

Abstract :- Cricket is one of the longest competitively played games in the world. It can have a time span of between three and forty hours, and be played in the harshest of weather conditions, ranging from scorching hot days to (bowlers running up against a) gale force wind. In this regard compositions of the body structure are much important. Any regular training can have great influence on the body structure. Therefore the main purpose of this study is to explore the effects of cricket training on the selected compositions of the body structure of the school going children, to study how regular cricket training impact the body fat of the school going children, to find out whether cricket training influences the fat mass and lean mass of the school going children. For this purpose 30 school going children were selected and they were given six months cricket training on a regular basis. Before starting the training the variables of the physical body structure were measured and after the completion of the training again the variables were measured. Gathered data was statistically analyzed.

Introduction :- Cricket has been an established team sport for hundreds of years and is one of the most popular sports in the world. It originated in England and is now very popular in countries such as India, Pakistan, Sri Lanka, Australia, the West Indies and South Africa.

Competitive cricket is essentially a bat and ball sport. It is played by two teams on an oval and involves batting, fielding and bowling. There are 11 players a side and a game can last anywhere from several hours to several days.

Cricket can be played both socially and competitively, by males and females of all ages. While competitive cricket is mostly played on a field, cricket just for fun can be played in backyards, parks, streets or on the beach. You only need a couple of friends, a bat, a ball and something that represents wickets. To play competitively, consider joining a local club.

Although there is some standing around, to play cricket you need to be fit and strong, and have good hand-eye coordination and ball-handling skills. Cricket involves sprinting between wickets and running to stop balls, as well as bowling and throwing.

Health benefits Include :-

- Endurance and stamina
- Balance and coordination
- Physical fitness
- Improving hand-eye coordination.

It's been said before and will be said again: The best way to get fit for cricket is by playing cricket. That, in a nutshell, is the principle of "specificity": our body adapts to demand put on it in a highly specific way. It's why runners can't run faster by training on a bike and why cricketers will not get any better at cricket by jogging for miles. It just doesn't happen on the pitch in the same way. So when given the option, the best form of fitness will always be the closest you can get to actually playing cricket. According to training expert Mike Boyle, most power based team sports (cricket included) have certain actions that are almost identical: sprinting, jumping, changing direction

ELSEVIER

Solar Energy
Volume 221, June 2021, Pages 185-196

Understanding temporal evolution of microstructures on metal-assisted chemically etched Ge surface and its applications

Alapan Dutta [a b], Safiul Alam Mollick [c], Paramita Maiti [a b], Tapobrata Som [a b]

https://doi.org/10.1016/j.solener.2021.04.028

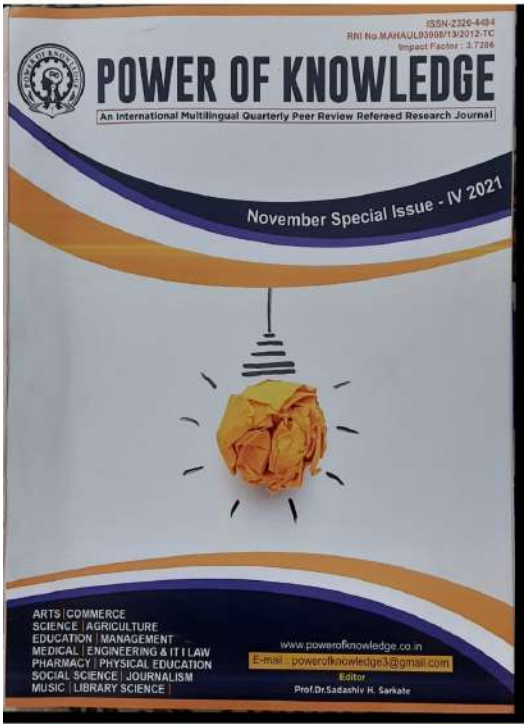
Highlights

- Metal-assisted chemical etching of single crystalline *p*-Ge(1 0 0) substrates at an elevated temperature leads to the evolution of pyramidally textured surfaces.
- Continuum theory-based numerical simulation studies are performed to support the experimental observations.
- Unprecedented reduction in optical reflectance up to 0.23% is observed over a broad spectral range (600–3000 nm) corresponding to an etching time of 1200 s.
- Cold cathode electron emission with very low turn-on field (1.7 V μm^{-1}) and high field enhancement factor (15171) is observed for an etching time of 1200 s which is the best known for any Ge-based nano/microstructure.

Abstract

We report on metal-assisted chemical etching (MaCE) of single crystalline *p*-Ge(1 0 0) substrates at an elevated temperature, using dilute H_2O_2 solution, for various etching times in the range of 30–1200 s. We carry out atomic force microscopic and scanning electron microscopic studies to investigate the temporal evolution of microstructures on Ge substrates. It is observed that at lower etching times rough surfaces evolve, whereas higher etching times lead to the formation of pyramidally *textured* surfaces. In order to understand the present observations numerical simulation studies, based on continuum theory of stress-induced morphological instability, are carried out. Further, in an attempt to demonstrate the tunable multifunctional properties of pyramidally

Bikash Halder, 2021-22



Public Libraries of Tarakeswar Block in the Hooghly District of West Bengal: Present-day Scenario

Bikash Kumar Halder
Librarian
Rabindra Mahavidyalaya, Champadanga, Hooghly, WB

Bibhash Ram Singha
Librarian
Malda Women's College Malda, WB

Abstract:

This study describes a vivid picture about the present scenario of public libraries of Tarakeswar Block in the Hooghly District. At the age of exponential growth of information technologies not only the library professionals and information seekers together suffer from multidimensional problems but the related areas are also facing the challenge. Here, the researcher has surveyed all public libraries through survey methodology, using questionnaire, observation and interviews with the library professionals, library users and the non-user's community. In this ICT era the library professionals and researchers have fallen into dilemma about future prospect of these traditional libraries and their profession. The scholar preferred to select this district as his area of study. This study highlights actual number of libraries is open and close, actual number of staff, users and library collections. It also highlights many problems are there in public libraries such as deficiency of space, staff and budget, lack of library awareness programmes, administrative problems and necessary library automation. Hence there is a strong need of government grant in these libraries.

Key words: Public Libraries, Tarakeswar Block, Hooghly District, West Bengal

1. Introduction:

Public library is a democratic institution meant for the progress of the society. It is of the people and for the people. Public libraries are the centre of education, culture and knowledge with social role to play in the society. Originally, they were created as public repositories of books for those who could not afford private collections. They were intended to serve as "people's university" to advance the learning of those with limited access to formal education. According to UNESCO public library manifesto (1994), the public library is the local centre of information, making all kinds of knowledge and information readily available to its users. The services of the public library are provided on the basis of equality of access for all, regardless of age, race, sex, religion, nationality, language or social status. So, the public libraries are the local gateway to knowledge and it should provide basic condition for lifelong learning, independent decision making and cultural development of the individual and social groups.

2. Literature Review:

Sultana, 2014 analysed in his article 'Rural Library Services: Lessons from Five Rural Public Libraries in West Bengal' that public libraries are an integral part of any community, regardless of size. Information dissemination via rural public library is an essential ingredient for the development of the rural community.

According to Vilgi &George, 2017 an attempt has been made to evaluate the present

Amit Das, 2021-22

© 2022 JETIR January 2022, Volume 9, Issue 1 www.jetir.org (ISSN-2349-5162)

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

PERCEPTION OF DEGREE COLLEGE STUDENTS TOWARDS ONLINE EDUCATION IN TEACHING-LEARNING PROCESS: AN ITEM ANALYSIS

Ranajit Dhara, Uday Bauri & Amit Das

- State Aided College Teacher, Department of Education, Kalna College, Purba Badhaman, West Bengal, India.
- Assistant Professor, Department of Education, Narasinha Dutta College, Howrah, West Bengal, India.
- Assistant Professor, Department of Education, Rabindra Mahavidyalaya, Champadanga, Hooghly, India.

Abstract:

With the COVID-19 -a novel corona virus disease spreading across the globe, many countries have ordered closure of all educational institutes. Educational institutions have come to a functional standstill since they had to protect their students from viral exposures, which are likely in a highly socializing student community. The lockdown had serious implications on mental health, resulting in psychological problems including frustration, stress, and depression. Online education is the most important platform in this situation. College and university students keep up continue education through online education. To examined the level of perception of degree college students towards online education in West Bengal. In this study revealed that most of the College Students have given their opinion that online education is not much more effective in the field of practical education and Evaluation of students by online education is not easier. It also observed that some of the College Students did not support that online education is maintaining the traditional trend of education as well as it is not a problem at the beginning of the class because the network is good.

Keywords: COVID-19, Online education, Students, Institution, Teachers.

Susmita Sengupta, 2020-21

ISSN 2319-829X
Humanities and Social Science Studies, Vol. 9(2)

Seasonal migration, livelihood resilience, and survival of 'Left-Behind' children in school education

Susmita Sengupta
Assistant Professor of Geography
Rabindra Mahavidyalaya, Champadanga, India

Sanat Kumar Guchhait
Professor, Department of Geography
The University of Burdwan, West Bengal, India

ABSTRACT

The paper opts to investigate the long-term effects of seasonal migration on child's access to school education. The phenomena of seasonal migration "leaving the child at home" or "accompanied by" includes a common livelihood resilience in Purulia district where migration is the only viable option to sustain livelihood in lean-agricultural season. Although parents' migration in such areas seems to be essential for the family economy, lack of parental care seems to be responsible for academic and psychological non-adjustment that affect a child's education to a great extent. The Kaplan-Meier Estimation analysis of school participation has been employed to explore the survival probability of children at varying contexts, viz. migration status, gender and caste. The main findings include the negative impact of parental migration on school participation of 'left-behind' children leading to early drop-out before completion of the school education cycle.

Keywords: Seasonal migration, left-behind, opportunity cost, survival function, drop-out

INTRODUCTION

"I rarely participate in my child's education as I have to migrate in non-monsoon season in search of an alternate job."

- Bileswar Murmu, an agricultural laborer and a father of two girl children

"I open my father's saloon every day when my father migrates to Bardhhaman; I do not go to school in those days. After a long gap, I feel uneasy about attending school."

- Ambuj Murah, a teenage boy, studying in class IX at Bagbinda village.

"I had to support my parents to take care of my brothers and sisters; I went to school maximum two to three days a week."

- Lakshmi Murmu, A teenage girl who dropped out of school in class-III

Bileswar, Ambuj, and Lakshmi are the 'Left-behind' children of remote rural corners of Chhota Nagpur plateau located in Eastern India whose either of the parents used to migrate to neighboring towns or other states in lean agricultural season each year and due to their absence, the children usually fail to get the full benefit from schooling. Hearing these voices depicted above raises some questions that "Do the school education system in rural parts of India suffer from socio-economic inequalities?" "How long these 'Left-behind' children of remote settings survive in the system of school education?" These voices also have emerged the bare fact that after more than seventy years of independence, despite the accomplishment of the Sarva Siksha Abhiyan (SSA), carrying off the District Primary Education Programme (DPEP), the announcement of National Policy on Education from 1986, the socio-economic deprivation has continued to

Dr. Chirodip Majumdar, 2020-21

Religiousness, Religious Denomination and Satisfaction: An Asian Perspective

Chirodip Majumdar

Keywords: Financial Satisfaction,, Happiness,, Life Satisfaction,, Religion

Abstract

The article investigates the influence of religiousness and religious denomination on life satisfaction and financial satisfaction. The first research question is whether religious people in Asia are more satisfied than non-religious ones. It is also searched, people belonging to which religious denomination, are happier than others. The data is obtained from the 6th wave of the World Values Survey and the responses of Asian respondents are taken into account. It is found that respondents who believe in God and take religion as important in life, express greater life and financial satisfaction. Though satisfied with life, Buddhists are less satisfied with their financial position than others. Buddhists probably place greater weightage on non-

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Published
2021-03-29

How to Cite
Majumdar, C. (2021). Religiousness, Religious Denomination and Satisfaction: An Asian Perspective. *Economy Polity Environment : An*

Joydip Ghosh, 2020-21

ISSN: 2582-8118 ***Volume 1, Issue 3; May 2021***

INTERNATIONAL JOURNAL OF RESEARCH AND ANALYSIS IN SCIENCE AND ENGINEERING

Web: https://www.iarj.in/index.php/ijrase/index

3. A Study on the Antibacterial Activities and Medical Properties of Water Chestnut

Tanmay Ghosh
Department of Microbiology, Dinabandhu Andrews College, Baishnabghata, South 24 Parganas, Kolkata, West Bengal, India.

Joydip Ghosh
Department of Microbiology, Rabindra Mahavidyalaya, Champadanga, West Bengal, India.

ABSTRACT

Fruits and vegetables are generally known as very good and abundant sources of several vitamins and minerals, not only that but also they are very effective in increasing immunity power against several microbial infections.

In the matter of discussion of preventing bacterial infections the underwater vegetables are not staying back. One of the very effective and used under water vegetable is Water Chestnut. Water chestnut is not a nut at all, but it is a very useful aquatic vegetable that grows under Water in the mud. Eleocharisdulcis, belongs to family Cyperaceae, commonly called Chinese water chestnut. It was stem-like, its green leaves grow to about 1.5m.

The small, round forms have crisp. White stuff may be eaten fresh, boiled grilled and also used as pickled. Water Chestnuts are popular dishes in china. It also used for making many cake or delicious food. It is grown in many countries like Asia (china, India & Japan etc.), Africa, Australia, and Island. Water chestnut used in agricultural department. It also plays important role in medical Field to development medical science.

Its peels extracts, seed used for product many type of medicine. It showed a high-level antibacterial activity against some bacteria like Bacillus subtilis, Escherichia coli, Salmonella typhi etc. In medicinal field this plant use to cured many type of diseases like inflammation, urinary, discharges, fractures, leprosy, astringents, bad teeth and malaria.

KEYWORDS

Water Chestnut, Microbiology, Pharmaceutical Sciences, Biology.

Ghosh & Pramanick. *Space and Culture, India* 2021, **8**:4
https://doi.org/10.20896/saci.v8i4.1112

RESEARCH OPEN ACCESS

Assessing Psychological Effects of Cyberbullying on the Adolescents of a Cosmopolitan City

Dr Shovan Ghosh[†] and Sucharita Pramanick[¥*]

Abstract

The popularity of computer-mediated communication and cyber technology has created many new vices in society that obstruct the development of adolescents. One such vice is cyberbullying, which is an insidious and covert form of bullying. The present paper opts to scrutinise cyberbullying's psychological effects on the victim teenagers of minority communities of a cosmopolitan city. Confirmatory factor analysis, for testing the Psychological Effect of Cyberbullying Scale (PECS) comprising 24 direct item pool, was employed to unfold Mild Psychological Effect Scale (MPES) and Intense Psychological Effect Scale (IPES). Cross validating the initial factor structure was conducted with the help of developing standardised coefficient for the two factor model for PECS. Cronbach's alpha reliability coefficient values are above 0.09 for the items of both the Mild Psychological Effect Scale (MPES) and Intense Psychological Effect Scale (IPES). Based on purposive sampling, the study found that all the items taken for conducting the survey are highly co-related to the psychological impact of the victim teens of the minority community of the cosmopolitan city. So the PECS developed for measuring the effect has significance. Study results also indicate that the PECS can serve as a valuable tool for measuring the mental impact of cyberbullying among teenagers.

Keywords: Cyberbullying; Minority Community; Psychological Effect; Cosmopolitan; Teenager; Kolkata Municipal Corporation; India

[†] Associate Professor, Department of Geography, Diamond Harbour Women's University, Diamond Harbour Road, Sarisha, District: South 24 Pargana, West Bengal, India, Pin: 743368 Email: ghoshshovan80@rediffmail.com
[¥] Assistant Professor, Department of Geography, Rabindra Mahavidyalaya, Champadanga,
District: Hooghly, West Bengal, India, Pin, 71240, Email id: sucharitapramanick21@gmail.com
[*]Corresponding Author, Email id: sucharitapramanick21@gmail.com

Do Age and Gender Play a Major Role in Emotions and Reactions of Victim Teenagers of Cyber-bullying? Evidences from a Cosmopolitan City in India

Sucharita Pramanick and Shovan Ghosh

Abstract

Digital environment or cyber space is a reflection of socio- cultural space and computer mediated communication is a performative element of spatial production. Virtual space has projected itself as a mere reflection of offline space. Today, the growth of internet based activities, like that of gaining knowledge, entertainment and most importantly communication has introduced several negativities in the society, which young people has to combat during their adolescents. With addition to traditional forms of bullying, cyber-bullying is also affecting their mental development. In India, much research has been conducted on the traditional forms of bullying, but researches focusing on different aspects of the cyber- bullying and specially effects on adolescents are very few. Against these backdrops, the present paper seeks to explore the impact of cyber-bullying on the mental health of urban teenagers with respect to their emotions, reactions and behavioural patterns and its variations based on age and gender. Questionnaire survey was conducted in selected schools of Kolkata based on stratified random sampling methods. The results of inferential statistical analysis indicate that age and gender, the two most important biological factors play a major role on the scale and range of emotions experienced, reactions and behaviours of the victim teens of cyber-bullying. Both gender variation and age variations in the psychological impact on the teenagers are eminent from the study.

Key words: cyber-bullying, cosmopolitan, emotions, reactions, teenagers

Introduction

Virtual space is a mere reflection of offline space (Nunes, 2006). The invention and diffusion of computers and cyber technology are defining social, economic and geographical processes of late twentieth century (Adams and Warf, 1997). Exponential advancement into the field of technology has provided an easy opening into the outside world. The advent and growing popularity of cyber communication is creating new

Joydip Ghosh, 2020-21

Research & Reviews: Journal of Agriculture and Allied Sciences

e-ISSN:2347-226X
p-ISSN:2319-9857

Comprehensive Studies of Black Pepper and its Chemical Profiling

TANMAY GHOSH[1]*, JOYDIP GHOSH[2]

[1] Department of Microbiology, Dinabandhu Andrews College, Baishnabghata, South 24 Parganas, Kolkata– 700084, West Bengal, India.

[2] Department of Microbiology Rabindra Mahavidyalaya, Champadanga, Hooghly, West Bengal – 712401 India.

Research Article

Received date: 10/12/2020
Accepted date: 28/12/2020
Published date: 05/01/2021

*For Correspondence

TANMAY GHOSH

Keywords: Pharmacological, Natural, Flavonoids, inhibition.

ABSTRACT

In a traditional systems use of medicinal plants have a great role. Medicinal plants have diverse pharmacological potential with very lesser or no side effect. Black pepper (*Piper niger* L.) is a natural medicinal plant used to treat many diseases. Here we have used ethanol, chloroform, and methanol extract of Black pepper of 50µg/ml, 100µg/ml, 200µg/ml, and 300µg/ml concentration. It is observed that 300µg/ml concentration of ethanol extract of Black pepper shows the high zone of inhibition. There are several phytochemical, found in Black pepper after observing in qualitative phytochemicals analysis. The phytochemicals are alkaloids, flavonoids, steroids, tannins, and saponins.

INTRODUCTION

The Plants have antimicrobial, antiviral, and antibacterial potential. Day by day the search on antimicrobial activities of plants increases with high expectation. Black pepper is a type of spice, scientific name Piper nigram, found in almost all over the world having various medicinal activities. A fresh mature Black pepper of approximately 5m in diameter contains a seed like a drupe. Black pepper is mainly cultivated in tropical regions, Vietnam is the world's largest source of Black pepper. It can maintain cholesterol levels, blood sugar, gut breath and can improve the brain. Here I have studied the antimicrobial effect of Black pepper.

MATERIAL AND METHODS

Collection of Plant Material:

Seed of Black Pepper was selected for the study of antibacterial activity and phytochemical analysis. The seed black pepper was collected from the market on Hooghly, West Bengal, India.

Taxonomical position of Black pepper:-

gdom: Plantae

de: Tracheophtyes

Dr. Shelly Sinha, 2020-21

REVIEW ARTICLE

A Review on Bryophytes as Key Bio-indicators to Monitor Heavy Metals in the Atmosphere

Shelly Sinha,[1] Anjana Singh,[2] Dwaipayan Sinha,[3]* and Reshmi Chatterjee[4]

DOI: 10.18811/ijpen.v7i01.5

Abstract

Bryophytes are one of the simplest autotrophic cryptogams invading land and characterized either by simple thalloid or erect habit lacking true leaves, root and stem within the plant body. Although they are ubiquitous in distribution, yet becomes sensitive to certain environmental conditions that can be natural or induced due to anthropogenic activity. Due to their versatile tolerance and resistance capability they can be categorically used as potential bioindicators for monitoring pollution. Bryophytes can be utilized as 'environmental specimen bank' due to their unique capacity of indicating the presence of metal and their concentration gradient in the substratum. Apart from their utility in pharmaceutical products, horticulture, household purposes they are also ecologically important. As multidimensional applications of the flora are being increasingly standardized universally, their potential in the biomapping of atmospheric pollution as well as ecological biodegradation is also enormous. Currently, a change in global climate is intensified that affected Earth's biomes and vegetation zones redistribution. At higher altitudes, this alteration is more promising with rapid consequences. Elevated temperatures are expected to produce a drier environment that affect site water balance and cause shifts in the distribution of ecosystems on a universal scale. These effects are rather evident in such ecosystems as peatlands which are sensitive to both climate and water level fluctuations. Decrease in epiphytic bryophytes because of gaseous and particulate pollutants as well as the greenhouse gases is also a serious problem. Besides this, very specific and unique responses are generated by the bryophytes; studies have proven that they act as potential monitoring bio-agents for heavy metal pollution. In the present paper, an attempt is done to do a comprehensive study on bryophytes that reflects their role as promising indicators in monitoring pollution.

Keywords: Bioindicators, Bryophytes, Heavy metals, Pollution.

International Journal of Plant and Environment (2021);

ISSN: 2454-1117 (Print), 2455-202X (Online)

Introduction

Since the advent of civilization, the environment has received various types of pollutants in one form or the other. The first record of anthropogenic pollution may well be traced back with the discovery of fire by humans that initiated adding up of toxic oxides of carbon, nitrogen, sulphur in the atmosphere. Gradually as the civilization and time proceeded, earth was contaminated by a wide array of pollutants with anthropogenic wastes which were mostly non-biodegradable. Records of pollution can be very well documented from the industrial era where ambitious human activities have led to emission of greenhouse gases resulting in the change in climate (Perera, 2018). However, pollution started well before the industrial era and it is documented there are a number of ancient civilizations which were largely responsible for build-up of anthropogenic pollution. Among various pollutants, heavy metal contamination is one of the earliest which is documented in historical records.

Detection of lead and copper from the ice cores recovered from Greenland indicates that their concentration was greater 2500 to 1700 years ago (500BC to 300AD). This is possibly due to lead and silver mining and smelting activities by ancient Greeks and Romans which were primarily used for weapons, artefacts and others. This eventually resulted in pollution of the troposphere of northern hemisphere and is probably the first record of this type due to anthropogenic activity. These metals consequently deposited in the ice sheets of Greenland (Hong *et al*., 1994; McConnel *et al*., 2018). In southern hemisphere, the earliest evidence of atmospheric metal emission was detected in sediment cores of lakes located downwind of major metallurgical centers in Peru and Bolivia (Abbott *et al*., 2003; Cooke *et al*., 2007; Cooke *et al*., 2009). Contamination of South America by metals began as early as 1800BC in Peru and Bolivia and also in the Inca Empire between 15th and 16th century which resulted in dissemination of metal pollutants across the Andes (Lechtman, 1980; Brown, 2012). Later on, the Spanish conquistadors added more pollution in the subcontinent through mining of silver and associated use of mercury amalgam (Robins and Hagan, 2012). Europe also has a long history of metal pollution starting from the Bronze Age to the modern times. The industrial revolution

[1]Department of Botany, Rabindra Mahavidyalaya, Champadanga, Hooghly-712401, West Bengal, India

[2]Department of Botany, Deshbandhu College, University of Delhi,, Kalkaji, New Delhi-110019, India

[3]Department of Botany, Government General Degree College, Mohanpur, Paschim Medinipur-721436, West Bengal, India;

[4]Department of Botany, Mrinalini Datta Mahavidyapith, Birati, Kolkata-700051, West Bengal, India

***Corresponding author:** Dwaipayan Sinha, Department of Botany, Government General Degree College, Mohanpur, Paschim Medinipur West Bengal, 721436, India, Mobile: +91-9007709999, Email: dwaipayansinha@hotmail.com

How to cite this article: Sinha, S., Singh, A., Sinha, D., Chatterjee, R. (2021). A Review on Bryophytes as Key Bio-indicators to Monitor Heavy Metals in the Atmosphere. International Journal of Plant and Environment. 7(1), 49-62.

Conflict of interest: None

Submitted: 27/02/2021 **Accepted:** 28/03/2021 **Published:** 15/04/2021

Link to website of the Journal: https://www.ijplantenviro.com/
Link to article / paper / abstract of the article:
https://www.ijplantenviro.com/index.php/IJPE/article/download/1325/772. DOI: 10.18811/ijpen.v7i01.5
Link in UGC Care list:
https://www.ijplantenviro.com/index.php/IJPE/article/download/1325/772. DOI: 10.18811/ijpen.v7i01.5
Check the publication details in MS excel file: Checked

Paritosh Chandra Sinha, 2020-21

Business Insight

Volume 8 **March** **2021**

Journal of the
Department of Commerce
The UNIVERSITY OF BURDWAN
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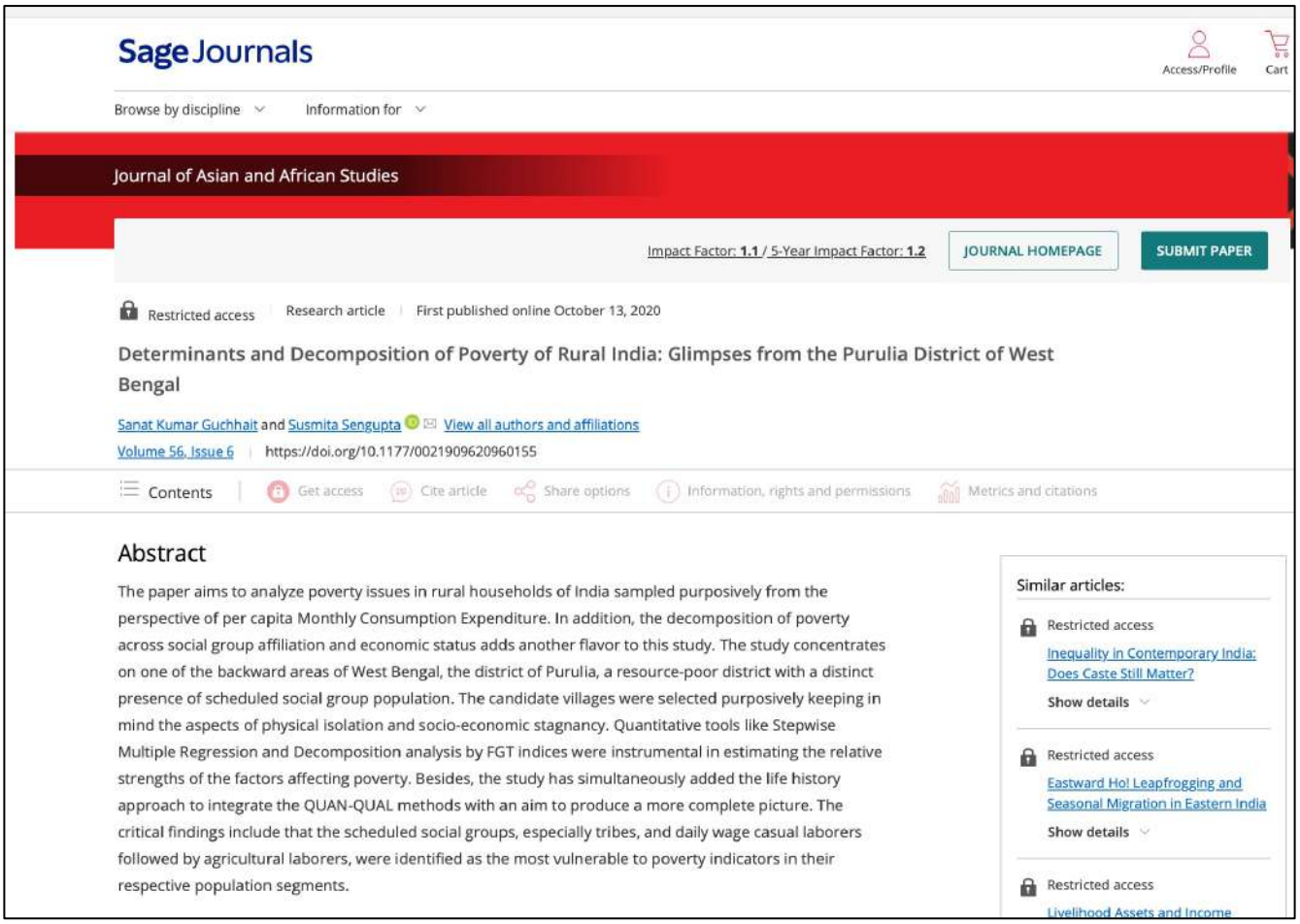
Susmita Sengupta, 2020-21



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Determinants and Decomposition of Poverty of Rural India: Glimpses from the Purulia District of West Bengal

Sanat Kumar Guchhait and Susmita Sengupta View all authors and affiliations

Volume 56, Issue 6 | https://doi.org/10.1177/0021909620960155

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Abstract

The paper aims to analyze poverty issues in rural households of India sampled purposively from the perspective of per capita Monthly Consumption Expenditure. In addition, the decomposition of poverty across social group affiliation and economic status adds another flavor to this study. The study concentrates on one of the backward areas of West Bengal, the district of Purulia, a resource-poor district with a distinct presence of scheduled social group population. The candidate villages were selected purposively keeping in mind the aspects of physical isolation and socio-economic stagnancy. Quantitative tools like Stepwise Multiple Regression and Decomposition analysis by FGT indices were instrumental in estimating the relative strengths of the factors affecting poverty. Besides, the study has simultaneously added the life history approach to integrate the QUAN-QUAL methods with an aim to produce a more complete picture. The critical findings include that the scheduled social groups, especially tribes, and daily wage casual laborers followed by agricultural laborers, were identified as the most vulnerable to poverty indicators in their respective population segments.

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Journal home page: www.plantarchives.org
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VALIDATION OF TRIBAL CLAIMS ON *MORINGA OLEIFERA* LAM. USING PHYTOCHEMICAL ANALYSIS

Getsial Sabatini Wallace J[1], S. Naveen Kumar[1], V. Negasta Smila[1], T. Nivitha[1], Stalin Nithaniyal[1*], Subhadarshini Satapathy[2], Kanishtha Acharya[3], Eureka Mondal[4]

[1]Department of Botany, Bishop Heber College (Autonomous), Tamil Nadu, India
[2]Biodiversity and Conservation Lab, Ambika Prasad Research Foundation, Odisha, India
[3]Department of Zoology, University College of Science, Mohanlal Sukhadia University, Rajasthan, India
[4]Department of Zoology, Rabindra Mahavidyalaya Champadanga, West Bengal, India
*Email: nithaniyal888@gmail.com

(Date of Receiving-10-01-2021; Date of Acceptance-16-04-2021)

ABSTRACT

Moringa is a medicinally important genus that has long history of traditional use as a remedy to cure wounds and various ailments such as colds, diabetes, digestive problems etc. In addition, the species is consumed as a source of nutritive food and used as vegetables worldwide. The genus consists of 13 species that have been cultivated throughout Asia and Africa for their multiple purpose use value. The current study is aimed to validate the traditional medicinal uses of *Moringa oleifera*, provide scientific insights on the phytochemistry, biological activities and thereby concluding its therapeutic potential for future prospects. Analysis of physiochemical profile showed the presence of the major important bioactive compounds (saponin, tannin, flavonoids, phenolics, and reducing sugar) that were assessed in aqueous, methanolic aqueous and acetone aqueous extracts following standard procedures. This study provides the foundation to explore the tribal medicinal use complemented with the scientific evaluation. Our study reinforce further phytochemical study with advanced technologies for future research opportunities of this species as it is an interesting plant containing commercially important active compounds that enable to determine pharmacological significance, and socio-economic potential.

Keywords: *Moringa oleifera*, Phytochemical analysis, Medicinal uses

INTRODUCTION

Moringa oleifera Lam. (Moringaceae) is a small, graceful, deciduous tree with sparse foliage, often resembling a leguminous species at a distance, especially when in flower, but it shows difference in its fruit. The tree grows to 8 m high and 60 cm. Bole crooked, often forked from near the base. Bark smooth, dark grey; slash thin, yellowish. Twigs and shoots short but densely hairy. Crown wide, open, typically umbrella shaped and usually a single stem; often deep rooted. The wood is soft that produces resin exudates (Gopalakrishnan *et al*., 2016).

Anatomical structures of *Moringa oleifera*

a) Stem: In young stem 16 - 18 collateral vascular bundles are present in a ring. Pith is large and parenchymatous. Pericycle is composed of alternate groups of fibers and parenchyma cells in young stem but it turns into a complete circular band of fibers in old stem. In old stem vascular cambium produces small amount of secondary phloem and large amount of secondary xylem, which is composed of uniseriate xylem rays, lignified thick-walled xylem fibers and roundish vessel elements (Haines, 1924; Saxena and Brahmam, 1995).

b) Root: Young root has tetrarch xylem. In old root vascular cambium is 6 - 8 layered which produces many roundish vessel elements embedded in large number of xylem parenchyma cells. Starch grains are observed in xylem parenchyma. Phellogen is 3 - 4 layered, which forms phellem of rectangular or squarish cells. Phelloderm is large and consisted of thin walled parenchymatous cells. Many of them contain tannin. Scattered groups of fibers are embedded in this region. Wall of phellem cells is suberized (Haines, 1924; Saxena and Brahmam, 1995).

c) Leaf: Lamina epidermal cells of adaxial surface are larger than cells of abaxial epidermis. Palisade cells are elongated, present in a single row and have dense tanniferous content. Stellate crystals of oxalate are observed in cells of lamina, midrib and petiole. Cell wall of epidermal cells is sinuous on abaxial side and non-sinuous on adaxial side. Leaf is hypo-stomatic with anomocytic stomata. Contiguous stomata at right angle to each other are also observed (Haines, 1924; Saxena and Brahmam, 1995).

d) Midrib: The main parts of midrib have hypodermis, cortex and a large semi - triangular collateral vascular bundle. Hypodermis is made of collenchyma and present only on abaxial side. Parenchymatous cells are observed below abaxial epidermis. Cortex is parenchymatous (Haines, 1924; Saxena and Brahmam, 1995).

Eco. Env. & Cons. 28 (1) : 2022; pp. (416-421)
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ISSN 0971–765X
DOI No.: http://doi.org/10.53550/EEC.2022.v28i01.063

A Report on Isolation of mycotoxigenic Fungus from the Larval Body Surface of Paddy Pest, Yellow Stem Borer, *Scirpophaga incertulas* (Walker) (Pyralidae : Lepidoptera)

Eureka Mondal[1]*, Gautam Chakraborty[2] and Kaushik Chakraborty[1]

[1]Department of Zoology, Raiganj University, Raiganj, Uttar Dinajpur, West Bengal, India
[2]Department of Agricultural Entomology, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, Nadia, West Bengal, India

(Received 21 May, 2021; Accepted 30 June, 2021)

ABSTRACT

Yellow stem borer,*Scirpophaga incertulas* Walker (Lepidoptera: Pyralidae) is considered as major paddy pest of global importance.For investigating the role of *S.incertulas* as mechanical vector of fungal pathogen, experiments in field condition were carried out at two different places, viz. Central Research farm, Bidhan Chandra Krishi Viswavidyalaya (BCKV), Nadia, West Bengal and Tarakeswar, Hooghly, West Bengal during two consecutive *kharif* seasons of 2018-2019.The infestation by *S.incertulas* was identified in terms of the incidence of Dead Heart (DH) produced during vegetative growth stage of paddy crop. Twenty DH sample were collected and brought to the Laboratory of Dept. of Zoology, Rabindra Mahavidyalaya, Champadanga, Hooghly, West Bengal. Then the DH stem portions were splitted meridionally, larvae of different age groups were collected and stored them within a test tube. Few drops of the suspension made from the washing of the body surface of the larvae were inoculated randomly in Petri plates containing Potato dextrose agar (PDA) media that was incubated at 26 ± 2°C for 6-7 days. One fungal isolate was obtained in pure culture. Morpho-taxonomy reveals the isolate was *Aspergillus flavus*. It is thus evicted that apart from paddy crop damage, *S.incertulas* also acts as a carrier of potent mycotoxin producing fungal pathogen *Aspergillus flavus*.

Key words *: Paddy, Fungus, Dead Heart, Mycotoxins.*

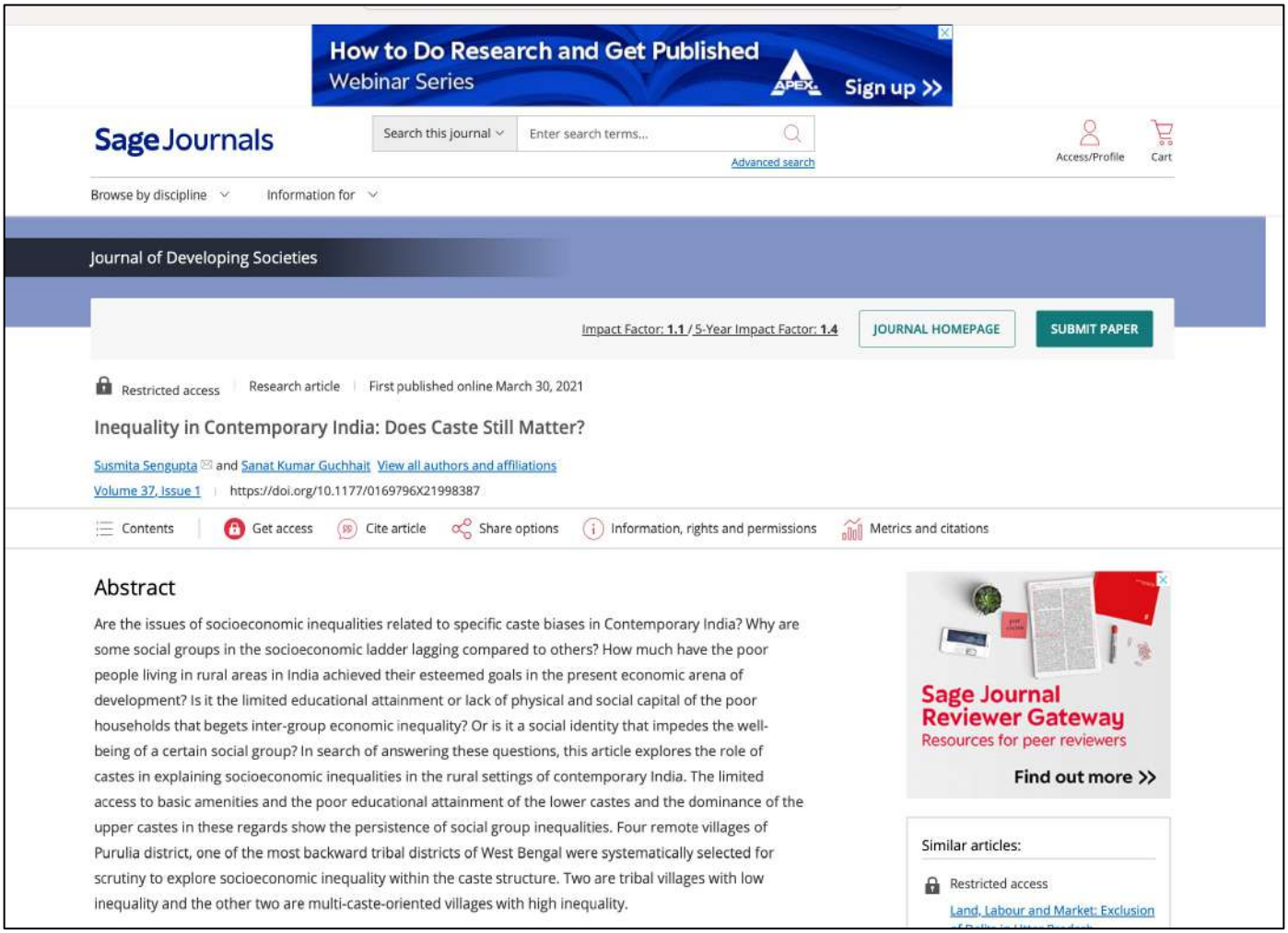
Introduction

Rice, *Oryza sativa* L.(Family: Poaceae) is regarded as the most important food crop providing half food security for the total global population (FAO, 2011) and Garris *et al.* (2005). About 2.5billion people of Asia solely depends on rice as their principal food staff and about 90% of the rice is cultivated in Asia (Khush *et al.*, 2002). 'Rice' consists of one fifth of the total world crop land that are used for cereal production (Pathak, 1994).

According to Matteson (2000), in the tropical Asian countries, low yielding of rice results from the damages by the insect pest population. Nearly 132 species of insect pests are recorded to ravage the rice fields. Out of these, about 15 to 20 insect species are very much economically important (Kalode, 2005). Among them, stem borers (SBs) are principal group of insect pests of rice (Dhaliwal *et al.*, 1996). Yellow stem borer (YSB), *Scirpophaga incertulas* Walker (Pyralidae:Lepidoptera) is considered as

***Corresponding author's email:** eurekazoology10@gmail.com

Susmita Sengupta, 2020-21



Susmita Sengupta, 2020-21

INDIAN JOURNAL OF GEOGRAPHY & ENVIRONMENT 17-18 (2021)
Indian Journal of Geograpy 17-18 (2021) 95-105
Vidyasagar University, West Bengal, India
(http://vidyasagar.ac.in/journal) **ISSN:0972-7388**

VIDYASAGAR UNIVERSITY
Dept. of Geography

Folk Medicine : Is it a Reflection of Man-Nature Relationship?

[1]Manika Saha* and [2]Susmita Sengupta

1. Assistant Professor in Geography, Asansol Girls' College, Asansol
2. Assistant Professor of Geography, Rabindra Mahavidyalaya, Champadanga, Dist. Hooghly, West Bengal, India

Article History:
Received 03 October 2019
Received in revised form 13 February 2021
Accepted 24 February 2021

Keywords:
Medicine men, ethnobotanical, folk medicine, man-nature relationship, forest resources

ABSTRACT

The present paper documents ethnomedicinal values of various wild plants and herbs by Santal forest villagers of Jaypur forest range of Bankura district, West Bengal. Traditional knowledge often restores cultural heritage and establishes the identity of a group in a particular society. The concept of folk medicine is based on the folk education system, philosophical thought, and cultural origins of society and is usually transmitted orally. This research is a detailed field survey based on interviewing Santal medical healers and a few knowledgeable aged persons in three tribal villages of Jaypur, dense with natural forest resources and populated by tribal. I have applied a semi-structured and open-ended questionnaire. Apart from qualitative techniques, some relevant quantitative approaches like Informant Consensus factor, Fidelity Level analysis, Importance value, etc., have helped to explain the intimate man-nature relationship between forest resources and Santals through medicinal use of plants. It also discusses this social group's traditional knowledge to conserve and preserve forest resources.

Introduction:

From the beginning of human civilization, primitive system. However, the ethnic minorities in rural India are characterized by geographic isolation and a strong

Paritosh Chandra Sinha, 2020-21

Theoretical and Applied Economics
Volume XXVIII (2021), No. 2(627), Summer, pp. 45-82

COVID-19 and CAPM: a tale of reference dependence with the pharma stocks' returns

Paritosh Chandra SINHA
Rabindra Mahavidyalaya, India
paritoshchandrasinha@gmail.com
Pooja AGARWAL
Burdwan University, India
poojaagarwal9413@gmail.com

Abstract. *Given the sustained attention to COVID-19, we explore if a reference dependent version of the CAPM has a good explanatory power. It views the CAPM with the prospect theory references - certainty effect, reflection effect and isolation effect. It firstly follows a linear prospect theory version of the CAPM, then, it extends that with the autoregressive distributed lag (ARDL) model, and finally, it augments them in the generalized autoregressive conditional heteroskedastic (GARCH-X) setup. It views the risk-free rate and market rate of returns as the certainty effect and reflection effect respectively while the lagged endogenous returns and the ARCH and GARCH effects as the isolation effects. With the NSE listed pharma-stocks' data during COVID-19, pre-COVID-19 and both periods together, the prospect theory references depict that investors can build up different implications of the CAPM. With certainty effect, the prospect theory version of CAPM has less explanatory power while with reflection effect, the same has good explanatory power with the sample stocks over the data sets but it does not explain the isolation effects at all. Investors may re-look into that the CAPM if calibrated with the prospect theory references at ARDL and GARCH-X augmentations, it provides better explanatory powers.*

Keywords: CAPM; the prospect theory; reference-dependence; behavioral finance; ARDL and GARCH-X augmentations.

JEL Classification: G130, G4, C580, G140.

Dr. Vivekananda Meta, 2020-21

ISSN - 2348-2397
APPROVED UGC CARE
XXS

SHODH SARITA

SHODH SARITA
Vol. 7, Issue 28, October-December, 2020
Page Nos. 1-6

AN INTERNATIONAL BILINGUAL PEER REVIEWED REFEREED RESEARCH JOURNAL

DECLINE IN THE ENROLMENT OF ECONOMICS HONOURS STUDENTS CAUSES AND ITS REMEDIAL MEASURES

Vivekananda Meta*

ABSTRACT

Economics is one of the most important subjects which is essential in every life as well as country. But, today, we see that the number of students in Economics subject is gradually decreasing year by year. But question is that what are the causes behind this? In this paper our chief concern is that the study of causes of decline in the enrolment of Economics students in the college of Burdwan University. The result of this study shows that the decline in the enrolment of economics students is influenced by the poor number of economics students in HS, short number of vacancies in SSC or other sectors, economics honours syllabus, subject combination with economics honours and other honours subject.

Keywords : Enrolment, Decline, Project

I. INTRODUCTION

Each and every country wants to go forward its economic development. It is possible when the infrastructure of a country changes with the increase in per-capita income.

The origin of this change of infrastructure and increase in per-capita income is human capital which is related to Economics. Besides this decision to purchasing commodity, decision to input utilization, market structure, determinants of factor prices, national income, consumption with respect to income, inflation and share market all are known only with the study of Economics subject.

So study of Economics is one of the most important subjects which is essential in every life as well as country. But, today, we see that the number of students in Economics subject is gradually decreasing year by year. This is the main problem in Economics department for every college.

The paper is organised as follows. Section II discusses the literature review. Section III presents the objective of the study. Section IV discusses the methodology. Section V presents the data and discussion. Section VI and VII present the remedial measure and conclusion respectively.

II. LITERATURE REVIEW

Economists in many universities are concerned about the perceived decline in the numbers of students doing economics degrees at universities. Bartlett (1995) outlined two key reasons for the decrease in the number of students in economics programmes: (1) students were less prepared in mathematics and science, and (2) students were more interested in interdisciplinary majors. Siegfried (1995, 1997) and Becker (1997) have examined the trends in the numbers of undergraduate economics degrees in the United States.

"Bachelor's degrees in economics [in the U.S.A.] dropped 22% from 1951-52 to 1953-54 and took an entire decade, until 1962-63, to recover. A milder decline of 18% from 1969-70 to 1974-75 was fully reversed by 1979-80" (Siegfried 1995, 285 and Becker 1997). During the 1980s the number of students awarded an undergraduate economics degree in the U.S.A. rose slowly, but by the 1990s the numbers were on the decline

*Assistant Professor - Department of Economics, Rabindra Mahavidyalaya, Champadanga, Hooghly, West Bengal, India

Dr. Vivekananda Meta, 2020-21

ISSN - 2229-3620
UGC CARE LISTED JOURNAL
SHODH SANCHAR Bulletin
January-March, 2021
Vol. 11, Issue 41
Page Nos. 125-130
AN INTERNATIONAL BILINGUAL PEER REVIEWED REFEREED RESEARCH JOURNAL

SANITATION AS INDICATOR OF DEVELOPMENT: A REVIEW DURING COVID-19 OUTBREAK

Vivekananda Meta*

ABSTRACT

The primary objective of this paper is to measure of sanitation facility as indicator of development for Champadanga Gram Panchayet of Hooghly district in West Bengal. Sanitation is one of the most important social determinants of health. It is not only an absence of garbage and waste materials strewn around but also access to toilet facility, safe drinking water and connectivity to a drainage system. Again, side by side the new disease COVID-19 has spread in the whole world. In the rural India, these problems are seen. To develop the rural areas, management of programs of the Government is a very vital factor. In the present case study, Sahachack village has been taken for study of sanitation practices being implemented and recommendations or suggestions made thereafter. Moreover, to prevent COVID-19 it is needed to change the life style of the people in recent times.

Keywords: *Sanitation, environment, literacy, COVID-19*

I. INTRODUCTION

In order to measure a development index we have considered three dimensions – knowledge, living condition and health. We have considered literacy rate as development indicator under knowledge dimension. The indicator of living dimension are cement roofed house, exclusive room, access to electricity for lighting and use of gas for cooking etc. Health dimension includes to access of improved sanitation. At present the new disease COVID-19 has spread in the whole world. Though in India the spreading of COVID-19 has decreased, in three states namely Maharashtra, Kerala and Panjab this disease is gradually increasing again. This disease is mainly spread through close contact of people, often via small droplets produced during coughing sneezing or taking. It is also stay on the surface. The surfaces infected with viruses are fomites and provide the indirect route of transmission. So in this situation, cleanness environment must be necessary for good health. Only man can make the society healthy and strong. As financial development is needed for the betterment of human life style, so purified drinking water, toilet and moreover clean and tidy atmosphere are needed. For these benefits, man becomes healthy. But for the lack of these benefits a lot of men die due to water born disease, work days are wasted, poverty increase. In a word a bad effect falls totally on environment. That is why in this paper we attempt to find out the different factors or programmes for sanitation that help to development of a country.

The paper is organised as follows. Section II discusses the literature review. Section III presents the objective of the study. Section IV discusses the methodology. Section V presents the data and discussion. Section VI and VII present the remedial measure and conclusion respectively.

*Assistant Professor - Department of Economics, Rabindra Mahavidyalaya, Champadanga, Hooghly, 712401, West Bengal, India.

Paritosh Chandra Sinha, 2020-21

Business Spectrum (ISSN: 2249-4804) Volume XI, No I January-June 2021
An Open Access Fully Referred Peer Reviewed Journal (Online): IAA (South Bengal Branch)
www.iaasouthbengalbranch.org

Does Prospect Theory Non-Linearity Explain Mental Accounting? A Study at COVID-19

Dr. Paritosh Chandra Sinha [1]

Assistant Professor in Commerce,
Rabindra Mahavidyalaya, Hooghly, W.B., India.

Miss. Pooja Agarwal [2]

Research Scholar, Department of Commerce, B.U.
W.B., India.

Abstract

In examining how investors in the stock markets make many decisions in their minds at once, this study has empirically explored the proposition of possible assimilation of the prospect theory (PT) and the theory of mental accounting (MA) at the use of investors' multiple decisions references. In such pursuit, it has examined the non-linearity property in the PT value function and accordingly it has applied the same at the presence of positive and negative effects for investors' multiple decision references at once. Nonetheless, in the empirical literature of behavioral finance, it has ingeniously used the empirical methodology of the non-linear auto-regressive distributive/ dynamic lag (NARDL) model with the use of three separate data sets covering the pre-COVID-19 period from August 2019 to February 2020, that during COVID-19 period from March 2020 to September 2020 and that covering both altogether, that is, from August 2019 to September 2020. The observed results are all promising to put forth the proposed PT/MA assimilation proposition across the sample stocks over the different sample-data periods as well. The study finally identifies the applicative values of the proposed PT/MA assimilation.

Keywords: *Prospect Theory, Non-linear Value Function, Mental Accounting, Assimilation of PT/MA, NARDL Model, Behavioral Finance.*

[1] Corresponding Author & Research Supervisor, Assistant Professor in Commerce, Rabindra Mahavidyalaya, P.O.: Champadanga, Dist: Hooghly, W.B., India, PIN – 712401. Mb. (0091) 6296300422;
Email: paritoshchandrasinha@gmail.com

[2] Doctoral Research Scholar, Department of Commerce, University of Burdwan, P.O.: Rajbati, Dist – Burdwan, W.B., India. PIN – 713104. Mob. (0091) 7003775845; Email: poojaagarwal9413@gmail.com

A Scientometric Sketch on the Paper Informetrics & Scientometric of e-PG Pathshala Portal

Partha Chattopadhyay, Librarian
Hiralal Bhakat College, Nalhati, Birbhum, chattopadhyaypartha224@gmail.com

Bikash Kumar Halder, Librarian
Rabindra Mahavidyalaya, Champadanga, Hooghly, bkh.bikash@gmail.com

Bikash Halder, 2020-21

A Scientometric Sketch on the Paper Informetrics & Scientometric of e-PG Pathshala Portal

Partha Chattopadhyay, Librarian, Hiralal Bhakat College, Nalhati, Birbhum

Bikash Kumar Halder, Librarian, Rabindra Mahavidyalaya, Champadanga, Hooghly

Abstract:- The portal of e-PG Pathshala is an authentic source of study of e-resources in different academic subjects including the academic subject Library & Information Science. The all papers which are being taught in the courses of Library & Information Science is given here in detail. Through this article regarding the paper " Informetrics & Scientometrics" of the Broad subject Library & Information Science covering all aspects is depicted here for the convenience and more awareness for students, teachers, LIS professionals and other interested persons.

Keywords:- Scientometrics, e PG Pathshala, INFLIBNET, e-resources, References

Introduction:- The subject Library & Information Science is one of the most important subjects in Social Science area. In India there are many universities where this subject is being taught as a branch of Social Science. The history of studying this subject has crossed the glorious 100 years in the year 2010. But it is unfortunate to say that till now this subject is not being considered for the study at the under graduate level like other academic subjects in that sense. However, the University Grants Commission (UGC) and the Information & Library Network (INFLIBNET) jointly had taken a good initiative a few years back for preparing various electronic text materials in various subjects under the name "e PG Pathshala". Under this project, the Subject Library & Information Science is also enlisted. The course materials available under this project is good and authentic in nature because the eminent personalities of different background of the subject Library & Information Science are involved to prepare the materials which will be helpful for the students, teachers and other professionals also. Actually, this project was prepared to provide a single platform for distribution of quality materials for the students of post graduate levels in the different universities in various academic subjects in India.

Naturally, the syllabus of NET/SET examination is prepared based upon the syllabus of the Post graduate level of study of the Indian Universities. So, these materials may be a great help for the preparation of various competitive examinations also.

Last year we all faced the pandemic situation due to sudden outbreak of Corona virus. In such a situation, these materials may be a great help as because these materials are available over the online mode, easily downloaded and available free of cost.

There are many papers which are given in this portal and under a paper a good number of modules are also given to cover the particular paper thoroughly. There are many papers in the subject Library & Information Science. One of such paper is Informetrics & Scientometrics which deals with mainly the measurement of information. This particular paper is presently being taught in the Post graduate level being chosen by some students in the different Indian universities. Not only that, this particular paper deals with some touch of mathematical

Fractional Differential Calculus
Volume 10, Number 1 (2020), 109–128
doi:10.7153/fdc-2020-10-07

STUDY OF A DISCRETIZED FRACTIONAL–ORDER ECO–EPIDEMIOLOGICAL MODEL WITH PREY INFECTION

SHUVOJIT MONDAL, XIANBING CAO AND NANDADULAL BAIRAGI*

(*Communicated by M. Al-Refai*)

Abstract. In this paper, an attempt is made to understand the dynamics of a three-dimensional discrete fractional-order eco-epidemiological model with Holling type II functional response. We first discretize a fractional-order predator-prey-parasite system with piecewise constant arguments and then explore the system dynamics. Analytical conditions for the local stability of different fixed points have been determined using the Jury criterion. Several examples are given to substantiate the analytical results. Our analysis shows that stability of the discrete fractional order system strongly depends on the step-size and the fractional order. More specifically, the critical value of the step-size, where the switching of stability occurs, decreases as the order of the fractional derivative decreases. Simulation results explore that the discrete fractional-order system may also exhibit complex dynamics, like chaos, for higher step-size.

1. Introduction

The idea of fractional calculus has been known since the notion of fractional derivative was firstly introduced by Leibniz in a letter dated 30th September, 1695, where half-order derivative was mentioned. Since then it was subsequently developed by Euler, Lagrange, Laplace, Fourier, Abel, Liouville, Riemann, Heaviside, Caputo along with many others [1]. Generally, fractional calculus deals with the study of fractional order integral and derivative operators over real or complex domains and their applications [2]. Specifically, it is a generalization of classical differential and integral calculus of integer order to arbitrary order. In recent times, fractional order derivatives and fractional order differential equations have been applied in several fields of science and engineering [3, 4, 5, 6, 7, 8, 9, 10], however, initially it was treated as a topic of interest of pure mathematicians only [11]. The reason is two-fold. First, fractional derivatives have an additional degree of freedom over its integer order counterpart due to the additional parameter that represents its order and more suitable for those systems having higher order dynamics and complex nonlinear phenomena [12, 13]. Secondly

Mathematics subject classification (2010): 34A08, 26A33, 34K37, 44A20.
Keywords and phrases: Fractional order differential equation, ecological model, discrete fractional-order system, local stability, bifurcation, chaos.
A part of this work was done at BTBU, Beijing, China when NB visited this university in February-March, 2019.
We acknowledge the helpful suggestions and comments of the reviewers in improving the earlier version of this manuscript.
* Corresponding author.

Paper FDC-10-07

Dr. Jayita Saha, 2020

Genomics 112 (2020) 4125–4136

Contents lists available at ScienceDirect

Genomics

journal homepage: www.elsevier.com/locate/ygeno

Identification and characterization of differentially expressed genes in the rice root following exogenous application of spermidine during salt stress

Jayita Saha[a,b,c,*], Kalyan Giri[b], Sudipta Roy[c,*]

[a] Department of Botany, Rabindra Mahavidyalaya, Champadanga, Hooghly, West Bengal, India
[b] Department of Life Sciences, Presidency University, 86/1 College Street, Kolkata 700073, India
[c] Department of Botany, University of Kalyani, Kalyani, Nadia, West Bengal, India

ARTICLE INFO

Keywords:
Differentially expressed genes
Indica rice
Real-time PCR
Salt stress
Spermidine
Suppression subtractive hybridization

ABSTRACT

Salinity is a major limiting factor in crop production. Exogenous spermidine (spd) effectively ameliorates salt injury, though the underlying molecular mechanism is poorly understood. We have used a suppression subtractive hybridization method to construct a cDNA library that has identified up-regulated genes from rice root under the treatment of spd and salt. Total 175 high-quality ESTs of about 100–500 bp in length with an average size of 200 bp are isolated, clustered and assembled into a collection of 62 unigenes. Gene ontology analysis using the KEGG pathway annotation database has classified the unigenes into 5 main functional categories and 13 subcategories. The transcripts abundance has been validated using Real-Time PCR. We have observed seven different types of post-translational modifications in the DEPs. 44 transmembrane helixes are predicted in 6 DEPs. This above information can be used as first-hand data for dissecting the administrative role of spd during salinity.

1. Introduction

Rapid increase of the world population by every passing year necessitates a gradual increase in the production of food crops [1]. However, abiotic stress, such as salinity, drought, heat and cold, jeopardize crop production and resulted in significant yield loss worldwide [2–3]. Soil salinity is resulted mainly from gradual global climate changes and poor irrigation practices and is considered as one of the major environmental stress to limit crop productivity. Rice (*Oryza sativa* L.) has been used as the fundamental resource of food crops by a considerable portion of the earth's human population. Rice plants came across the most frequent abiotic stress factor, salt stress that reduced its productivity worldwide [4]. Salt stress resulted in excess accumulation of Na^+ and Cl^- inside the cell that led to osmotic and ionic imbalance and ultimately restricted plant growth and development [5–6]. Plants have acquired many adaptive strategies by modulating a complex network of genes to alter physiological and biochemical responses under the exposure of salt stress that renders salt tolerance [7–8].

Intracellular and exogenously present polyamines (PAs) have ubiquitously been reported to act as a weapon to combat much stress by modifying a wide range of physiological and biochemical processes like stomatal movement, photosynthesis, cell division, growth and development, ion and ROS balance, hormone production, osmoregulation, etc. [9–11]. Previous reports have, directly or indirectly, proved in many ways the intricate relationships between the PAs and salt stress in the context of ROS homeostasis [12]. Our previous work showed that exogenous spermidine (spd) in the presence or absence of salt stress fine-tuned intracellular PA pathways to maintain cellular PA homeostasis that would have been attributed to plant salt tolerance [13].

Suppression subtractive hybridization (SSH) is a productive approach that effectively identifies and clones differentially expressed genes (DEGs) [14]. This technique facilitates the identification of abundant DEGs with some rare novel genes [15–16]. In the past, SSH has been used extensively to identify DEGs in a wide range of plant species. Previous SSH studies successfully identified some fertility-related genes in male-sterile wheat, microsporocyte specific genes in rice, low-temperature stress-induced genes in maize, drought-regulated genes in mulberry (*Morus* sp.), Endosperm transcripts and heat stress-regulated genes in wheat [17–21]. These all reports influenced us to adopt the SSH technique as a powerful tool to identify our gene of interest in the rice root tissue during salt stress in the presence of exogenous spd.

In this work, we have used an approach of combining suppression subtractive hybridization (SSH) and RT-PCR technologies to identify differentially expressed genes (DEGs) during salt stress in presence of exogenous spd on a large scale from root tissue of salt-sensitive rice

* Corresponding authors at: Department of Botany, Rabindra Mahavidyalaya, Champadanga, Hooghly, West Bengal, India.
E-mail addresses: jayita@gmail.com (J. Saha), kalyan.dbs@presiuniv.ac.in (K. Giri), drsudiptaroy@gmail.com (S. Roy).

https://doi.org/10.1016/j.ygeno.2020.07.011
Received 19 January 2019; Received in revised form 26 December 2019; Accepted 2 July 2020
Available online 07 July 2020

Link to website of the Journal: https://www.sciencedirect.com/journal/genomics

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Journal of Alloys and Compounds
Volume 863, 15 May 2021, 158485

Effects of transitional hysteresis on the large magnetocaloric and magnetoresistance properties of Ni-Mn-Co-Sn Heusler alloy

T. Chabri [a], A. Barman [a], S. Chatterjee [a], S.A. Mollick [a], T.K. Nath [b], D. Mukherjee [a]

https://doi.org/10.1016/j.jallcom.2020.158485

Highlights

- Role of thermal and magnetic hystereses on magnetocaloric effect and magnetoresistance near room temperature.
- Dependence of magnetoresistance on magnetic field induced austenite phase.
- Variation of austenite and martensite phase fractions with temperature and magnetic field.
- Large isothermal entropy change, refrigeration capacity and adiabatic temperature change near room temperature.

Abstract

Ni-Mn-Co-Sn based Heusler alloys have drawn immense attention lately due to their significant magnetocaloric (MC) and magnetoresistance (MR) properties near their first-order magneto-structural martensite transformation (MT). Here, we have studied the influence of thermal and magnetic hysteretic behaviours in the temperature and field dependent magnetization and resistivity in $Ni_{45}Mn_{39}Co_5Sn_{11}$ bulk Heusler alloy across the MT regime. This is critical since hysteresis losses could significantly compromise the MC and MR properties in these compounds in practical applications. Isothermal X-ray diffraction measurements at different temperatures reveal that the MT temperature is near room temperature in $Ni_{45}Mn_{39}Co_5Sn_{11}$ alloy. Thermodynamic analyses of isothermal field dependent magnetization data result in large isothermal magnetic entropy changes (ΔS = 17–18 J kg^{-1} K^{-1}) under a field change (ΔH = 8 T) at 364 K across the MT regime. The calculated refrigeration capacity values (RC = 173–179 J kg^{-1}) for decreasing and increasing fields are significant and independent of magnetic hysteresis across the MT regime. A large adiabatic temperature change ($|\Delta T|$ = 10.4 K for ΔH

Dr Subrata Roy, 2019-20

Pacific Business Review International
Volume 12 Issue 1, July 2019

Performance Appraisal of Sustainable Responsible & Conventional Indices

Dr. Subrata Roy
Assistant Professor
Department of Commerce,
Rabindra Mahavidyalaya
(Affiliated to the University of Burdwan),
Champadanga, Hooghly,
West Bengal, India

Abstract

Purpose: The study examines and compares the performance characteristics and performance differences of selected SRI (Sustainable Responsible Index) and conventional indices.

Method: The study uses risk-adjusted performance measures of Sharpe and Treynor. Jensen measure is also used to examine the relative risk-adjusted performance. The market-timing performance is measured by applying the Treynor & Mazuy model. The study also used single factor as well as seemingly unrelated regression equations. Spanning test is applied to test the joint hypothesis.

Findings: The risk-adjusted performances of majority of the indices are satisfactory as compared to the benchmark indices. The market-timing performances of the SRI indices are insignificant. The alpha performances of the SRI indices are same like the benchmark indices. But the risk exposures of the SRI indices are higher than their counterparts. Although, the performances between the SRI and the benchmark indices are same based on spanning test. According to the multi-factor measure, the performances of the SRI indices are different in some extent. Similarly, when world index is used as benchmark then the performance of the group of indices differs significantly within the index families.

Originality: It is observed that the performances of the SRI indices are almost same in terms of risks and returns. When multi-factor measure is used then the performance differences is observed in some cases. But

Article Full-text available

Research Journal of Agricultural Sciences An Understanding of Fungal Diversity of Cereal and Oil Seed Crops Particularly in Coastal Region Composed to Indo-Gangetic Areas and their Eco-friendly Management

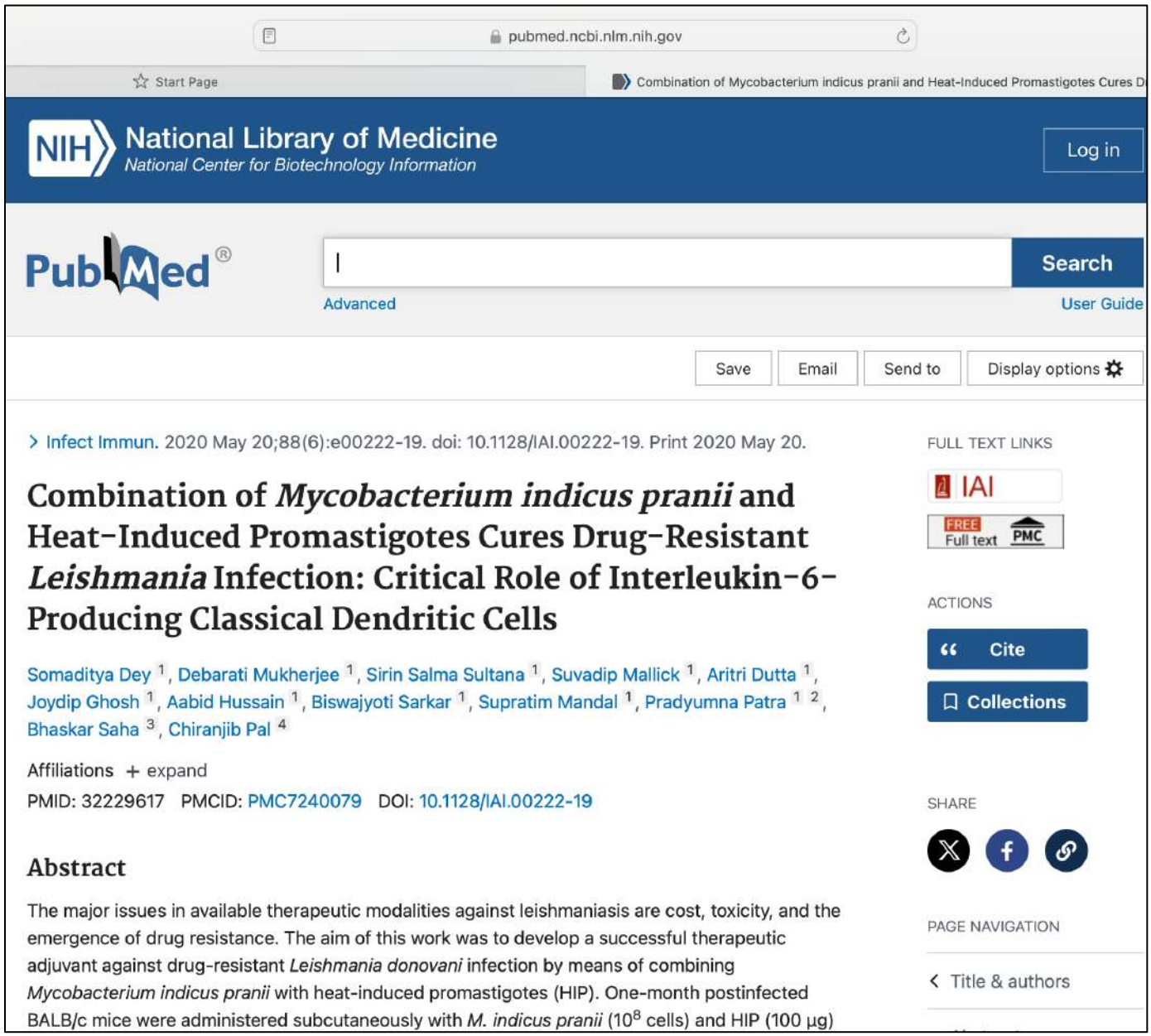
March 2020

Tanmay Ghosh · Joydip Ghosh · Maitreyee Mondal · Subhasree Roy

Abstract and figures

This study deals with the isolation of fungal communities and comparison seed borne mycoflora between Coastal zone seeds (Digha; West Bengal) and Indo-gangetic areas (Burdwan, Hooghly, Howrah; West Bengal) and to identify and classify them by standard blotter method and agar plate technique. Coastal areas seed samples were collected from the sea side of Bay of Bengal, Digha, West Bengal and the Indo-gangetic areas seed samples were collected from Burdwan, Hooghly, Howrah; West Bengal. The seeds were stored in sterile screw cap bottles for further analysis. Phenotypic and genotypic characterization of fungal isolates were done using above tow methods. Six fungal genera including Aspergillus sp., Penicillium sp., Rhizopus sp., Mucor sp., Alternaria sp., Macrophomina sp. Of them Aspergillus sp. and Alternaria sp. are the most frequent members. It was found that the rate of germination of coastal zone seeds were more than the rate of germination of Indo-gangetic zones seeds. Whereas the fungal community of coastal areas were appeared more frequent

Joydip Ghosh, 2019-20



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> Infect Immun. 2020 May 20;88(6):e00222-19. doi: 10.1128/IAI.00222-19. Print 2020 May 20.

Combination of *Mycobacterium indicus pranii* and Heat-Induced Promastigotes Cures Drug-Resistant *Leishmania* Infection: Critical Role of Interleukin-6-Producing Classical Dendritic Cells

Somaditya Dey [1], Debarati Mukherjee [1], Sirin Salma Sultana [1], Suvadip Mallick [1], Aritri Dutta [1], Joydip Ghosh [1], Aabid Hussain [1], Biswajyoti Sarkar [1], Supratim Mandal [1], Pradyumna Patra [1 2], Bhaskar Saha [3], Chiranjib Pal [4]

Affiliations + expand

PMID: 32229617 PMCID: PMC7240079 DOI: 10.1128/IAI.00222-19

Abstract

The major issues in available therapeutic modalities against leishmaniasis are cost, toxicity, and the emergence of drug resistance. The aim of this work was to develop a successful therapeutic adjuvant against drug-resistant *Leishmania donovani* infection by means of combining *Mycobacterium indicus pranii* with heat-induced promastigotes (HIP). One-month postinfected BALB/c mice were administered subcutaneously with *M. indicus pranii* (10^8 cells) and HIP (100 µg)

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Dr. Shelly Sinha, 2019-20

PHYTOTAXONOMY Vol. 19, 2019, pp. 01-00
Dr. S.K. Jain Commemoration Volume
ISSN : 0972-4206
Date of Publication : October - 2021

Insights into the cytological diversity within different members of Bryophytes; an overview

Anjana Singh*, Shelly Sinha* and P.L. Uniyal
*Contributed equally to this work: Anjana Singh & Shelly Sinha
Current address: Department of Botany, Deshbandhu College , University of Delhi, Kalkaji, New Delhi- 110019, India
Current address: Department of Botany, Rabindra Mahavidyalaya, Champadanga, Hooghly, West Bengal, 712401, India
Corresponding author. Current address: Department of Botany, University of Delhi, Delhi-110007, India

Bryophytes are non-vascular cryptogams, cosmopolitan in occurrence and consist of long lived gametophytes with small sporophytic generation. It is well noted that studies have been done for chromosome number of all three bryophyte monophyletic groups but in scattered groups. The chromosome counts from different families of liverworts, hornworts and mosses have been documented separately. The occurrence of polyploidy is still debated in each lineage of bryophytes. In the present article, a review has been done with an objective to gain cytological information within different group of Bryophytes and to comprehend the overall information regarding the diversity of chromosome counts, presence of m chromosomes and occurrence of polyploidy.

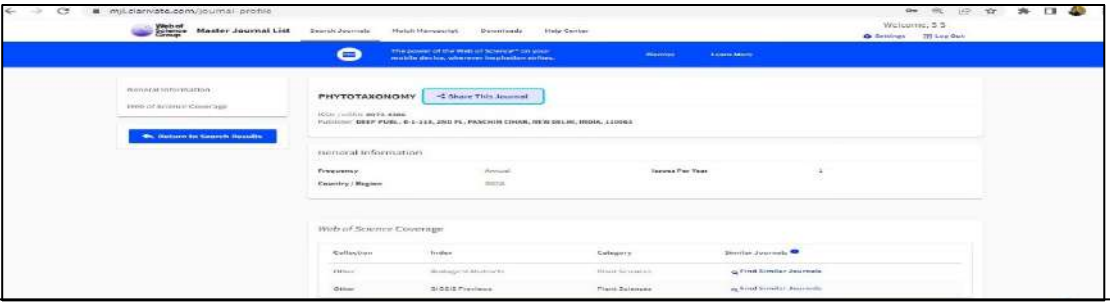
Key Words: Bryophytes; liverworts; hornworts; mosses; cytology; chromosome number; polyploidy; m chromosomes.

Introduction

Bryophytes are non-vascular, small sized cryptogams of the 'Plant Kingdom' and second species rich group of green plants next to angiosperms (Renzalia *et al*, 2007). These plants are reflected as an ancient group of plants that seem to be associated with protracheophytes and tracheophytes. They are either thalloid or have rhizoids, shoots and unistratose leaves and internal tissue is poorly differentiated. However, they succeeded as a fascinating element with ubiquitous distributions and signifying biodiversity in almost all climatic conditions. Under some ecological conditions, these plants encompass the dominant components of the vegetation (Makinde and Fajuke 2009). Their life cycle consist of a functional dominant free living haploid phase called gametophyte and a moderately dependent short-lived diploid phase as sporophyte.

Bryophytes consists of more than 20,000 species with 10,000-14,000 mosses, 5000 liverworts and 215 hornworts (Goffinet and Shaw 2009, Soderstrom 2016). They collectively represent three different groups (phyla), viz., Bryophyta (mosses), Marchantiophyta (liverworts) and Anthocerotophyta (hornworts). However, they are no longer considered to form a monophyletic group and instead are recognised as three distinct paraphyletic lineages (Shaw and Renzaglia 2004). Indeed, with increasing amounts of both molecular sequence and structural data, several studies suggest that liverworts are sister to all other land plants followed by mosses, and with hornworts sister to all vascular plants, tracheophytes (Qin *et al*, 2006; Qin 2008).

Bryophytes contribute a major role in soil management, formation of fertile substrata for other plants, and are an important component of ecosystems (Bansal and Srivastava, 2017). The flavonoids and terpenoids contained in majority of them show various biological activities with considerable potential of chemical and pharmaceutical properties (Ludwiczuk and Asakawa, 2019). Due to their varied morphological, physiological, genetic and cytological characteristics, bryophytes can be used as simple model systems for studying the evolution of the more complex features in higher plants (Bremann *et al*, 2009). Nevertheless, studies based on other sources (e.g., sperm cell morphology) suggest alternative relationships and more data are clearly needed to fully resolve the branching order (Mishler and Kelch 2008). Unfortunately, there is not a great wealth of genome size data in the bryophytes despite their key evolutionary position at the base



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Shuvojit Mondal, 2019-20

Fractional Differential Calculus
Volume 9, Number 1 (2019), 149–161
doi:10.7153/fdc-2019-09-11

GLOBAL STABILITY OF A LESLIE–GOWER–TYPE FRACTIONAL ORDER TRITROPHIC FOOD CHAIN MODEL

SHUVOJIT MONDAL, NANDADULAL BAIRAGI AND GASTON M. N'GUEREKATA*

(*Communicated by M. Kirane*)

Abstract. Recently, the dynamical behaviors of a fractional order three species food chain model was studied by Alidousti and Ghahfarokhi (*Nonlinear Dynamics, doi: org/10.1007/s11071-018-4663-6, 2018*). They proved both the local and global asymptotic stability of all equilibrium points except the interior one. This work extends their work and gives proof of both the local and global stability analysis of the interior equilibrium point. Numerical examples are also provided to substantiate the analytical findings.

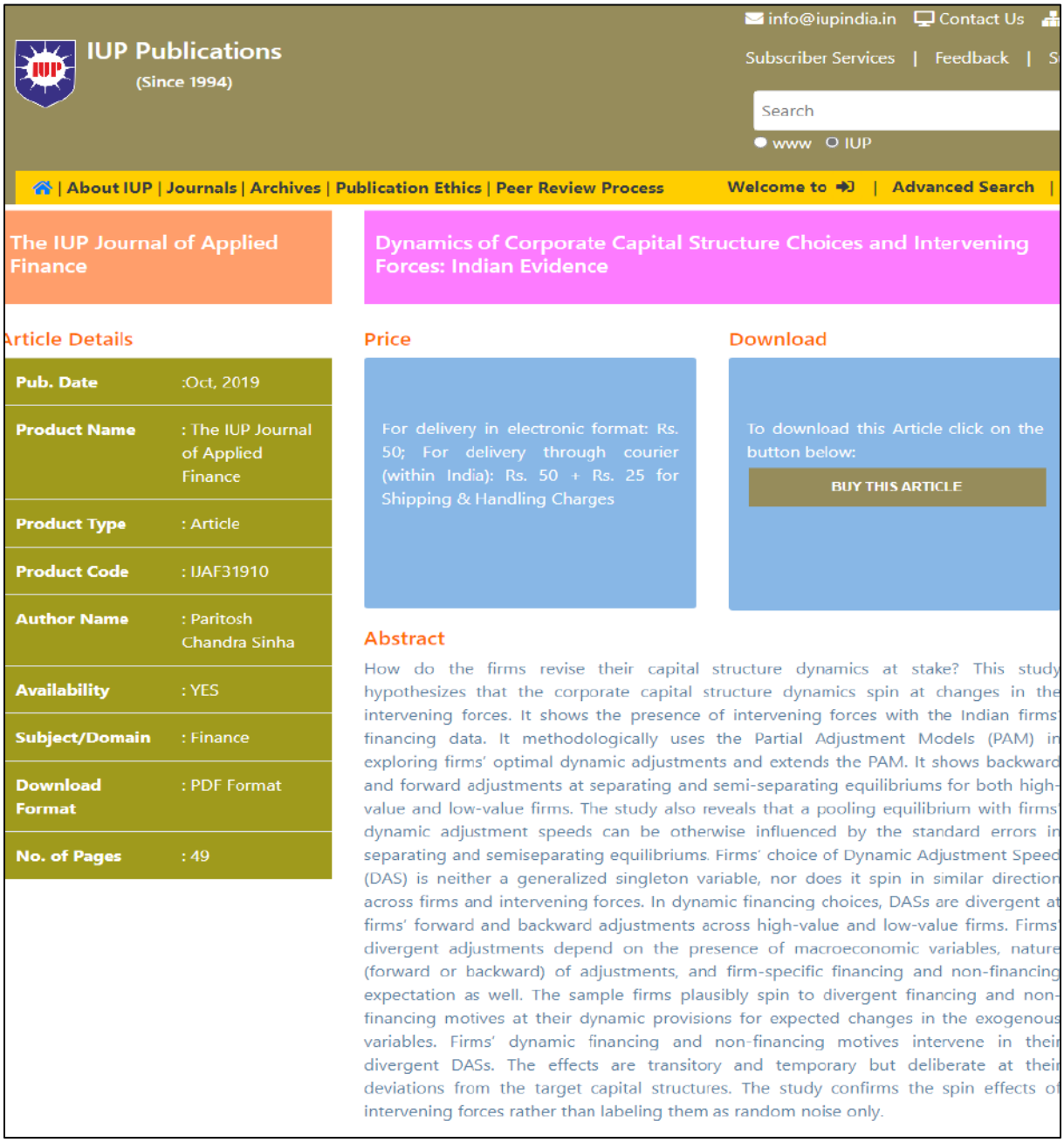
1. Introduction

Fractional calculus is a generalization of classical differential and integral calculus of integer order to arbitrary order. The notion of fractional derivative was first introduced by Leibnitz in 1695 and subsequently developed by Liouville, Heaviside, Caputo, Riemann. along with many others [1]. Initially, fractional order derivatives and fractional order differential equations were treated as a topic of interest of pure mathematicians [2], but later on it found its own way of application in different fields of science and engineering mainly for two reasons. First, fractional order derivatives not only depends on the local conditions but also on the previous history of the function [3]. Therefore, fractional derivatives became an efficient tool where consideration of memory or hereditary properties of the function is essential to represent the system, e.g., in case of biological systems. Secondly, fractional derivatives has an additional degree of freedom over its integer order counterpart due to the additional parameter that represents its order, and therefore more suitable for those systems having higher order dynamics and complex nonlinear phenomena [4, 5]. In the last two decades, fractional order calculus has been extensively used in several branches of science & engineering and the number is huge. For brevity, we here mention only some review papers and books [6, 7, 8, 9, 10]. Fractional order models have also been used to understand the dynamics of interacting populations [11, 12, 13, 14, 15, 16, 17, 18].

Mathematics subject classification (2010): 34A08, 26A33, 34K37, 44AXX.
Keywords and phrases: Fractional order differential equation, ecological model, local and global stability, bifurcation, chaos, periodic solution.
Research of NB is supported by JU-RUSA 2.0.
*Corresponding author.

Paper FDC-09-11

Paritosh Chandra Sinha, 2019-20



The IUP Journal of Applied Finance

Dynamics of Corporate Capital Structure Choices and Intervening Forces: Indian Evidence

Article Details

Pub. Date	:Oct, 2019
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Product Code	: IJAF31910
Author Name	: Paritosh Chandra Sinha
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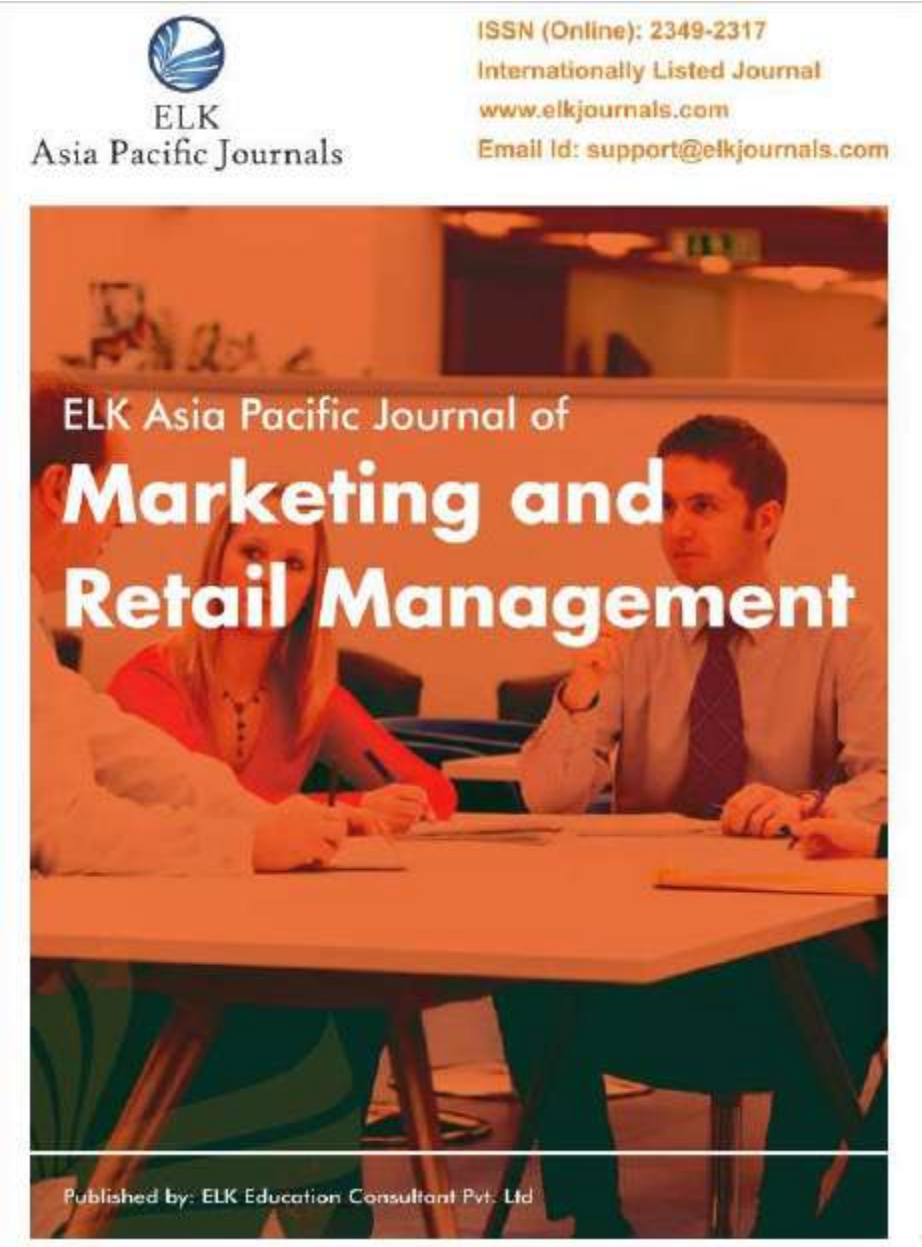
Abstract

How do the firms revise their capital structure dynamics at stake? This study hypothesizes that the corporate capital structure dynamics spin at changes in the intervening forces. It shows the presence of intervening forces with the Indian firms' financing data. It methodologically uses the Partial Adjustment Models (PAM) in exploring firms' optimal dynamic adjustments and extends the PAM. It shows backward and forward adjustments at separating and semi-separating equilibriums for both high-value and low-value firms. The study also reveals that a pooling equilibrium with firms' dynamic adjustment speeds can be otherwise influenced by the standard errors in separating and semiseparating equilibriums. Firms' choice of Dynamic Adjustment Speed (DAS) is neither a generalized singleton variable, nor does it spin in similar direction across firms and intervening forces. In dynamic financing choices, DASs are divergent at firms' forward and backward adjustments across high-value and low-value firms. Firms' divergent adjustments depend on the presence of macroeconomic variables, nature (forward or backward) of adjustments, and firm-specific financing and non-financing expectation as well. The sample firms plausibly spin to divergent financing and non-financing motives at their dynamic provisions for expected changes in the exogenous variables. Firms' dynamic financing and non-financing motives intervene in their divergent DASs. The effects are transitory and temporary but deliberate at their deviations from the target capital structures. The study confirms the spin effects of intervening forces rather than labeling them as random noise only.

Paritosh Chandra Sinha, 2019-20



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Dr. Safiul Alam Mallick, 2019-20

Journal of Magnetism and Magnetic Materials
Volume 498, 15 March 2020, 166198

Research articles

Growth angle-dependent evolution of morphology and magnetic properties of Co films on highly ordered self-organized Ge substrates

Safiul Alam Mollick [a b], Ranveer Singh [b], Biswarup Satpati [c], Satyaranjan Bhattacharyya [c], Tapobrata Som [b d]

https://doi.org/10.1016/j.jmmm.2019.166198

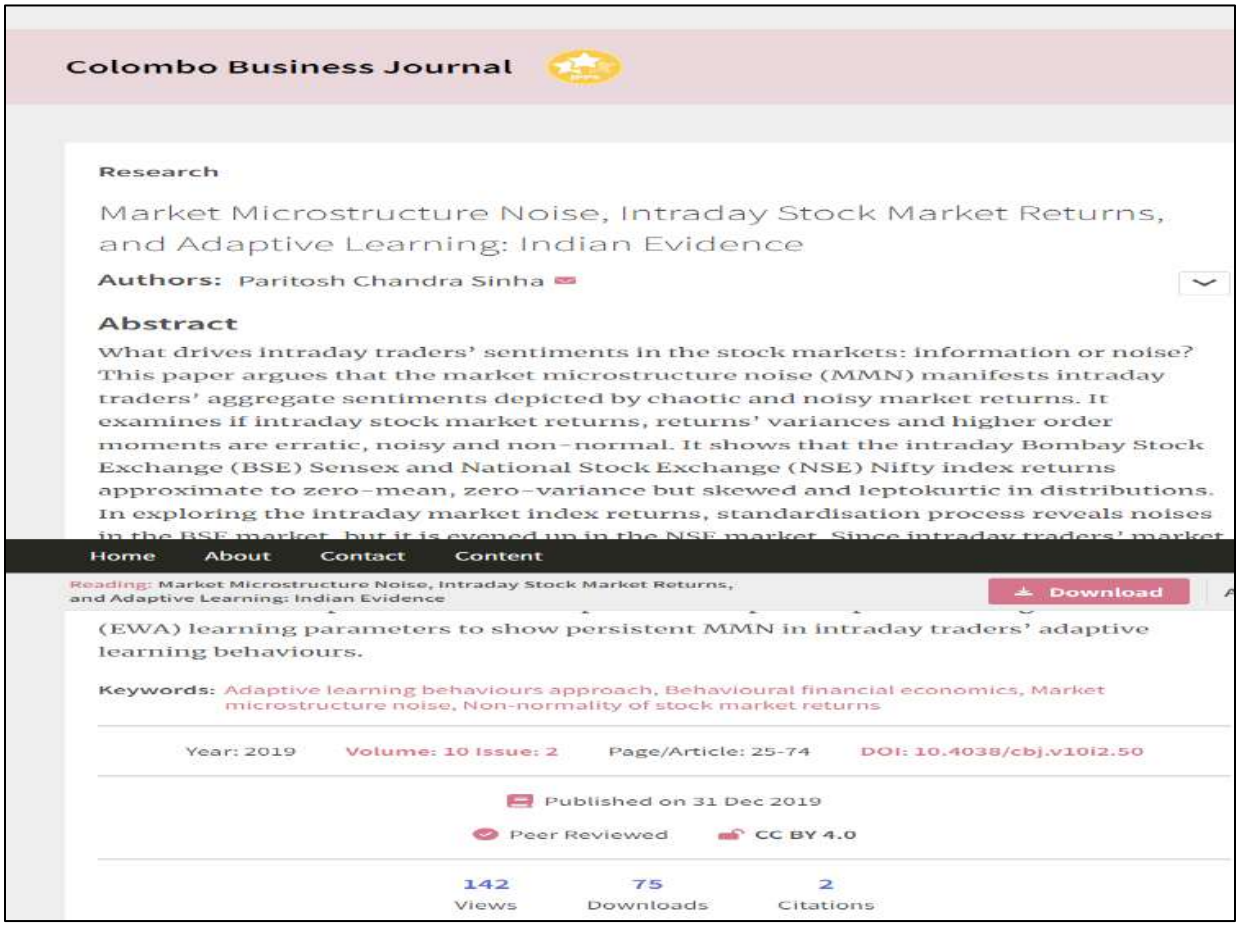
Highlights

- Io-beam induced fabrication of nanowire-like patterns on Ge.
- Growth angle dependent anisotropic morphology and magnetic properties of cobalt.
- Tuning of Co film thickness and coercive field with growth angle.
- Magnetic pinning at grain boundaries reduces coercivity at higher growth angle.

Abstract

This paper reports on the influence of growth angle on morphology and uniaxial magnetic anisotropy of 60 nm-thick sputter-deposited cobalt films on patterned-Ge substrates (having nanowire-like morphology with extreme regularity) prepared by keV-ion bombardment at room temperature. Morphological studies reveal that grain size in Co films increases with increasing growth angle, albeit lateral spacing among the ridges of conformally grown Co films (under growth angles in the range of 0–70°) on patterned-Ge substrates match quite well with that of a patterned-Ge substrate. While an increase in the Co grain size is expected to cause higher coercive fields, in the presence of magnetic pinning and slopes between ridges and grooves of nanowire-like patterned Co morphology, we observe an inverse trend. In other words, an increase in the grain size in conjunction with respective evolution of microstructures in Co films, at higher growth angles, lead to a decrease in the coercive field. Magnetic force microscopy is employed to probe the out-of-plane domains in ferromagnetic Co films. Tailored design of these novel nanostructured Co layers will be of interest for fabrication of high-density magnetic data storage devices, magneto-transport phenomena, and magneto-plasmonics.

Paritosh Chandra Sinha, 2019-20



Colombo Business Journal

Research

Market Microstructure Noise, Intraday Stock Market Returns, and Adaptive Learning: Indian Evidence

Authors: Paritosh Chandra Sinha

Abstract

What drives intraday traders' sentiments in the stock markets: information or noise? This paper argues that the market microstructure noise (MMN) manifests intraday traders' aggregate sentiments depicted by chaotic and noisy market returns. It examines if intraday stock market returns, returns' variances and higher order moments are erratic, noisy and non-normal. It shows that the intraday Bombay Stock Exchange (BSE) Sensex and National Stock Exchange (NSE) Nifty index returns approximate to zero-mean, zero-variance but skewed and leptokurtic in distributions. In exploring the intraday market index returns, standardisation process reveals noises in the BSE market, but it is evened up in the NSE market. Since intraday traders' market

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Reading: Market Microstructure Noise, Intraday Stock Market Returns, and Adaptive Learning: Indian Evidence

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(EWA) learning parameters to show persistent MMN in intraday traders' adaptive learning behaviours.

Keywords: Adaptive learning behaviours approach, Behavioural financial economics, Market microstructure noise, Non-normality of stock market returns

Year: 2019 Volume: 10 Issue: 2 Page/Article: 25-74 DOI: 10.4038/cbj.v10i2.50

Published on 31 Dec 2019

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Dalton Transactions

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Cite this: Dalton Trans., 2018, 47, 11563

A dual response fluorescent sensor for HNO and S^{2-} ions using a Cu(II) complex based probe assisted by detailed DFT studies†

Ananya Dutta,[a] Rabiul Alam,[a] Abu Saleh Musha Islam,[a] Arpan Dutta[a] and Mahammad Ali *[a,b]

Received 7th July 2018,
Accepted 24th July 2018

DOI: 10.1039/c8dt02784f

rsc.li/dalton

A Cu(II) based sensor (**1**) prepared by the complexation between (quinolin-8-ylamino)-acetic acid hydrazide (L^2) and Cu^{2+} ions has been developed for a highly sensitive and selective recognition of HNO and S^{2-} over other biologically abundant anions with prominent enhancement in absorption and emission intensities. The sensor (**1**) shows weak fluorescence due to ET (electron transfer) but upon addition of HNO and S^{2-} a large enhancement in the fluorescence intensity (F.I.) was observed over other possible competitive anions on the basis of reduction of Cu(II) to Cu(I) and formation of CuS, respectively. The 1 : 1 complexation was characterized by mass spectrometry (MS), elemental analysis and Job's plot. The corresponding K_f value was evaluated to be $(4.934 \pm 0.05) \times 10^4\ M^{-1}$ for Cu^{2+} from UV-Vis absorption titration. Quantum yields of L^2 and [**Cu-L²** + S^{2-}] and [**Cu-L²** + HNO] complexes in acetonitrile (CH_3CN) are found to be 0.107, 0.09 and 0.07, respectively, using quinine sulphate as the standard.

Introduction

In many areas and disciplines, fluorescent sensors are in high demand because of their selective and efficient signaling properties for the detection of various chemical and biological analytes.[1] Copper, an essential trace metal ion, plays an important role in various biological and metabolic processes, the level of which can be regulated haemostatically.[2] Accumulation of a large excess of copper in the brain and the liver is highly toxic and causes Alzheimer's, Parkinson's, Prion, Menkes and Wilson's diseases.[3–6] Fluorescence measurement is one of the great techniques to detect Cu^{2+} because of its sensitivity and specificity and real-time monitoring with a fast response time.[7] Moreover, the Cu^{2+} complexes have the ability to sense other substances.[8]

Nitric oxide (NO) is an important signaling agent for various processes that involve the cardiovascular,[9] immune[10] and nervous systems.[11] HNO, the one-electron reduced and protonated derivative of NO, displays distinctive chemistry and biochemistry different from that of NO.[12–14]

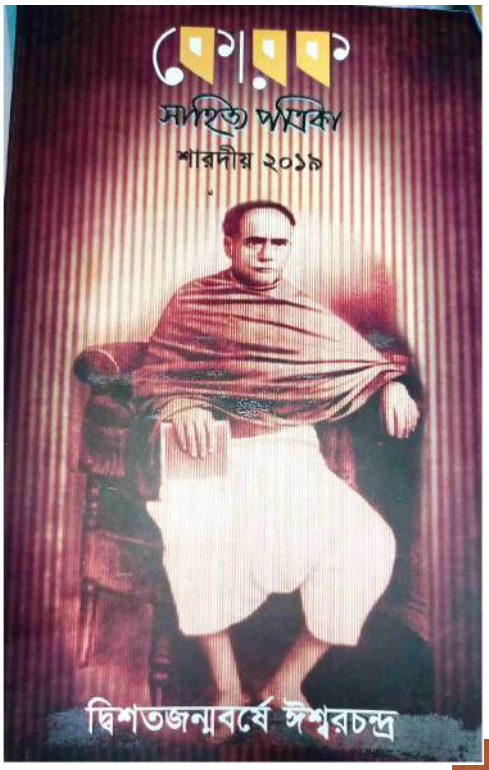
Recent studies reveal that exogenous administration of HNO increases the contractility of heart cells,[15] leads to vasorelaxation in muscle cells[16] and decreases platelet aggregation.[17] HNO also exacerbates ischemia-related injury[18] and induces neurotoxicity.[19] These lead to the conclusion that HNO plays a crucial role in biology. Detecting HNO in biological systems is a challenge that has caught the attention of chemists. Difficulties associated with HNO sensing include differentiation from NO and other biologically relevant analytes, rapid detection in low concentrations and compatibility of the sensing mechanism with biological environments, particularly at neutral or slightly acidic pH, high ionic strength and a temperature of 37 °C.

The most effective strategy for detecting HNO is to take advantage of its redox activity.[20,21] Probes that are able to be reduced selectively by HNO act as sensors if an appropriate output signal is linked to the reduction step. Although there are various chemical reactions that can be used to detect and trap HNO,[22] usually, azanone (HNO, nitroxyl) reacts with copper(II) ions, resulting in the formation of nitric oxide and Cu^+.[23] This strategy is utilized for the construction of copper-based pro-fluorescent HNO probes.

We discuss here on the systems that collocate a Cu(II) coordination complex with a fluorophoric moiety. The sensing mechanism of such probes depends on the unpaired electron of the Cu(II) center which quenches the fluorescence of a photoemissive ligand by either electron or energy transfer (Scheme 1). Reduction of Cu(II) to Cu(I) by HNO restores the fluorescence of the ligand.

[a]Department of Chemistry Jadavpur University, Kolkata 700 032, India. E-mail: m_ali2062@yahoo.com, mali@chemistry.jdvu.ac.in; Fax: +91-33-2414-6223
[b]Vice-Chancellor, Aliah University, II-A/27, Action Area II, Newtown, Action Area II, Kolkata, West Bengal 700 160, India

† Electronic supplementary information (ESI) available. See DOI: 10.1039/c8dt02784f



Dr. Pampa Mukherjee, 2019-20

ঈশ্বরচন্দ্র বিদ্যাসাগরের 'নিষ্কৃতিলাভ প্রয়াস' ও মদনমোহন তর্কালঙ্কার

পম্পা মুখোপাধ্যায়

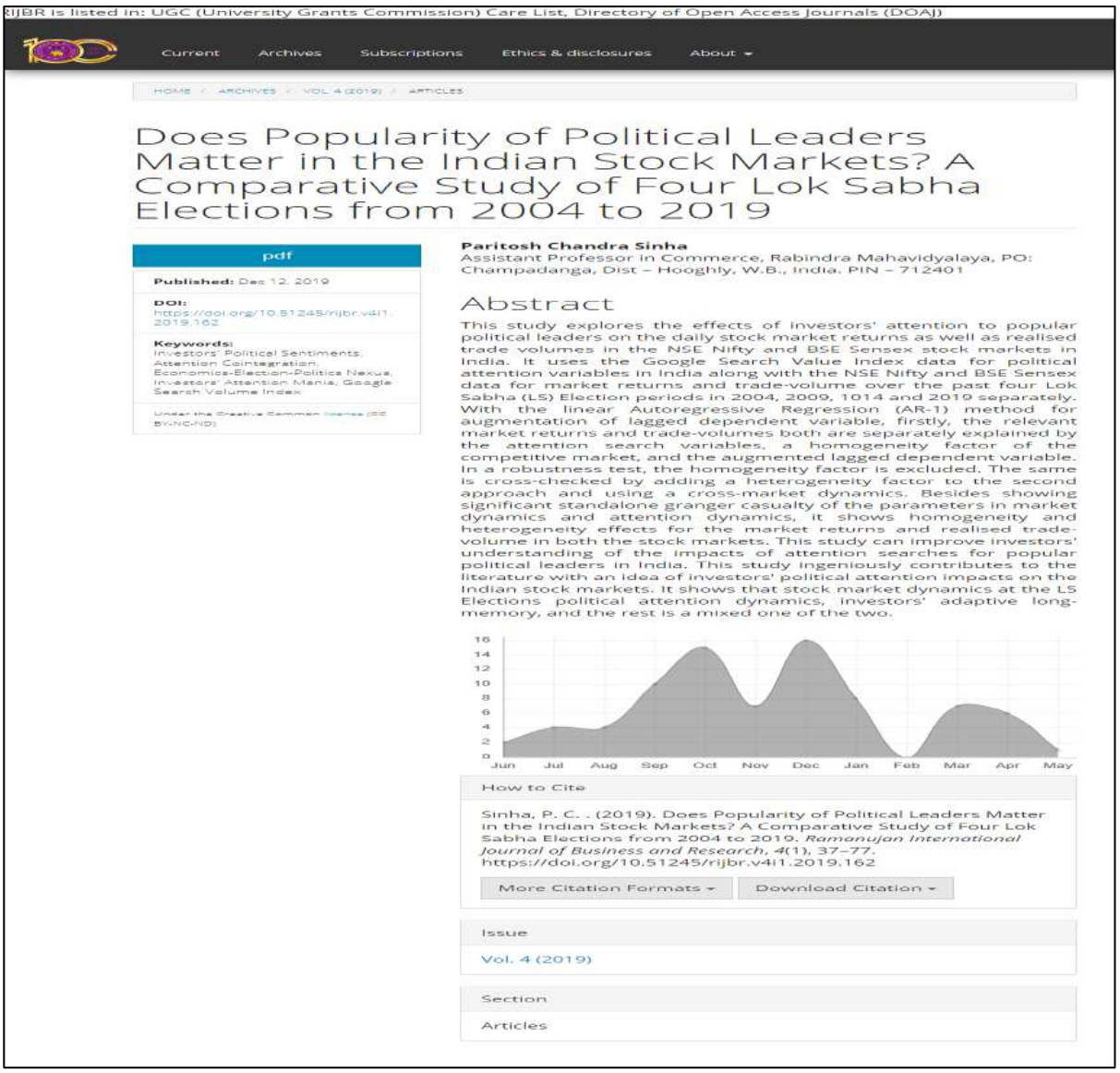
বিদ্যাসাগরের (১৮২০-১৮৯১) পাঠকমাত্রই অবগত আছেন *নিষ্কৃতিলাভ প্রয়াস* (১২৯৫ সাল) নামে গ্রন্থটি আকারে ক্ষুদ্র হলেও বিদ্যাসাগরের অন্য গ্রন্থগুলির থেকে স্বতন্ত্র। জগদ্দল-সমাজ সংস্কারে এক যুগপুরুষ যে প্রবল-সংগ্রামে আজীবন ব্রতী ছিলেন বিদ্যাসাগরের অনেক মৌলিক গ্রন্থই সেই সংগ্রামের মস্যাস্ত্র হিসেবে প্রকাশ পেয়েছে। বিপরীত মতাবলম্বীদের কূটতর্ক ভেসে গেছে তাঁর তীক্ষ্ণ যুক্তির কাছে। প্রয়োজনে ছদ্মনামে তাঁদের তীব্র আক্রমণ করতে ছাড়েননি তিনি। অপরদিকে বিদ্যাসাগরের ব্যক্তিগত জীবনেও কঠোরের সঙ্গে কোমলতার সংমিশ্রণ দেখা যায়। অসহায়ের প্রতি তাঁর দয়া যেমন মিথ হয়ে গেছে, তেমন যে-কোনো বাধার বিপক্ষে তাঁর লড়াইও ইতিহাস হয়ে গেছে। কঠোরে-কোমলে মেশানো এই বিদ্যাসাগরের *নিষ্কৃতিলাভ প্রয়াস* গ্রন্থটিও প্রতিপক্ষের অভিযোগের জবাব দিতেই লেখা।

কে এই প্রতিপক্ষ? যোগেন্দ্রনাথ বিদ্যাভূষণ এম.এ (১৮৪৫-১৯০৪)। সম্পর্কে তিনি মদনমোহন তর্কালঙ্কারের (১৮১৭-১৮৫৮) জামাতা। যে মদনমোহন তর্কালঙ্কারের সঙ্গে বিদ্যাসাগরের দীর্ঘদিনের বন্ধুত্ব ছিল এবং পরে বন্ধুবিচ্ছেদ হয়। যে মদনমোহন তর্কালঙ্কার নিজেও ছিলেন সেইসময়ের বাংলা সাহিত্যক্ষেত্রে স্বনামধন্য পুরুষ। সেইসময়ের অন্যতম সমাজ-সংস্কারক, স্ত্রী-শিক্ষা প্রসারে যার ভূমিকাও স্মরণীয়।

স্বল্পজীবী মদনমোহনের মৃত্যুর প্রায় বারো বছর পর তাঁর জামাতা যোগেন্দ্রনাথ ১৮৭১ সালে *কবিবর মদনমোহন তর্কালঙ্কারের জীবনচরিত ও তদ্‌গ্রন্থ সমালোচনা* নামে একটি গ্রন্থ লেখেন। সেখানে মদনমোহন প্রসঙ্গে বিদ্যাসাগর সম্পর্কে তিনি এমন কিছু মন্তব্য করেছিলেন, যা বিদ্যাসাগরের ভালো লাগার কথা নয়। তার মধ্যে একটি তো পরস্ব-অপহরণের অভিযোগ বলা যায়। যোগেন্দ্রনাথ অভিযোগ করেন—*শিশুশিক্ষা* তর্কালঙ্কার-মহাশয়ের উত্তরাধিকারীদের সম্পত্তি। বিদ্যাসাগর মহাশয় অন্যায়ভাবে তার উপস্বত্ব-ভোগ করছেন। এছাড়াও তাঁর দাবি ছিল, *বেতাল পঞ্চবিংশতি* (১৮৪৭) বিদ্যাসাগরের একক-রচনা নয়, তা 'তর্কালঙ্কার দ্বারা এতদূর সংশোধিত ও পরিমার্জিত হইয়াছিল যে বোমান্ট ও ফ্লেচরের লিখিত গ্রন্থগুলির ন্যায় ইহা উভয় বন্ধুর রচিত বলিলেও বলা যাইতে পারে।'[১] অর্থাৎ *বেতাল পঞ্চবিংশতি* গ্রন্থরচনাতে মদনমোহনের যে স্বীকৃতি প্রাপ্য ছিল তা তিনি পাননি, যোগেন্দ্রনাথের বক্তব্য থেকে প্রত্যেকেই তা মনে করতে পারেন।

মূলত এই দুটিই গুরুতর অভিযোগ বলা যেতে পারে। তার সঙ্গে ছিল বিদ্যাসাগর সম্পর্কে আরেকটি বক্তব্য, যা বিদ্যাসাগরের মতে অমূলক। যোগেন্দ্রনাথ লেখেন—সংস্কৃত কলেজের অধ্যক্ষের পদ গ্রহণ করতে বেথুন সাহেব মদনমোহনকে অনুরোধ করলেও তিনি তা গ্রহণ না করে বিদ্যাসাগরের নাম সুপারিশ করেন এবং বিদ্যাসাগর ওই পদ পান।

Paritosh Chandra Sinha, 2019-20



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Does Popularity of Political Leaders Matter in the Indian Stock Markets? A Comparative Study of Four Lok Sabha Elections from 2004 to 2019

pdf

Published: Dec 12, 2019

DOI: https://doi.org/10.51245/rijbr.v4i1.2019.162

Keywords: Investors' Political Sentiments, Attention Cointegration, Economics-Election-Politics Nexus, Investors' Attention Mania, Google Search Volume Index

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Paritosh Chandra Sinha
Assistant Professor in Commerce, Rabindra Mahavidyalaya, PO: Champadanga, Dist – Hooghly, W.B., India, PIN – 712401

Abstract

This study explores the effects of investors' attention to popular political leaders on the daily stock market returns as well as realised trade volumes in the NSE Nifty and BSE Sensex stock markets in India. It uses the Google Search Value Index data for political attention variables in India along with the NSE Nifty and BSE Sensex data for market returns and trade-volume over the past four Lok Sabha (LS) Election periods in 2004, 2009, 1014 and 2019 separately. With the linear Autoregressive Regression (AR-1) method for augmentation of lagged dependent variable, firstly, the relevant market returns and trade-volumes both are separately explained by the attention search variables, a homogeneity factor of the competitive market, and the augmented lagged dependent variable. In a robustness test, the homogeneity factor is excluded. The same is cross-checked by adding a heterogeneity factor to the second approach and using a cross-market dynamics. Besides showing significant standalone granger casualty of the parameters in market dynamics and attention dynamics, it shows homogeneity and heterogeneity effects for the market returns and realised trade-volume in both the stock markets. This study can improve investors' understanding of the impacts of attention searches for popular political leaders in India. This study ingeniously contributes to the literature with an idea of investors' political attention impacts on the Indian stock markets. It shows that stock market dynamics at the LS Elections political attention dynamics, investors' adaptive long-memory, and the rest is a mixed one of the two.

How to Cite

Sinha, P. C. . (2019). Does Popularity of Political Leaders Matter in the Indian Stock Markets? A Comparative Study of Four Lok Sabha Elections from 2004 to 2019. *Ramanujan International Journal of Business and Research*, *4*(1), 37–77. https://doi.org/10.51245/rijbr.v4i1.2019.162

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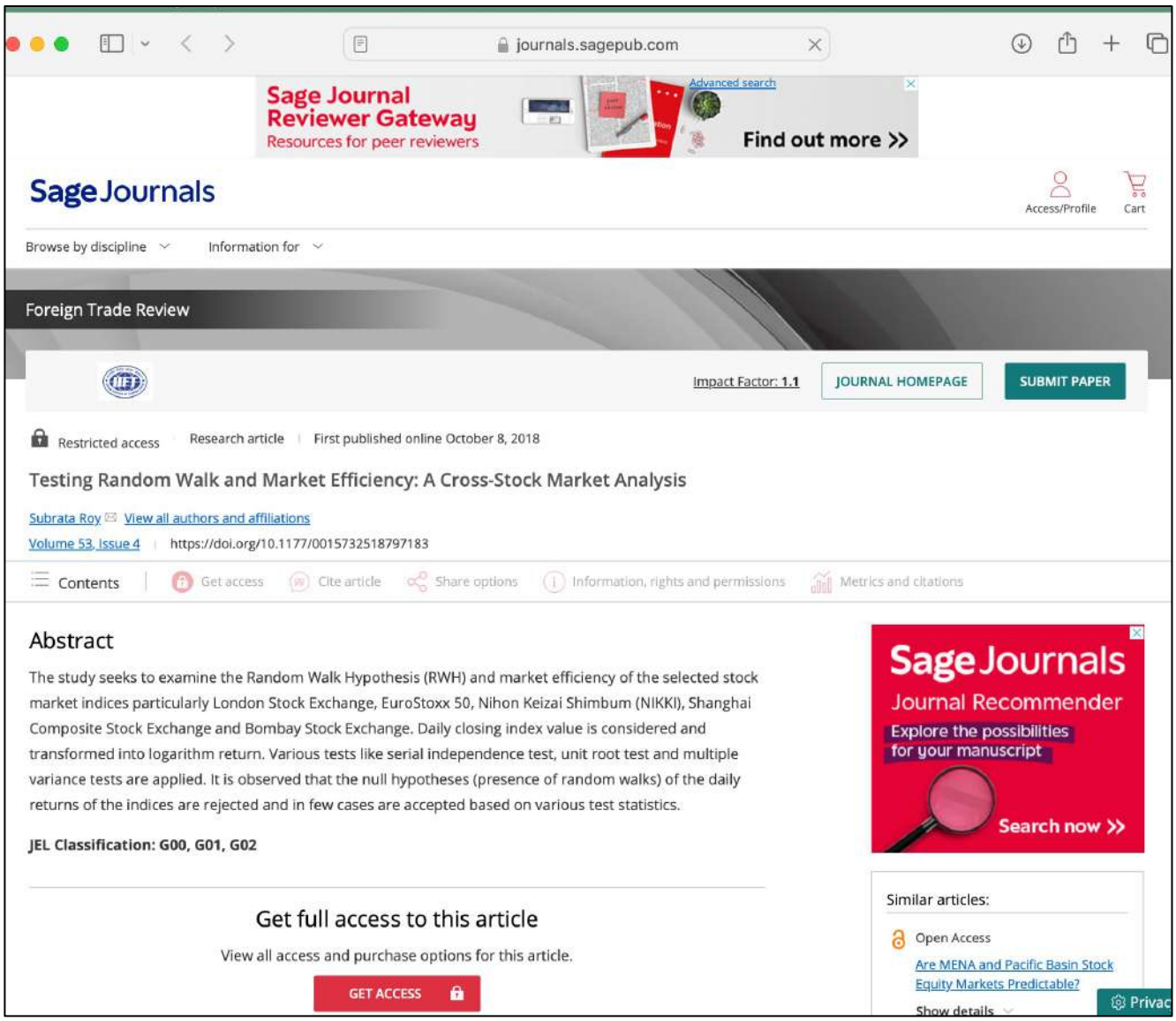
Dr Subrata Roy, 2018-19



Dr Subrata Roy, 2018-19

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Year : 2018, Volume : 23, Issue : 2
First page : (19) Last page : (26)
Print ISSN : 0973-9335. Online ISSN : 0973-9343.
Article DOI : 10.5958/0973-9343.2018.00012.1

Market efficiency & diverse asymmetric effect of sri indices

Roy Subrata*
*Assistant Professor, Department of Commerce, Rabindra Mahavidyalaya (Affiliated to the University of Burdwan), Champadanga, Hooghly, West Bengal

Online published on 18 July, 2018.

Abstract

The present study seeks to examine market efficiency & various asymmetric effects of the Dow-Jones Sustainability responsible indices (DJSI) during different periods by applying various econometric models. It is observed that volatility clustering presents in the indices returns. Significant asymmetric shocks and persistence of conditional volatilities also present in the daily returns of the SRI indices during the entire sub periods and the whole period based on various measures. Leverage effects exist in the indices' returns during different sub periods based on various measures. Here, GARCH measure is appropriate during the post-recession period for volatility forecasting. The SRI indices don't follow RWH and informationally inefficient at their weak forms.

Top

Keywords

RWH, DJSI, ARCH, GARCH, EGARCH, TARCH.

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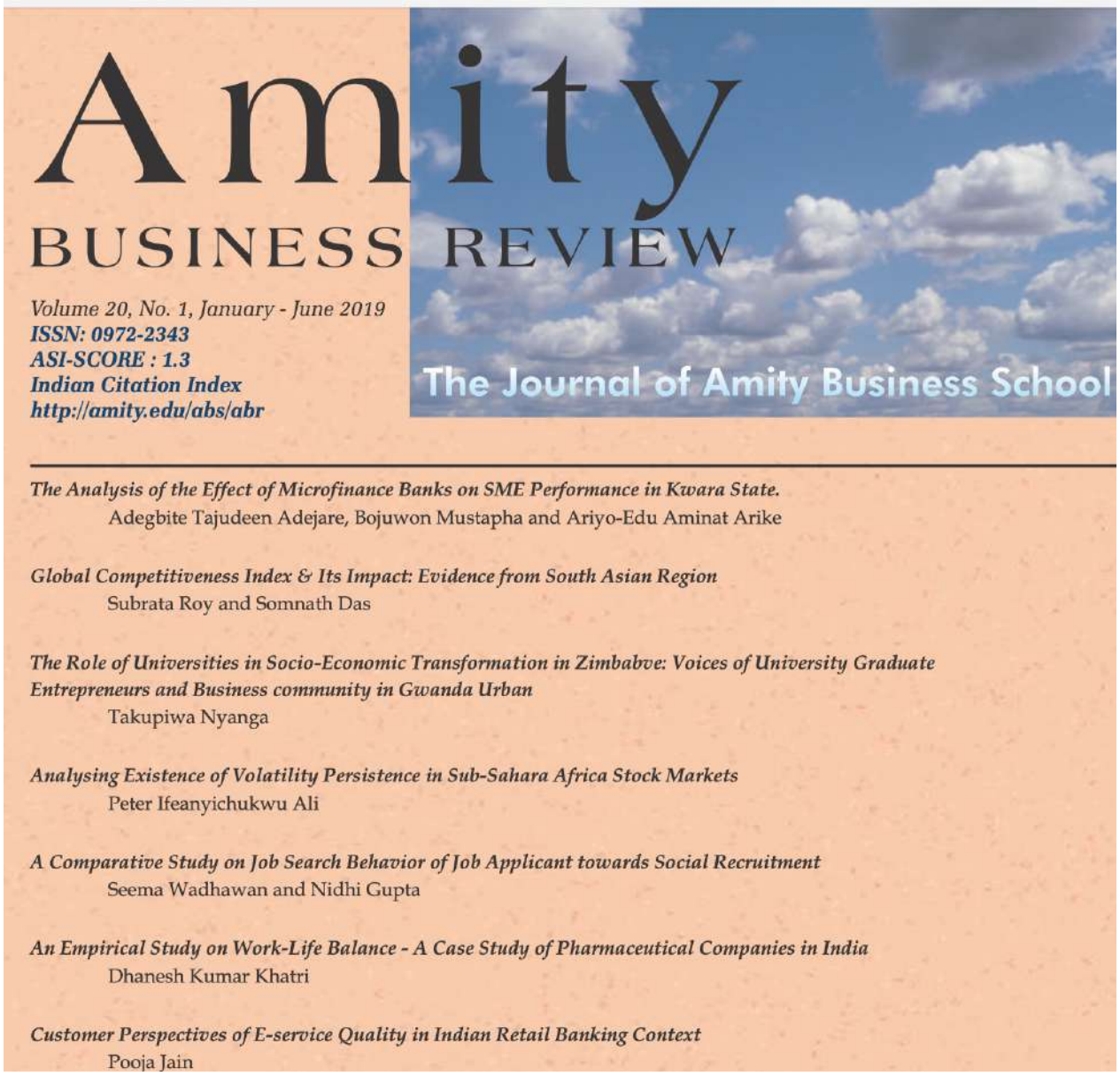


Dr Subrata Roy, 2018-19

Title

Global Competitiveness Index & Its Impact: Evidence from South Asian Region.

Authors

Roy, Subrata; Das, Somnath

Abstract

This study seeks to examine whether the competitiveness drivers (sub-index) i.e. basic requirements, efficiency enhancers and innovation & sophistication may influence the global competitiveness index (GCI) of the south Asian countries. To examine the above issue five south Asian countries are considered. The yearly scores of GCI, basic requirements, efficiency enhancers and innovation and sophistication factors are collected from the published reports of the world economic forum from 2010-2011 to 2016-2017. Here, panel data approach is used and found that fixed effect model is appropriate to explain the GCI function of the south Asian countries.

Subjects

FIXED effects model; PANEL analysis; TECHNOLOGICAL innovations

Publication

Amity Business Review, 2019, Vol 20, Issue 1, p11

Dr Subrata Roy, 2018-19

Pacific Business Review International
Volume 11 Issue 2, August 2018

Impact of Competitiveness Drivers on Global Competitiveness Index

Dr. Subrata Roy
Assistant Professor
Department of Commerce
Rabindra Mahavidyalaya
Champadanga, Hooghly,
West Bengal, India

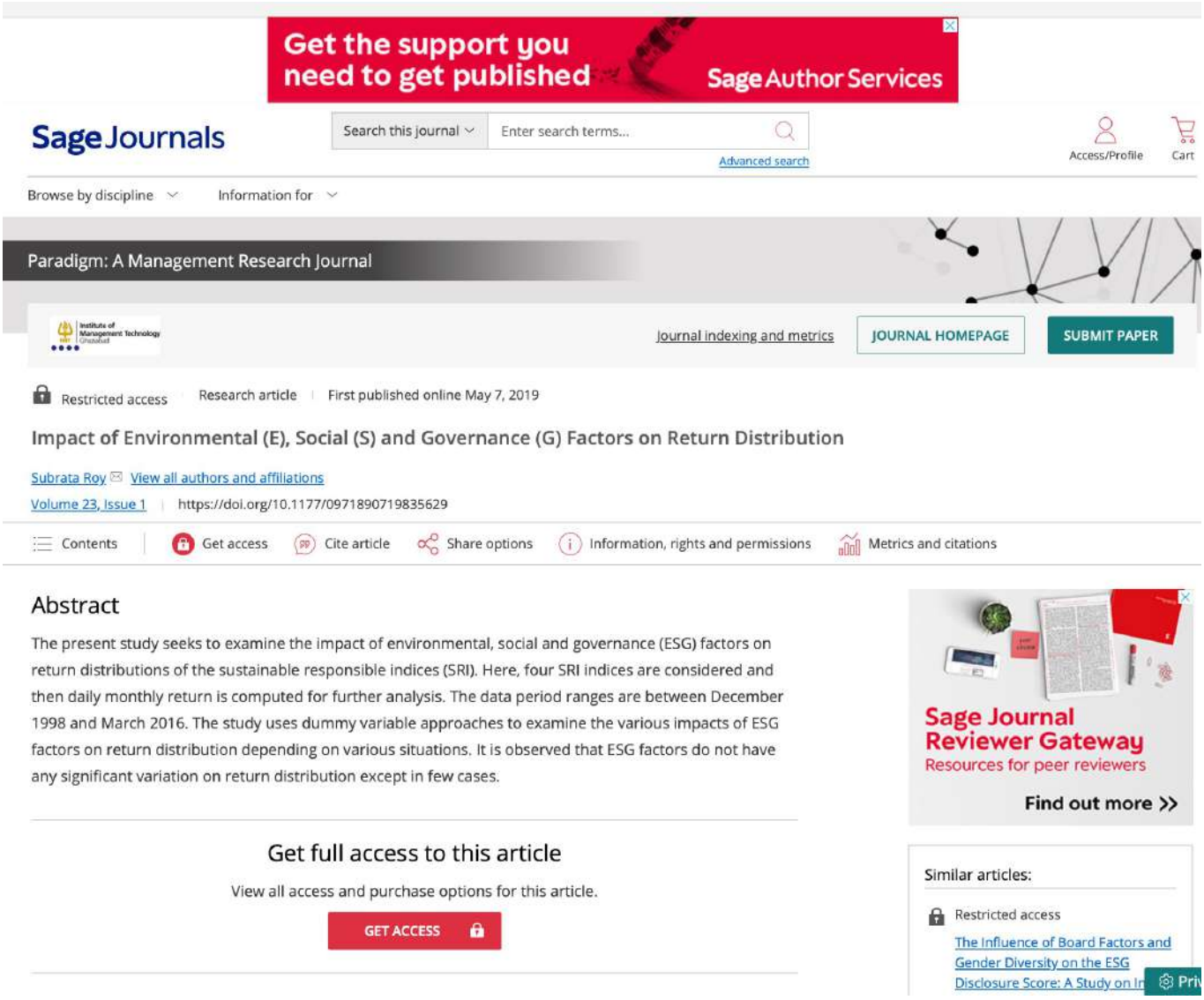
Abstract

The study is design to examine the impact of basic requirements, efficiency enhancers and innovation and sophistication factors on global competitiveness index (GCI) on East Asia and Pacific region countries. Thus, matrix approach is used and regression model is also applied to compare the result. Philippines and Cambodia are not efficient to manage innovation and sophistication factor to make the nations more competitiveness in terms of productivity and prosperity because their coefficients are negative. Only five countries are significantly efficient to deal with three drivers to make the nations more competitiveness. The coefficients of three sub-indices of the remaining countries are positive except for innovation and sophistication of Philippines and Cambodia and the evidence is same which is obtained from regression analysis. Limited numbers of papers have focused on various definitions of GCI and identified factors for formulating GCI. Few studies have examined the impact of some specific factors on GCI. But this study is new one in the sense that it exclusively examines the impact of all the pillars categorised in three sub-indices (Basic requirements, Efficiency enhancers and Innovation & Sophistication) on Global Competitiveness Index which is expected to add value in the literature of global competitiveness.

Keywords: GCI, WEF, Matrix, Index, Factor, Efficiency, Innovation, Regression, Pillars, Region

Gel Classification: C1 C10

Dr Subrata Roy, 2018-19



Dr. Sumanti Gupta, 2018-19

Plant Molecular Biology Reporter
https://doi.org/10.1007/s11105-018-1067-1

ORIGINAL PAPER

Salicylic Acid Regulates Systemic Defense Signaling in Chickpea During *Fusarium oxysporum* f. sp. *ciceri* Race 1 Infection

Anirban Bhar[1,2] · Moniya Chatterjee[1] · Sumanti Gupta[1,3] · Sampa Das[1]

Abstract
Annual loss of productivity of the important crop legume chickpea has received prime scientific concern at recent times. Vascular wilt caused by fungal pathogen *Fusarium oxysporum* f. sp. *ciceris* race 1 (Foc1) accounts for major share of yield loss of chickpea. Control of this disease remains a challenge due to the lack of appropriate breeding programs to manage fast pathogen mutability. Previous studies with this pathogen have highlighted the role of reactive oxygen species (ROS) as chemical signal in enkindling downstream systemic resistance response instead of activating site specific defense. But the role of salicylic acid in modulating resistance is still unexplored. Present study explains the probable function of salicylic acid (SA) in coordination with ROS. The external SA application reveals the restoration of relative water content of infected susceptible chickpea plants. The qRT-PCR based expression study of key SA biosynthetic genes indicate that the SA biogenesis takes place by the activity of phenylalanine ammonia lyase (PAL) that activates other SA responsive genes and TGA transcription factors to induce an active defense against Foc1. Finally, detection of SA by LC MS/MS along with the accumulation of transcripts of SA marker genes, PR1 and PR5, strengthens the involvement of SA in translocation of distant systemic signals in chickpea-Foc1 interaction.

Keywords Biotic stress · *Cicer arietinum* · *Fusarium oxysporum f. sp. ciceri* race 1 · Systemic response · Salicylic acid · Wilt disease

Introduction

Plant immunity lacks mobile defender cells but the well orchestrated signal transduction mechanism makes them potent combatant against a wide array of pathogens. Additionally, plants show the phenomenon of SAR (systemic acquired resistance) wherein the encounter of a plant organ with the pathogen results in local hypersensitive response followed by transduction of signal to the nearby plant parts so that the secondary infections could be ceased. Recent findings not only strengthened this long distance signaling events in plant (SAR), but also established the development of a short term memory against the infestation of a particular type of pathogen, known as "priming" (Aranega-Bou et al. 2014). These systemic responses largely depend upon hormonal cross talk and interactions of small molecules which ultimately promote a broad spectrum resistance phenomenon in plants (Shah et al. 2014).

Small molecules are generally chemical substances synthesized by plants to execute signaling events. Pipecolic

Electronic supplementary material The online version of this article (https://doi.org/10.1007/s11105-018-1067-1) contains supplementary material, which is available to authorized users.

✉ Sampa Das
sampa@jcbose.ac.in

Anirban Bhar
anirbanbhar06@gmail.com

Moniya Chatterjee
moniya05@gmail.com

Sumanti Gupta
sumantigupta@gmail.com

[1] Division of Plant Biology, Bose Institute, Centenary Campus, P 1/12 CIT Scheme VII-M, Kolkata 700054, India

[2] Present address: Post Graduate Department of Botany, Ramakrishna Mission Vivekananda Centenary College, Rahara, Kolkata 700118, India

[3] Present address: Department of Botany, Rabindra Mahavidyalaya, Champadanga, Hooghly 712401, India

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Tanmay Ghosh, 2018-19

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Isolation and Phylogenetic Identification of Seed borne Mycoflora associated with Rice and Eco-friendly management by *Datura stramonium* with Phytochemical Screening : GC-MS analysis

***Tanmay Ghosh[1] , M. K. Biswas[2] and Kaustav Aikat[3]**
1. Department of Biotechnology, NIT Durgapur, Burdwan, W.B., India.
2. Department of Plant Protection, P. S. B., Visva-Bharati ,Sriniketan, W. B. 731236, India.
3. Department of Biotechnology, NIT Durgapur, Burdwan, W.B., India.

Abstract :

The study illustrates the efficiency of Antifungal activity of ethyl acetate extract of *Datura stramonium* against some seed borne fungi (*Aspergillus* sp, *Rhizopus* sp, *Fusarium* sp, and *Macrophomina* sp.) isolated from field crop Rice (Variety- Khas) of Indo-Gangetic area, using standard microbiological procedures and to investigate the active compound of ethyl acetate extract of *Datura stramonium* which is responsible for antifungal activity by GC-MS technique. The identification of fungi was carried out by phylogenetic tree construction and 18S rRNA sequencing. The well diffusion method was used to study the efficacy of *Datura stramonium* . The extracts were poured into the wells at different concentrations including 50 mg/ml, 100 mg/ml, 200 mg/ml and 400 mg/ml. After incubation the zone of inhibition was carried out by agar plate method was observed. The concentration of 400 mg/ml showed the maximum zone of inhibition (18.8mm±0.2) where as the concentration of 50 mg/ml showed the minimum zone of inhibition (12.7mm±0.1) for isolated *Fusarium oxysporum*. Study has also been shown the presence of Bio active compound such as N-(2-Bromobutyryl)-4-chloro-benzenesulfonamide in the leaf of *Datura stramonium* which is responsible for antifungal activity and which can be used for seed treatment against seed borne fungal disease.

Introduction :

Rice (*Oryza sativa* L.) belongs to family Poaceae with two domesticated species of genus *Oryza*. *Oryza* sativa originates from tropical and subtropical southern Asia, while the African rice, *Oryza* glaberrima, originates from West Africa [1, 2]. The crop is one of the most important food crops in the world which forms the staple diet of about 2.7 billion people and has become a commodity of strategic significance across many African countries [3]. Among the various modes of transmission of plant diseases, seeds play an important role in the transmission of pathogens and development of plant diseases. The seed-borne pathogens may be externally or internally seed-borne, extra- or intra- embryonic or associated with the seeds [4]. Seed borne fungi cause losses in terms of seed quality and quantity in all oil seed crops. These fungi also reduce the germination and storability of the oil seed. They are responsible for seed rot, seedling blight, root/shoot rot, foliar infection as well as pod blight diseases [5, 6].

Wesleyan Journal of Research, Vol. 12 (June, 2019)

Habits of Internet use in Urban India and Social Background : A Case Study of Adolescents of Kolkata Municipal Corporation, West Bengal

Shovan Ghosh [a] and Sucharita Pramanick[b*]
[a]Department of Geography, Diamond Harbour Womens University, South 24 Pargana, West Bengal
[b*]Department of Geography, Rabindra Mahavidyalaya, Champadanga, West Bengal

Abstract : The increasing importance of internet in day-to-day life has influenced the internet based activities of the adolescents, like that of gaining knowledge, entertainment and most importantly communication. Internet using habits and online behaviours of the adolescents are becoming a matter of great concern for urban societies, especially India. The purpose of the present study is to scrutinize the relationship between the social background of the adolescents and their internet using habits, along with focus on its gender variations. Questionnaire survey was conducted in selected schools of Kolkata, based on stratified random sampling methods. The results indicate that the five variables considered for analysing online habits of the adolescents i.e. the frequency of internet use each day, the frequency of internet use each week, use of internet to communicate with known persons, use of internet to communicate with unknown strangers and use of internet for social networking - all have association with socio-cultural background of the students. Absence of strong variation in the results for male and female has been observed, except the presence of little gender variation in case of internet use per week and use of internet for social networking.

Keywords : adolescent, cyber-technology,online habit, social networking sites

Corresponding author : Sucharita Pramanick, Email id: sucharitapramanick21@gmail.com

1. Introduction

Initially the concept "space" considered physical space or even "outer space." (Dyer and Ngui, 2010), but with time the concept has undergone change. However, now a social space can be physical like a social centre, gathering place, public place town squares or parks or virtual space such as online social media,websites where people gather and interact. Social space is prior to human techno-social space but is inseparable from it. Now, virtual space is a mere reflection of offline space (Nunes, 2006). This cyber space requires new sets of metaphors, rules and behaviours (Strate, Jacobson and Gibson, 2003). Now, the cyber social reality can only be drawn from its relation to culture, interactions but its matrix is embedded in technology, time and space. So social and cultural space forms synthesising factors of cyber- space and they control people's behaviour online (Gotved, 2006).

Internet using habits and online behaviours of adolescents is becoming a matter of great concern for urban societies. In India, rural and urban communities differ in many respect, related to this problem (Blaya, Kaur & Sandhu, 2018). Its nature and dynamics are more complicated in complex cultural background of a cosmopolitan city, like Kolkata. As stated by Clair and William "Culture functions within spatial contexts of colonialism, cultural habitus, global expansion, modernization, social scripts and mass mediate culture as the new social reality" and it is true for Kolkata also.

Dr. Shelly Sinha, 2018-19

Ecological Genetics and Genomics 12 (2019) 100039

Contents lists available at ScienceDirect

Ecological Genetics and Genomics

journal homepage: www.elsevier.com/locate/egg

Comparative sequence analysis identified multiple replication systems and virulence determinants to be frequently encoded on large plasmids of *Escherichia coli*

Shelly Sinha[a,b], Sukanta Kumar Sen[a], Bomba Dam[b,*]

[a] Microbiology Laboratory, Department of Botany (DST-FIST & UGC-SAP Funded), Institute of Science, Visva-Bharati (A Central University), Santiniketan, West Bengal, 731235, India

[b] Department of Botany, Hoogly Mohsin College, Chinsurah, Hooghly, West Bengal, 712101, India

ARTICLE INFO

Keywords:
Escherichia coli
Plasmid
IncF
Comparative genomics
Virulence factors
Multiple replicons

ABSTRACT

Escherichia coli strains exist both as commensal gut microflora of animals (including humans, and as their intra- and extra-intestinal pathotypes. Complete whole genome sequencing of several *E. coli* strains have been performed and deposited in public databases. Although the genomes are well studied and comparatively analyzed, the associated smaller plasmid-like contig(s) are poorly characterized. Here, 106 plasmid-like contigs (1.5–204.6 Kb) from 41 *E. coli* strains were comparative analyzed. Total pan genome of the contigs has 6903 coding sequences but no core gene in common, possibly due to variation in their size and basic machineries. Most genes are uncharacterized with 6.8–59.6% from 17 large (> 60 Kb) plasmids categorized into four RAST functional subsystems. However, detailed screening against virulence databases identified genes encoding colonization and adhesion factors, secretion systems, transposases, toxins, and those imparting mobility, iron uptake, antibiotic and metal resistance, particularly again in large sized plasmids. Phylogenetic tree of 101 IncF incompatibility related replication proteins, RepA, present in 80 plasmids, identified five major replicon clusters dominated by IncFIIA and IncFIB types with 48 and 28 entries, respectively. Interestingly, large plasmids (25 nos.) irrespective of host ecotype also encode more than one RepA homolog, with 4, 3 and 2 replicons identified respectively in 3, 6 and 17 plasmids that also encode virulence-related determinants. Thus, plasmids are common in all *E. coli* ecotypes, including non-pathogens with the large sized ones endowed with multiple replication systems and several virulence factors that might help the strains to succeed in diverse environments and emerge as a successful pathogen.

1. Introduction

Escherichia coli is a facultative anaerobic member of family *Enterobacteriaceae* belonging to the phylum γ-Proteobacteria and is best known as a commensal of the gastrointestinal tract of several animals including human. The species although well known as a beneficial gut bacterium, also have several virulent strains classified as intestinal or extra-intestinal pathotypes. Intestinal virulent strains include enteropathogenic (EPEC), enterohemorrhagic (EHEC), enterotoxigenic (ETEC), enteroaggregative (EAEC) and adherent invasive (AIEC) *E. coli*. The extra-intestinal strains represent uropathogenic (UPEC), meningitic (NMEC) avian pathogenic (APEC) and septicemic pathotypes [1,2]. Several attempts have been made to understand the rationale behind this huge diversity of the species by comparative analysis of genome encoded proteins, particularly those related to virulence or pathogenicity.

Recent advancement in next generation sequencing techniques led to a massive increase in the number of bacterial genomes being sequenced and deposited to public databases. Many of the sequences are deposited in draft format with huge number of contigs and the remaining are complete. Even, the complete whole genome sequencing projects like those of different *E. coli* strains have submissions of one or more contigs, in addition to the large chromosomal contig. These smaller contigs are possibly sequences of plasmid(s) these strains harbour. In most cases the larger chromosomal contig is well characterized, but the smaller plasmid sequences remain in draft format.

Plasmids are extra-chromosomal entities that can replicate autonomously and exhibit huge diversity by horizontally acquiring and losing genes within the population [3,4]. They were discovered in early 1950s with initial studies mainly relying on isolation of plasmid DNA from

* Corresponding author. Department of Botany, Institute of Science Visva-Bharati (A Central University) Santiniketan, West Bengal, 731235, India.
E-mail address: bomba.dam@visva-bharati.ac.in (B. Dam).

https://doi.org/10.1016/j.egg.2019.100039
Received 10 May 2018; Received in revised form 21 February 2019; Accepted 1 April 2019
Available online 30 April 2019
2405-985X/

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Link to website of the Journal:
https://www.sciencedirect.com/journal/ecological-genetics-and-genomics

Link to article / paper / abstract of the article:
https://doi.org/10.1016/j.egg.2019.100039

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Check the publication details in MS excel file: Checked

Shuvojit Mondal, 2018-19

Journal of Applied Mathematics and Computing
https://doi.org/10.1007/s12190-020-01319-6

ORIGINAL RESEARCH

Local and global dynamics of a fractional-order predator–prey system with habitat complexity and the corresponding discretized fractional-order system

Shuvojit Mondal[1] · Milan Biswas[2] · Nandadulal Bairagi[3]

Received: 3 May 2019

Abstract

This paper is focused on local and global stability of a fractional-order predator–prey model with habitat complexity constructed in the Caputo sense and the corresponding discrete fractional-order system. Mathematical results like positivity and boundedness of the solutions of fractional-order predator–prey model is presented. Conditions for local and global stability of different equilibrium points are proved. It is shown that there may exist fractional-order-dependent instability through Hopf bifurcation. We have determined an extra stability region in the lower range of habitat complexity where all populations coexist in stable state for some fractional-order values but unstable for integer-order value. Dynamics of the discrete fractional-order model is shown to be more complex and depends on both the step-size and fractional-order. It shows Hopf bifurcation, flip bifurcation and chaos with respect to the step-size. Several examples are presented to substantiate the analytical results.

Keywords Fractional differential equation · Ecological model · Local stability · Global stability · Discrete fractional model · Bifurcations

Mathematics Subject Classification 26A33 · 34A08 · 34K37

✉ Shuvojit Mondal
shuvojitmondal91@gmail.com

Milan Biswas
milanju10@gmail.com

Nandadulal Bairagi
nbairagi.math@jadavpuruniversity.in

[1] Department of Mathematics, Rabindra Mahavidyalaya, Hooghly 712401, India

[2] Department of Mathematics, A.J.C. Bose College, Kolkata 700020, India

[3] Centre for Mathematical Biology and Ecology, Department of Mathematics, Jadavpur University, Kolkata 700032, India

Published online: 29 January 2020

Basabi Pal, 2018-19

Bhatter College Journal of Multidisciplinary Studies | ISSN 2249-3301, Vol. 8, Number 1, 2018
A UGC approved refereed peer-reviewed journal
Article url: www.bcjms.bhattercollege.ac.in/v8/n1/v8n1el02.pdf

Nature in the Eyes of Bibhutibhushan Bandopadhyay: A Study of *The Mountain of the Moon*

Basabi Pal[1] & Pamoli Nandy[2]
[1] *Rabindra Mahavidyalaya, Champadanga, Hooghly. Email: basabipal2011@gmail.com*
[2] *Bankura University, Bankura*

Abstract
Being a social animal, human being has a close relationship with nature. Recently the green look of nature is faded away day by day and we now feel the need of environmental advocacy. This paper attempts to show how nature is treated in Bibhutibhushan's *The Mountain of the Moon* (*Chander Pahar* ,1937), a fiction that is based on a daring adventure of young Bengali man, Shankar Roy Choudhury. Bibhutibhushan's search for the varied forms of nature- the wild, the spiritual and the beautiful- shows his interest in his study of nature with perfect accuracy and minute details. The present paper is a study to look back at Bibhutibhushan's tribute to nature in his seminal text *The Mountain of the Moon*.

Keywords- Nature, Environment, Wild, Beautiful, Spiritual.

Introduction:

The word nature refers to the external environment around us. It encompasses both the living and the non-living objects of the world. So, human beings are an important part of our environment. And there remains an intricate and primordial relationship between nature and the human beings. Nature also plays an important role in so many literary works. The concept of nature is echoed in literary works and nature writing emerges as an important sub-genre of literature. Nature and human beings should be co-existed with each other to maintain the ecological balance of our environment.

The concept of ecocriticism first introduced in the meetings of Western Literature Association in the 1970s. In the 1980s it started its initiative journey in the USA and in the UK it emerges in the 1990s.The word 'ecocriticism' is coined by William Rueckert in the essay *"Literature and Ecology: An Experiment in Ecocriticism"* and it is used by Cheryll Glotfelty and Harold Fromm in their seminal work entitled *The Ecocriticism Reader: Landmarks in Literary Ecology*. Glotfelty has an immense contribution for the establishment of ASLE (Association for the Study of Literature and Environment).At that time Karl Kroeber, the famous American personality wants to be an acknowledged ecocritic by his claim for using the term 'ecological' for the first time. But the credit goes to Glotfelty who has a significant contribution for the popularity of ecocriticism as an important theoretical approach. Barry opines ,

> Both terms ('ecocriticism' and 'ecological') apparently lay dormant...Glotfelty ...not only revived the term 'ecocriticism' but urged its adoption to refer to the diffuse critical field that had previously been known as 'the study of nature writing'(249).

This is the brief history of its origin in the USA. And in the UK ecocriticism comes to be known as 'green studies'. It gains its popularity in the UK after the publication of Jonathan Bate's *Romantic*

Tanmay Ghosh, 2018-19

Int J Pharma Bio Sci 2019 Apr; 10(2): (B) 196-203

Original Research Article | Microbiology

International Journal of Pharma and Bio Sciences | ISSN 0975-6299

EVALUATION OF ANTIBACTERIAL EFFICACY OF DIFFERENT EXRACTS OF *OCIMUM GRATISSIMUM* L. (LAMIACEAE) LEAVES AGAINST SOME PATHOGENIC BACTERIA WITH PHYTOCHEMICAL SCREENING.

TANMAY GHOSH[*1], MOHAN KUMAR BISWAS[2] AND RISHIN BHATTACHARYYA[3]

[1]Department of Microbiology, Rabindra Mahavidyalaya, Champadanga, Hooghly, West Bengal, India.
[2]Department of Plant Protection, P. S. B., Visva-Bharati, Sriniketan-731236, West Bengal, India.
[3]Department of Botany, Brahmananda Keshab Chandra College, Baranagar-700108, West Bengal, India

ABSTRACT

The study aims to investigate the efficiency of *Ocimum gratissimum* against pathogenic bacteria which includes *Escherichia coli, Salmonella entericaser Typhi* and *Staphylococcus haemolytic us* using standard microbiological procedures. *Ocimum gratissimum* was harvested and air dried for 6-7 days. The stuff was processed into fine powdery. Benzene, Hexane, Chloroform, Ethyl acetate served as extraction solvent, and once extraction, the obtained plant extract was weighed and preserved underneath anti-microbial condition.. The extracts were poured into the wells at different concentrations of 50mg/ml, 100mg/ml, 200mg/ml and 400mg/ml. After incubation zones of inhibition were carried out by agar cup method was observed. Among five extracts, the zone of inhibition Screened best in ethyl acetate extract. In case of *Salmonella entericaser Typhi:* (MTCC 8767) the ethyl acetate extract (400 mg/ml) showed maximum zone of inhibition 17.3 ± 0.2 mm while benzene extract (50 mg/ml) showed minimum zone of inhibition 10.8 ± 0.1 mm In case of *Staphylococcus haemolytic us:* (MTCC 3383) the ethyl acetate extract (400 mg/ml) showed maximum zone of inhibition 18.0 ± 0.1 mm, while benzene extract (50 mg/ml) showed minimum zone of inhibition 11.6 ± 0.2 mm In the case of *Escherichia coli*:(MTCC 2872)the ethyl acetate extract (400 mg/ml) showed maximum zone of inhibition 18.7 ± 0.2 mm, while benzene extract (50 mg/ml) showed minimum zone of inhibition11 ± 0.2mm. Hence *Ocimum gratissimum* can be employed in developing therapeutic drugs against many bacterium. *Many studies have been reported for the presence of alkaloids, tannins, glucosides, B vitamins, water soluble vitamins etc., in Ocimum gratissimum leaves*

KEY WORDS: ***Ocimum gratissimum; Escherichia coli; Staphylococcus haemolyticus; Phytochemical constituents; Alkaloid; Zone of inhibition***

TANMAY GHOSH*

Department of Microbiology, Rabindra Mahavidyalaya, Champadanga, Hooghly, West Bengal, India.

Corresponding Author

Received on: 18-03-2019
Revised and Accepted on: 11.04.2019
DOI: http://dx.doi.org/10.22376/ijpbs.2019.10.2.b196-203

Information Retrieval System: Evaluation of Ranked Retrieval Results

Swapan Khan
Librarian
Narasinha Dutt College
Howrah
Email: khanswapan@gmail.com

Pronobi Porel
Librarian, Rabindra Mahavidyalaya, Hooghly
and Research Scholar, Deptt. of Library &
Information Science, Jadavpur University
Email: khanpronobi@gmail.com

There are several measures used to evaluate an Information Retrieval System (IRS) to assess how well the search results satisfied the user's query intent. Ranked results are the core feature of an IR system. Precision, recall and F-measure are set-based measures, that cannot assess the ranking quality. Present paper shows to evaluate precision at every recall point which can also be used to evaluate a ranking of results of an IRS.

Keywords: *Information System, Recall, Precision, Information Retrieval, Ranked Retrieval, Evaluation of IRS*

Introduction

cording to Wikipedia Information Retrieval (IR) is the science of searching for documents, for information ithin documents, and for metadata about documents, as well as that of searching relational databases and the orld Wide Web. The evaluation of information retrieval systems is "the process of assessing how well a system eets the information needs of its users. There are two broad classe of evaluations: system evaluation and user-sed evaluation. User-based evaluation measures the user's satisfaction with the system, while system evaluation cuses on how well the system can rank documents" (Voorhees, 2002). IR is interdisciplinary, based on computer ience, mathematics, library science, information science, information architecture, cognitive psychology, nguistics, and statistics. IRS has developed as a highly empirical discipline. It is necessary to careful and through valuation to exhibit performance of an IRS and to demonstrate its novel technique on document representations n response of a query.

Evaluation Series and Test Collections

here are so many evaluation series and test collections. The present study focuses on a list of the most standard test llections and evaluation series. These evaluation series mainly traced on test collections for ad hoc information trieval system evaluation.

Dr. Pronobi Porel, 2018-19

2.1 The Cranfield Experiments:

Evaluation of IR systems is the result of early experimentation initiated by Cyril Cleverdon. He started a series of projects, called the Cranfield Projects, in 1957 that lasted for about 10 years in which he and his colleagues set the stage for information retrieval research (Heppin, 2012). This experiments was the pioneering test collection in allowing precise quantitative measures of information retrieval evaluation.

2.2 Text Retrieval Conference (TREC)

The National Institute of Standards and Technology (NIST), in 1992 has started a series of test bed for information retrieval. There were a lot number of test collections of different objects have been used in that project. The most important and popular one was TREC. The first TREC evaluation has been completed and evaluated between 1992 and 1999. The compositions of overall test collections were 6 CD ROMs containing 1.89 million documents and relevance judgments for 450 information needs which are called topics (Manning, Raghavan & Schutze, 2008). In 2003, to research in automatic segmentation, indexing, and content-based retrieval of digital video, Video Track has been performed which was called TRECVID. The TREC evaluation effort has grown in both the number of participating systems and the number of tasks each year. Ninety-three groups representing 22 countries participated in TREC 2003. In 2007, Genomics Tack was conducted to study the retrieval of genomic data, not just gene sequences but also supporting documentation such as research papers, lab reports, etc. Enterprise Track was done to study search over the data of an organization to complete some task in 2008. In recent, Clinical Decision Support Track, Contextual Suggestion Track, Dynamic Domain Track and etc. have been carried out (Text Retrieval Conference, 2017, October 4).

2.3 NII Test Collections for IR Systems (NTCIR)

It is a series of evaluation workshops designed to enhance research in information access technologies including information retrieval, question answering, text summarization, extraction, etc. to fulfill the following objectives (NTCIR Project Overview, n.d.):

- to encourage research in information access technologies by providing large-scale test collections.
- to present a forum on cross-system comparison and exchanging research ideas.
- to investigate evaluation methods of information access techniques and methods.

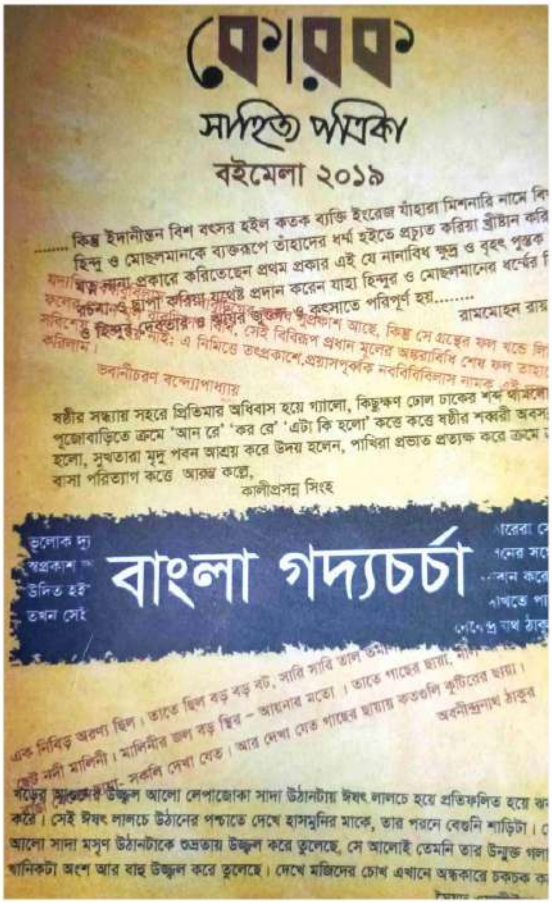
2.4 Cross Language Evaluation Forum (CLEF)

The Conference and Labs of the Evaluation Forum or CLEF, is an organization promoting research in multilingual information access "by (i) developing an infrastructure for the testing, tuning and evaluation of information retrieval systems operating on European languages in both monolingual and cross-language contexts, and (ii) creating test-suites of reusable data which can be employed by system developers for benchmarking purposes" (Cross Language Evaluation Forum, n.d.). The CLEF organization arranged holds a conference every year in September in Europe since its first workshop in 2000.

3. Components of Evaluation

The main component to measure an IRS effectiveness is the combination of following three issues.

Dr. Pampa Mukherjee, 2018-19



কথাকার মহাশ্বেতা : শব্দের তর্জনী

পম্পা মুখোপাধ্যায়

কথাসাহিত্য প্রধানত মানবজীবনের নৃতত্ত্ব বহন করে চলে। নৃতত্ত্ব শব্দটি বহুমাত্রিক। মানবসভ্যতার প্রবহমানতার বহুস্বর এর মধ্যে যুক্ত, তেমনই মানুষের ভাষাও অন্যতম গুরুত্বপূর্ণ বিষয়। কথাসাহিত্যের ভাষা পৃথকভাবে আমাদের বীক্ষণ দাবি করে। সেই কথাসাহিত্যে যখন বিশেষ কোনো সমাজজীবন— বিশেষ শ্রেণির পরিচয়, যাদের জীবনচর্চা অন্যস্বরের বা ভিন্নতরমাত্রার বহুরৈখিক বিভঙ্গ ধরা পড়ে, তখন সেই প্রয়োগ আমাদের ভাবায়। আবার কথাসাহিত্যের নির্মাতা যখন মহাশ্বেতা দেবী (১৯২৬-২০১৬), তখন সেই আলোচনায় পৃথক নিরীক্ষা প্রয়োজন হয়। কৃমি-কীট খুঁজে ক্ষুন্নিবৃত্তি নির্বাহকারী আলোচক সমাজ আর পাঠের রসগ্রহণের সীমাবদ্ধতায় আটকে থাকতে পারেন না। শুরু হয় অনুসন্ধান।

মহাশ্বেতা মানেই শবর-খেড়িয়া-সাঁওতাল সমাজের কথাকার এমন ধারণা থেকে বেরিয়ে এসে তাকে বহু শাখান্বিত একটি বৃক্ষ জানতে হবে। যাঁর নিজের পাঠের পরিধিও ছিল অপরিসীম আর কথাসাহিত্যের উপাদান যিনি বেশিরভাগ সময় সংগ্রহ করেছেন প্রতিদিনের কাজের ক্ষেত্র থেকে। তিনি তো প্রকৃত অর্থে কর্মী-লেখক (writer activist)। বানিয়ে তোলা গল্পের বাইরে এসে সংগ্রহ করা নমুনাকে সাজিয়ে তোলাতেই তাঁর আগ্রহ বেশি।

১৯৫৬-তে দেশ পত্রিকায় *ঝাঁসির রানি* জীবনীগ্রন্থ রচনা দিয়ে তাঁর স্বীকৃত বা প্রাতিষ্ঠানিক লেখার কাজ শুরু। এই জীবনীগ্রন্থ লেখার উপাদান সংগ্রহ করতে গ্রন্থাগারের ও সংগ্রহশালার সাহায্য যেমন তিনি নিয়েছেন, তেমনই বুন্দেলখণ্ড, মৌ, কাল্পি প্রভৃতি উত্তরভারতের অঞ্চলের অন্দরে ঘুরেছেন। ওইসব অঞ্চলের লোকজীবনে গরিব মজুর, কাল্পির কিষাণ, টাঙ্গাওয়ালা, ঝাঁসির [illegible] ঘোপানি, ঘুমপাড়ানি গানে রানি লক্ষ্মীবাই কীভাবে বেঁচে আছেন— সেই সন্ধান তাঁর কাছে ভীষণ প্রয়োজনীয় হয়ে ওঠে। এইসময় থেকেই তিনি 'সভ্যতার পিলসুজ' বা প্রান্তসমাজের ভাষা, জীবনচর্চাকে তাঁর সৃষ্টিকর্মের উপাদান ভাবছেন। এই জীবনী রচনার সমকালেই তাঁর সংগ্রহ থেকে সৃষ্টি হয় তাঁর প্রথম উপন্যাস *নটী* (১৯৫৭)। যদিও উপন্যাসটি প্রকাশের সমকালে বিশিষ্ট সমালোচক মতপ্রকাশ করেন, মহাশ্বেতা ভট্টাচার্য ইতিহাসে তেমন আগ্রহ দেখাননি? অর্থাৎ গতানুগতিক বলেই তিনি পরিচিত হয়েছেন। কিন্তু আমরা লক্ষ করতে পারি যে বিচিত্র জীবনকে উপন্যাসে ধরার চেষ্টা করছেন, জীবনযাত্রার সঙ্গে চরিত্রগুলির মুখের ভাষা প্রয়োগের বা লেখকসাপেক্ষ দৃষ্টিকোণের প্রয়োগ যেখানে থাকছে, সেখানে শব্দপ্রয়োগে সতর্ক তিনি। যেমন, *নটী*-তে।

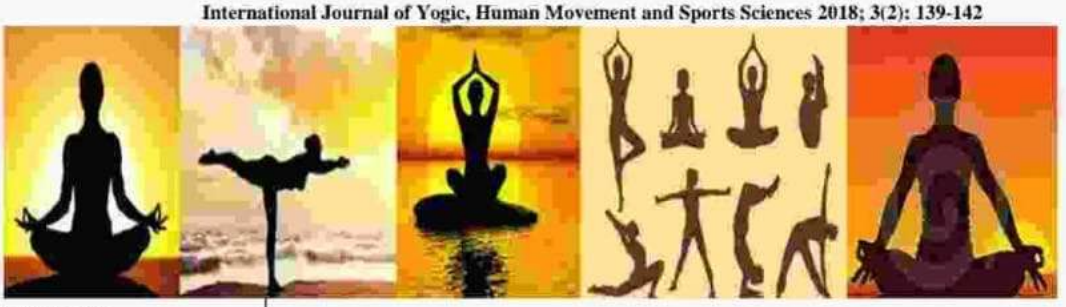
—কী?

—হ্যাঁ— আর সব জায়গায় লড়াই খতম হয়ে গিয়েছে খুদাবক্স। শুনেছি একমাত্র সেখানেই বড়ো জোরের সঙ্গে জ্বলে উঠেছে লড়াই। কানপুরে আর লড়াই হবে না। কানপুর অংরেজের হাতে চলে গিয়েছে।...'

ক্রমশ তিনি যত বেশি লেখক হয়ে উঠেছেন, সাহিত্যের বিশেষ দায় বলে সমাজকল্যাণ

Dr. Atanu Das, 2018-19

International Journal of Yogic, Human Movement and Sports Sciences 2018; 3(2): 139-142



ISSN: 2456-4419
Impact Factor: (RJIF): 5.18
Yoga 2018; 3(2): 139-142

www.theyogicjournal.com
Received: 10-05-2018
Accepted: 11-06-2018

Dr. Atanu Das
Assistant Professor, Deptt. of Physical Education, Rabindra Mahavidyalaya, Champadanga, Hooghly, West Bengal, India

Tufan Mete
M.P.Ed, Deptt. of Physical Education, Jadavpur University Kolkata, West Bengal, India

Correspondence
Pradyut Kumar Biswas
M.P.Ed, P.G.G.I.P.E, Banipur, West Bengal, India

A status survey in IPL match on television advertisements & comparative study print media coverage in different news paper

Dr. Atanu Das, Tufan Mete

Abstract
The mass media are an essential part of today's social life became the media created and transmit important cultural information. Cricket is the most popular sports in India by far. It is played in almost every states of India. The IPL is the most-attended cricket league in the India and all over the world and in 2014 ranked sixth by average attendance among all sports league. In 2010, the IPL became the first sporting event in the world to be broadcast live on You Tube. The purpose of the present study was to compare between two playing situation match and areas network status of advertisements given by the various companies through television considering an individual match and compare the effect of this two match on next day newspaper and collected some specific information about area of news cover (ANC) and area of pictorial coverage (APC) which covered by mass media. For the present study collected television advertisement, area of news cover (ANC) and area of pictorial coverage (APC) were selected as the measuring criteria. Mean and standard deviation were calculated for each variables and comparison was done between the male and female coverage using T-test. Only 0.05 level of significance was considered for the present study. Statistical mean data showed KKR vs RCB match received significantly higher ANC and APC than KXIP vs DD in the leading print media of West Bengal.

Keywords: news coverage, pictorial coverage, print media, IPL

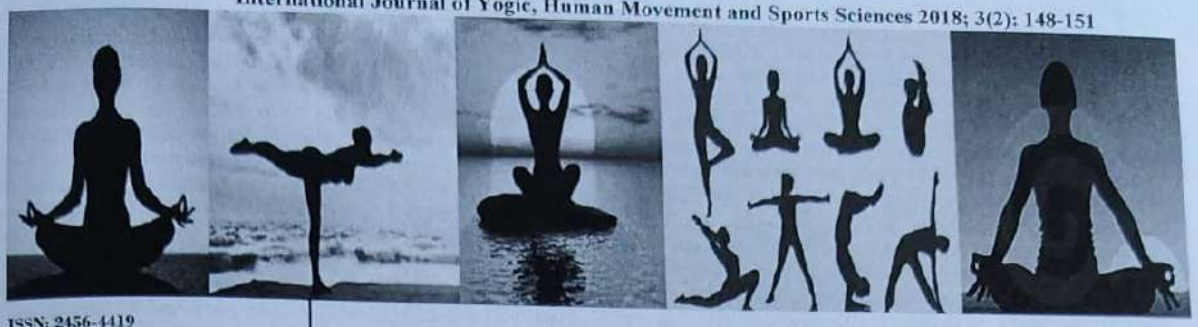
Introduction
Since sports can be watched on a variety of platforms, sports marketing can take many different forms. Teams sell advertising space inside their stadiums to marketers who want to purchase billboards and other print advertisement, while TV networks sell airtime during the events. Famous athletes also sign contracts to work as celebrity endorsers and lend their images to marketers.

Now 2018 the Indian Premier League (IPL), officially Vivo Indian Premier League for sponsorship reasons, is a professional Twenty20 cricket league in India contested during on from April to May of every year by teams representing Indian cities and some states.The Indian Premier League (IPL) is an annual Indian Twenty 20 cricket tournament, founded in 2008 by the BCCI. IPL is the most watched Twenty20 league in the world and in 2010 became the first sporting event to be broadcast live on YouTube. The last year brand value of the 2017 Indian Premier League was estimated to be around US$5.3 billion.

From 2008 to 2012, the title sponsor was DLF, India's largest real estate developer, who had secured the rights with a bid of ₹200 crore for five seasons. After the conclusion of the 2012 season, PepsiCo bought the title sponsorship rights for ₹396.8 crore for the subsequent five seasons. The BCCI then transferred the title sponsorship rights for the remaining two seasons of the contract to Chinese smartphone manufacturer Vivo for ₹190 crore. In June 2017, Vivo retained the rights for the next five seasons (2018–2022) with a winning bid of ₹2199 crore, in a deal more expensive than Barclays' Premier League title sponsorship contract between 2013 and 2016.

Sports marketing is a subdivision of marketing which focuses both on the promotion of sports events and teams as well as the promotion of other products and services through sporting events and sports teams. It is a service in which the element promoted can be a physical product or a brand name. The goal is to provide the client with strategies to promote the sport

International Journal of Yogic, Human Movement and Sports Sciences 2018; 3(2): 148-151



ISSN: 2456-4419
Impact Factor: (RJIF): 5.18
Yoga 2018; 3(2): 148-151

www.theyogicjournal.com
Received: 13-05-2018
Accepted: 14-06-2018

Mr. Tufan Mete
Tufan Mete, MP Ed. Deptt. of Physical Education, Jadavpur University Kolkata, West Bengal India

Dr. Atanu Das
Assistant Professor, Deptt. of Physical Education. Rabindra Mahavidyalaya, Champadanga. Hooghly, West Bengal, India

Correspondence
Mr. Tufan Mete
Tufan Mete, MP Ed. Deptt. of Physical Education, Jadavpur University Kolkata, West Bengal India

A comparison on selected motor fitness components & physiological characteristics between sprinters & jumpers

Mr. Tufan Mete and Dr. Atanu Das

Abstract
Today's many sports are played by the peoples in the world, but athletic is one of the most popular sports. Because of its tradition, its universality and prestige, as well as the wide range of skills and qualities that encompasses, it is the basic sports "par excellence". The purpose of the present study was to compare the selected motor fitness parameter, physiological characteristics between state level male sprinters and jumpers in West Bengal to achieve this objectives, total 40 athletes, (20 sprinters and 20 jumpers) were selected randomly from different athletics academy and coaching clubs areas in West Bengal. Their age ranged from 18 to 26 years as per their matriculation records. For the present study selected motor fitness component and physiological characteristics were selected as the measuring criteria. Mean and SD were used as descriptive statistics. Statistical t-test showed significant difference of leg explosive strength (2.2112>2.021) between sprinters and jumpers as the absolute value of the calculated t exceeds the critical value. Lastly the physiological characteristics showed similar uniqueness for both sprinters and jumpers.

Keywords: Motor fitness, Physiology, Sprinters and Jumpers

Introduction

Sports hold the prominent place in the modern scientific age. Today sports have become integral part of our human and social life. The game and sports have been indispensable to mankind and have been part of his culture. It is quite certain that physical activities have been a basic necessity of life, more than fun and diversion, for his survival depended on fitness. Gradually along with process of evolution, such activities have become more of play and part of culture of our people. They used sports and games as a means of transmitting the cultural heritage of their tribes. Games, sports and physical activities persisted despite the rise and fall of ancient civilizations as a culture heritage, which was passed on from one generation to another generation.

Athletics is a collection of sporting events that involve competitive running, jumping, throwing, and walking. The most common types of athletics competitions are track and field, road running, cross country running, and race walking. Today's many sports are played by the peoples in the world, but athletic is one of the most popular sports. Because of its tradition, its universality and prestige, as well as the wide range of skills and qualities that encompasses, it is the basic sports "par excellence". In addition, athletic constitute the most important element of the modern Olympic games.

According to Dr. Ivan Bayli, Dr. Richard Way, and Dr. Colin Higgs, motor skill and athletic development can be broken down into five categories: Stamina, Strength, Speed, Skill, and Flexibility. These categories are always trainable, but improve at a greater pace if the proper workouts are applied during the right periods of development. These periods are referred to as optimal windows of trainability. By training during the sensitivity period, strength and aerobic development can reach higher potentials than would be achieved by training according to chronological age. Your chronological age is your age in years, while your biological age is your age in relation to developmental landmarks such as your growth spurt and other developmental events. Coaches can take advantage of sensitive training periods by monitoring

ISSN: 0972-3978

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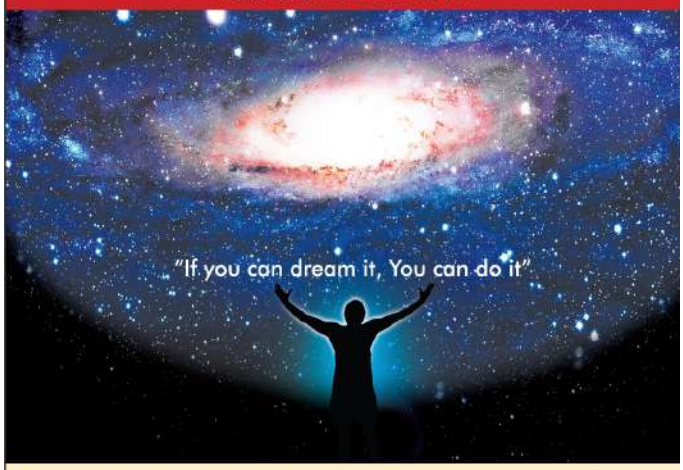
Volume: 25, Issue 1 ● November 2018



A Peer-Reviewed Biannual Journal of Library and Information Science in English Language devoted to the Publication of Original Developments in the Research and Practice of Information Management and Information Science Published by Jadavpur University since 1967.

Website: http://libsc.jdvu.ac.in/lis

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Dr. Pronobi Porel, 2018-19

Rare Books vs. Value of Rare Books: Analysis of Viewpoints from Rare Book Specialists

Pronobi Porel and Udayan Bhattacharya

Present study identifies various viewpoints from Rare Book Specialists to find any relation among criteria of rare books and value of rare books. By analyzing the factors given in the viewpoints of 10 specialists, it is revealed that factors involved in rare book identification are always not directly related to the fixing of prices of those books. It also concludes that all the criteria are dependent on each other in most of the cases.

Keywords: *Rare book, Antique book, Value of rare book, Dust jacket, Old book, Rarity, Early printing, Rare Book Specialists*

1 Introduction

It is very tricky to define a "rare book". A book becomes "rare" when it is both hard to find and highly required. In the context of rare book market, both the supply side and the demand side must be at extreme points for a book to qualify its rarity. For example, a book published in 1850 will be treated as "rare" if it has sufficient demand. In case of a rare book, the word "old" is relative – because the only books old enough to be highly sought after just for their age are those printed in the 1400s, the earliest years of printed books in the West (Romney, 2017). Generally a rare book "can mean any one of the three different things depending on the sense in which it is used. Two of these meanings those used in a narrow, conditional sense to indicate merely that a particular volume is either not plentiful, or that it possesses some quality distinguishing it as being unusually excellent or meritorious can be banished at once from consideration. Neither of these restricted meanings can be properly conveyed by our phrase, unless one of the other is expressly stipulated for or inferentially suggested by (Howes, 1957).

Pronobi Porel, Librarian, Rabindra Mahavidyalaya, Champadanga, Hooghly, West Bengal and Research Scholar, Department of Library & Information Science, Jadavpur University, Kolkata-32. E-Mail: khanpronobi@gmail.com

Udayan Bhattacharya, Professor and Head, Dept. of Library & Information Science, Jadavpur University, Kolkata- 700032. E-Mail: udayanbhattacharya1967 @hotmail.com

Dr. Atanu Das, 2018-19

International Journal of Movement Education and Social Science
Peer Reviewed and Indexed Journal (UGC Listed No. 41683)
IJMESS Vol. 8 Issue 1 (March 2019)
ISSN: 2278-0793 (Print) & 2321-2279 (Online)
Impact Factor 5.62
www.ijmess.org

COMPARATIVE STUDY OF PRINT MEDIA COVERAGE OF INDIAN ATHLETES IN GOLD COAST 2018 COMMONWEALTH GAMES

Dr. Atanu Das, Assistant Professor
Rabindra Mahavidyalaya, Champadanga, Hooghly, West Bengal,
Mr. Tufan Mete, M.P.Ed Scholar
Jadavpur University Kolkata, West Bengal.

ABSTRACT

The Commonwealth Games are an international multi-sport event involving athletes from the Commonwealth of Nations. The Commonwealth Games is the most popular sports in India by far. Sports became the most interesting area of media coverage among different stream. Several studies reported about existence of gender disparity in the sports content of print media around the world. The purpose of the research was to find out the sports coverage in print media between male and female Indian athletes to participate in Gold Coast2018CWG.For this purpose the content of the sports coverage related with Gold Coast 2018 CWG in newspapers on and from 6th April to 16th April 2018 were analyzed from the angle of gender inequality in sports news publication. Four leading daily newspapers on Bengali and English published in Kolkata also in India were considered for this study. Variables considered in this study were area of news cover (ANC) and area of pictorial coverage (APC). Measurement was done by calculating the area in Sq. Cm. of the newspaper using simple geometric scale. Results revealed that mean values of ANC and APC for female athletes were higher than the male athletes. Results of this study were concluded that female athletes received significantly higher coverage in news writing and pictorial section than the male athletes of Gold Coast 2018 CWG. These findings may be considered as women empowerment in Indian sports scenario.

Keywords: News coverage, Pictorial coverage, Print media and CWG 2018.

INTRODUCTION

The ongoing phenomenon of media morphosis continues to make newspaper reading a pleasant experience and a rewarding pursuit for Indians despite the growing number of online news platforms. The demographic data in India inspires one to believe that the Indian print media is here to stay and continue to play a very important role in keeping the people informed, educated, and entertained, at least in the near future. Newspaper reading being a rewarding pursuit to its citizens is what a free media state desires to protect and promote.

Sport (British English) or sports (American English) includes all forms of competitive physical activity or games which, through casual or organized participation, aim to use, maintain or improve physical ability and skills while providing enjoyment to participants, and in some cases, entertainment for spectators. Hundreds of sports exist, from those between single contestants, through to those with hundreds of simultaneous participants, either in teams or competing as individuals. In certain sports such as racing, many contestants may compete, simultaneously or consecutively, with one winner; in others, the contest (a match) is

Dr. Rabiul Alam, 2018-19

Photochemical & Photobiological Sciences

PAPER

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Cite this: *Photochem. Photobiol. Sci.*, 2019, **18**, 242

A differentially selective probe for trivalent chemosensor upon single excitation with cell imaging application: potential applications in combinatorial logic circuit and memory devices†

Dipankar Das,[a] Rabiul Alam,[a] Atul Katarkar[b] and Mahammad Ali *[a,c]

A new rhodamine 6G-benzylamine-based sensor (L^1), having only hydrocarbon skeletons in the extended part, was synthesized and characterized by single-crystal X-ray crystallographic study. It exhibited excellent selective and sensitive recognition of trivalent metal ions M^{3+} (M = Fe, Al and Cr) over mono- and divalent and other trivalent metal ions. A large enhancement of the fluorescence intensity for Fe^{3+} (41-fold), Al^{3+} (31-fold) and Cr^{3+} (26-fold) was observed upon the addition of 3.0 equivalent of these metal ions into the probe in H_2O/CH_3CN (4 : 1, v/v, pH 7.2) with naked eye detection. The corresponding K_f values were evaluated to be 9.4×10^3 M^{-1} (Fe^{3+}), 1.34×10^4 M^{-1} (Al^{3+}) and 8.7×10^3 M^{-1} (Cr^{3+}). Quantum yields of the L^1, $[L^1-Fe^{3+}]$, $[L^1-Al^{3+}]$ and $[L^1-Cr^{3+}]$ complexes in H_2O/CH_3CN (4 : 1, v/v, pH 7.2) were found to be 0.012, 0.489, 0.376 and 0.310, respectively, using rhodamine-6G as standard. LODs for Fe^{3+}, Al^{3+} and Cr^{3+} were determined by 3σ methods and found to be 1.28, 1.34 and 2.28 μM, respectively. Cyanide ion scavenged Fe^{3+} from the $[Fe^{3+}-L^1]$ complex and quenched its fluorescence *via* its ring-closed spirolactam form. Advanced level molecular logic devices using different inputs (2 and 4 inputs) as advanced level logic gates and memory devices were constructed. The large enhancement in fluorescence emission of L^1 upon complexation with M^{3+} metal ions makes the probe suitable for the bio-imaging of M^{3+} (M = Fe, Al and Cr) in living cells.

Received 25th August 2018,
Accepted 31st October 2018
DOI: 10.1039/c8pp00381e
rsc.li/pps

Introduction

With the increase in urbanization and socioeconomic activities, unlike other pollutants like petroleum hydrocarbons and domestic and municipal litter, which may visibly build up in the environment, the traces of heavy metal ions increase the toxicity level to a higher extent in the environment and also cause harmful effects on human health. Nowadays, contamination by toxic metal ions is increasing due to leather tanning, electroplating, pigments, emissions from vehicular traffic gas exhausts, energy and fuel production, intensive agriculture and sludge dumping and from mining industries.

As a result, drinking water and food, especially in developing countries, with metal contamination is very much unsafe. So many researchers have tried to detect toxic metal ions, such as iron,[1] chromium,[2] aluminium,[3,4] lead,[5] silver,[6] cadmium,[7] zinc[8,9] and mercury,[10] in water and foods.

Among these trivalent metal ions, Fe^{3+}, Al^{3+} and Cr^{3+} have biological as well as environmental importance.[11–24] Fe^{3+} is not only the most abundant transition metal in cellular systems but also plays an important role in many metabolic pathways, such as oxygen transport processes in tissues, nerves signal conduction, cellular growth and tissue formation.[25] On the other hand, the excess accumulation of Fe^{3+} can lead to a variety of diseases, such as cell damage and organ dysfunction through the abnormal production of reactive oxygen species (ROS),[26,27] leading to Alzheimer's, Huntington's, Parkinson's *etc.* diseases.[28] Moreover, disruption of iron homeostasis can lead to a number of disease, such as cancer,[29] hepatitis[30] and neurodegenerative diseases.[31]

Cr^{3+} is an effective nutrient and gives immunity power to the human body. Cr^{3+} overdose is known to inflict a negative effect on normal enzymatic activities, and the cellular structure and function causing a disturbance in glucose levels and lipid metabolism, while a deficiency of Cr^{3+} in humans can cause maturity-onset diabetes and cardiovascular disease and nervous system disorders.[32,33] The Cr^{3+} ion, present in the

[a]Department of Chemistry Jadavpur University, Kolkata 700 032, India. E-mail: m_ali2062@yahoo.com; Fax: +91-33-2414-6223
[b]Department of Molecular & Human Genetics Division, CSIR-Indian Institute of Chemical Biology, 4 Raja S.C. Mullick Road, Kolkata-700032, India
[c]Vice-Chancellor, Aliah University, IIA/27, New Town, Kolkata 700160, India

†Electronic supplementary information (ESI) available. CCDC 1836133. For ESI and crystallographic data in CIF or other electronic format see DOI: 10.1039/c8pp00381e