AMRITA
VISHWA VIDYAPEETHAM

CENTRAL LIBRARY

Amritapuri Campus

Journal Abstracts

June 2026

Sl. No	Article	Author	Source	Year
1	Baire Category Theorem in Frames and Continuous Frame Homomorphisms	*Rajesh K. Thumbakara*	Bulletin of Kerala Mathematics Association Vol:19 No:2	2025

Abstract: we extend the classical Baire category theorem to the context of frames in the point- free topology. By reviewing existing definitions and introducing suitable notations of nowhere dense and dense elements within frames, we establish that in a bare frame. We also investigate the preservation of the Baire property under surjective homomorphisms. Our results bridge classical topology principles with algebraic frameworks, contributing to the foundational understanding of point-free topology.

Sl. No	Article	Author	Source	Year
2	Transformation of summation series Into product form using consecutive Number ratios	*Narinder Kumar Wadhawan*	Bulletin of Kerala Mathematics Association Vol:19 No:2	2025

Abstract: This paper introduces a novel approach to transforming finite and infinite additive series into finite and infinite product forms using Consecutive Number Ratios (CNRs). It demonstrates how functions traditionally expressed as summations can be restructured using a universal technique grounded in the identity ln {n/(n1)} approximation with 2/(2n1) equivalently (1/2) ln {(n+1)/(n1)} particularly when number n is large. The method leverages logarithmic approximations and scaling multipliers to reduce error, especially for terms with small denominators. It approximates CNR-based transformation with established mathematical constructs such as inverse hyperbolic and trigonometric functions or any other function. Extensive error analysis is performed, and empirical evidence shows how increasing a scaling factor m systematically reduces approximation errors. Further, the technique is extended to special functions and series like the sine, cosine, tanh, binomial, geometric, harmonic series, Riemann Zeta function providing elegant product equivalents even where such forms are not traditionally known. The paper presents practical applications in number theory, signal processing, cryptography, and quantum mechanics.

Sl. No	Article	Author	Source	Year
3	Pentasection of an arbitrary angle and the construction of non-constructible n-sided regular polygons using dynamic geometry	*Narinder Kumar Wadhawan*	Bulletin of Kerala Mathematics Association Vol:19 No:2	2025

Abstract: This paper leverages dynamic geometry, a modern branch of mathematics, to achieve the historically impossible pentasection–the division of an angle into five equal parts–using only an unmarked straightedge and compass. The objective is to overcome the classical impossibility through a geometric method. The approach constructs a right-angled triangle ABC with a unit-length perpendicular and an arbitrary angle C. Successive perpendiculars are drawn on the hypotenuse and base, achieving segment ratios related to the cosine of angle C. Ancient Greek mathematicians could not satisfy both these segment ratios and the trigonometric identity for cos (5C), which requires higher-degree curves beyond classical tools. Using dynamic variation, this paper satisfies the identity cos (5C)= 16GH– 20EF+ 5BD, thereby identifying angle C as the pentasector. An interactive figure based on this method using javaScript is also drawn and it not only demonstrates but actually performs pentasection of an angle. Further, this method enables the construction of non-constructible angles and regular polygons that were previously impossible under classical Greek constraints.

Sl. No	Article	Author	Source	Year
1	**In Search of a Revolutionary Modernism: The Art and Activism of Ritwik Kumar Ghatak**	*Subrata Sinha*	Social Scientist Vol: 53 No:9-10	2025

Abstract: Sudhindranath Datta, one of the post-Tagore modernist thinkers and poets of his time, penned his experience of watching a movie in his 1928 poem called 'At a Cinema' with these words:
Upon the white backdrop
Passes the imitation of life

In two dimensions,
The futile shadow of the shadow,
the memory of a fleeting moment,
Mimics reality ...
Classical harmony and truth are driven into far-off exile from those world-changing images. A string of flippant whims Roam screaming unfettered in the chaotic field In plebian vaunt.

Sl. No	Article	Author	Source	Year
2	**Beyond the Colonial Gaze: Culture, Ideology and Translation Practice**	*Sachidananda Mohanty*	Social Scientist Vol: 53 No:9-10	2025

Abstract: In recent decades, the liberal arts and social sciences have fruitfully come together to generate new meanings about literary/social texts and contexts. In this article, I shall raise the following question: What critical tools and theoretical approaches should we deploy while dealing with our 'tribal' texts and contexts in a more just, fair and egalitarian manner? What prism shall we look through while examining the larger issues of culture, ideology and translation practice? As a student of postcolonialism and translation studies that intersect with the social sciences, I shall invoke for my purpose, the durable insights of the translation theorist Lawrence Venuti, expounded in his seminal work, The Translator's Invisibility (Venuti 1995); 1 they provide us with a critical and theoretical toolkit and lens that could be used (in a suitably modified form) in the Indian Adivasi context. It may be argued that a creative balance between what Venuti calls 'domestication,' and 'foreignisation', namely 'adaptation of cultural context' or a 'culture-specific' 'foreignisation,' could be one fruitful manner translations functioned in the cross-cultural domain, one which is characterised by an asymmetry in power relations.

Sl. No	Article	Author	Source	Year
3	**Doubt, Dissent, and Nonconformity in Indian Tradition**	*O. P. Jaiswal*	Social Scientist Vol: 53 No:9-10	2025

Abstract: he tradition of doubt and dissent harks back in India to her earliest literature, to the celebrated Hymn of Creation, the Nāsadīya Sūkta of the Ṛigveda (10.129), a brilliant expression of the enigma of creation and existence. Instead of providing a definite answer, the Ṛigveda presents the mystery and leaves it at that, unanswered. Dogma is not a characteristic of the Rigvedic period. It does not know the Brahman in the sense reflected in the Upanishads dwell on. The purport of the Creation Hymn is simply perplexity, curiosity, and innocence. Philosophically it was the least dogmatic.

Sl. No	Article	Author	Source	Year
4	**Forming Laws for Curbing Costs: An Analysis of the Code on Wages in India**	*Anamitra Roychowdhury*	Social Scientist Vol: 53 No:9-10	2025

Abstract: ce the inception of the capitalist mode of production, it was clear to its early observers that the relationship between capital and labour is antagonistic. Although among Classical Political Economists, Karl Marx, through his demonstration of the origin of surplus value, brought this out most sharply, the conflict of interest between capital (as also land) and labour was fully perceived by even the most prominent advocate of capitalist growth, Adam Smith.

Sl. No	Article	Author	Source	Year
5	**Nature and Process of Relocation of Villages**	*Prakash Priyadarshi and Minaketan Behera*	Social Scientist Vol: 53 No:9-10	2025

Abstract: The advent of biodiversity conservation in contemporary environmentalism towards the end of the twentieth century (Zimmerer 2006) and its relationship with conventional methods of protecting areas for conservation purposes throughout the colonial era (Brockington 2002) have become a contentious discourse. Concerns regarding equity and justice have increased significantly. These concerns include how we distribute costs, benefits, rights, and responsibilities; how we give different cultures and beliefs a voice; and how we make trade-offs between current and future generations, individual rights and the greater good, and humans and non-humans (Shoreman-Ouimet and Kopnina 2015).

Sl. No	Article	Author	Source	Year
6	**Framing Epidemics through the Indian Cinematic Lens**	*Amrapali Sharma*	Social Scientist Vol: 53 No:9-10	2025

Abstract: The sources for this article are all in the public domain. The lists of films on epidemics that appeared in popular media outlets during the global Covid-19 outbreak offered a 'canon' of epidemic films from the Silent Film era to the 1990s. I have relied on both quantitative and qualitative analysis while examining my chosen archive of Indian films on epidemics produced between 2020–23. I compiled a dataset of around 40 films using publicly available sources, including online platforms such as Amazon Prime, Netflix, and YouTube, as well as media articles and curated lists from outlets like IMDb, Esquire, Vogue, and Hindustan Times. For analytical clarity, I divided the films into two phases: those produced during or after the first wave in 2020 and those from the second wave in 2021 through 2023.

Sl. No	Article	Author	Source	Year
1	Chemosensitivity profiling of colorectal cancer patient-derived organoids reveals heterogeneous responses to 5-fluorouracil	*Fuyuan Zhan, Sicheng Yan, Xuting Xu, Yuehong Zhu and Zhihong Ma*	Current Science Vol: 129 No:11	2025

Abstract: To establish patient-derived organoid (PDO) models from colorectal cancer (CRC) patients and evaluate their fidelity and utility in assessing 5-fluorouracil (5-FU) chemosensitivity. Tumour samples from 30 untreated CRC patients were cultured into PDOs. Successful models were validated by hematoxylin and eosin (HE) and immunohistochemical (IHC) staining for morphology and biomarker expression. RNA sequencing (RNA-seq) was performed to identify transcriptional changes. 5-FU sensitivity was tested using an ATP-based viability assay across early and late passages. Twenty-six PDO lines were successfully established (86.67% success rate) and retained the histopathological and molecular features of primary tumours. RNA-seq revealed significant dysregulation of extracellular matrix and immune-related pathways, consistent with the absence of a tumour microenvironment. 5-FU sensitivity varied widely among PDOs, with IC50 values ranging from 0.085 to 3.934 µg/ml in first-generation cultures and narrowing to 0.078–2.134 µg/ml by passage 4, implying enhanced drug efficacy under microenvironment-deficient conditions. CRC PDOs effectively recapitulate tumour characteristics and exhibit heterogeneous 5-FU responses, supporting their potential as personalised drug-testing platforms. However, the absence of tumour microenvironment components may influence sensitivity outcomes and should be considered in future applications.

Sl. No	Article	Author	Source	Year
2	Maize yield sensitivity to fall armyworm (Spodoptera frugiperda, J. E. Smith) and the adoption of IPM practices in Karnataka, India	*Prakash, K. N.*	Current Science Vol: 129 No:11	2025

Abstract: The increasing prevalence of the invasive fall armyworm (Spodoptera frugiperda) threatens global food security, as maize accounts for 36 per cent of the world's grain production. India, the fifth-largest maize producer, holds a strategic advantage in meeting global demand. The present study examined the sensitivity of maize yields to fall armyworm (FAW) infestations and the factors influencing the adoption of integrated pest management (IPM) practices in Karnataka, India, which is the leading maize-producing state. The Cobb-Douglas production function revealed a negative, although not statistically significant, but economically meaningful, effect of FAW infestation on maize productivity (407 kg/ha). In contrast, rainfall and technological progress had significant positive effects: each 1 mm increase in rainfall from the geometric mean raised productivity by 1.792 kg, while the trend variable had a coefficient of 51.887, highlighting the role of technological progress in boosting yields. The probit model identified key factors influencing IPM adoption, whereas the intensity of adoption was assessed using the negative binomial regression model. Maize productivity, farm size, off-farm income, education, training, and farming experience significantly influence both the adoption and intensity of IPM use. Promoting IPM in high productivity areas, targeting experienced farmers, and implementing strategies to enhance maize yields should be key policy priorities. Additionally, strengthening farmers' knowledge through training would be crucial for improving IPM adoption and managing pest risks.

Sl. No	Article	Author	Source	Year
3	Livelihood enhancement through IARI-improved wheat varieties in Northwestern Plain Zone and Central Zone of India	*Jana, Anirban; Sharma, Nishi*	Current Science Vol: 129 No:11	2025

Abstract: The present study's goal was to ascertain the function of the Indian Agricultural Research Institute (IARI)- improved wheat varieties on the livelihood enhancement of farmers in India's Central Zone (CZ) and Northwestern Plain Zone (NWPZ). A study was carried out in 2023, utilising a multi-stage sampling method to select 240 farmers, comprising 120 adopters of IARI wheat varieties and 120 non-adopters. Using the normalised ranking method, scale values were assigned to the indicators of livelihood security and livelihood assets. Subsequently, a livelihood security index (LSI) and a livelihood asset index (LAI) were constructed to analyse the effect of these factors on the farmers' livelihoods. Results showed that farmers of NWPZ who adopted IARI-improved wheat varieties had a mean LSI score of 0.81 and an LAI score of 0.97, and the mean LSI and LAI scores of CZ farmers who adopted IARI-improved wheat varieties were 0.83 and 1.02, respectively. Conversely, non-adopters of IARIimproved wheat varieties in NWPZ displayed a lower mean LSI score and mean LAI score of 0.65 and 0.86, respectively, while non-adopters in CZ had a mean LSI and LAI score of 0.65 and 0.93, respectively. Moreover, a strong correlation ($r = 0.89$ in NWPZ, $r = 0.86$ in CZ, $p < 0.05$) was found between LSI and LAI, highlighting the role of IARI varieties in enhancing livelihood security and assets, particularly in food and financial security. These findings may help researchers to determine how a single variety, as well as a value chain, affects the subsistence and overall livelihood of farmers.

Sl. No	Article	Author	Source	Year
4	Metabolome analysis of traditional kombucha and evaluation of its blending with black carrot juice	*Katyal, Priya; Kaur, Gurleen; Sharma, Heena; Kaur Natt, Simranpreet*	Current Science Vol: 129 No:11	2025

Abstract: Kombucha is a millennial beverage with great potential due to its functional claims and is prepared by fermentation of sweetened tea with symbiotic culture of bacteria and yeast (SCOBY). While its fermentation process has been extensively studied, blending kombucha with vegetable juices remains underexplored. In the present study, black carrot juice was incorporated into kombucha to enhance its physicochemical and sensory properties. Response surface methodology (RSM) optimization identified a formulation containing 20% black carrot juice and 1% spice mixture as the most effective, yielding maximum antioxidant activity (84.36%) and the highest sensory score (8.64). Additionally, metabolomic profiling of traditional kombucha, conducted using a gas chromatography–mass spectrometry (GC-MS) approach, revealed a diverse range of bioactive metabolites, including the novel detection of erythrono-1,4-lactone. These findings highlight the nutritional superiority of black carrot–blended kombucha and the therapeutic potential of kombucha in general.

Sl. No	Article	Author	Source	Year
5	Adoption and impact of remote sensing-based agrometeorological products in advisory services among farmers: a case study	*Silpa, P. S.; Varghese, Sini Susan; Nigam, Rahul; Ayyangar, Gayatri Vinodh; Chandra, Deep; Gopika, V.; Eknathrao Kadam, Yadav; Rajak, Dhani Ram; Bhattacharya, Bimal Kumar; Dakhore, Kailas Kamaji*	Current Science Vol: 129 No:11	2025

Abstract: The increasing unpredictability of daily weather patterns presents significant challenges for farming communities. Accurate and timely agro-meteorological information is essential for effective crop management, resource optimisation, and mitigation of

losses caused by erratic weather conditions. The Space Applications Centre of the Indian Space Research Organisation addresses these challenges by providing satellite-derived agro-meteorological products based on remote sensing, such as surface soil moisture, potential evapotranspiration, the normalised difference vegetation index (NDVI), predicted NDVI, land surface temperature, and the surface dryness index. These products are disseminated daily to six Agro-Met Field Units across India through the Visualisation of Earth observation Data and Archival System geoportal. The present study was designed to evaluate the adoption and impact of satellite-derived agro-meteorological products augmented with weather forecasts (Agro-Met advisories) during the 2022–23 kharif season in Parbhani district, a predominantly rainfed region in Maharashtra, India. Additionally, a quasi-experimental research design was employed, with surveys conducted among 60 farmers using Agro-Met Advisory Services (AAS farmers) and 60 farmers not utilising these services (non-AAS farmers). The study's findings revealed that AAS farmers frequently reference soil moisture and NDVI, and they significantly influence their agricultural decision-making. A comparative analysis indicates that the agricultural input cost for AAS farmers is lower than that of non-AAS farmers by 14.8% in soybean cultivation and 27.2% in cotton cultivation, indicating an economic benefit among AAS farmers. The present study emphasises enhancing farmers' awareness of meteorological parameters through fieldlevel training and capacity-building programs, bridging the gap between scientific knowledge and its application. The present study highlights the crucial role

Sl. No	Article	Author	Source	Year
6	Social responsibility of higher educational institutions: roles of government and private sectors in shaping sustainable societies	*Jit Kaur, Perminder; Agarwal, Monika; Pabreja, Kavita*	Current Science Vol: 129 No:11	2025

Abstract: The scientific academic institutions are an essential component of society, performing a dual role of education and research to catalyse changes in society. Establishing a well-formulated social science responsibility (SSR) framework is crucial for effective academic-society collaboration. The present study investigates the existing SSR ecosystem in India through a cross-sectional survey of scientific institutes. To gain a comprehensive understanding of ecosystem secondary data on global practices across was also analysed. The findings of studies have clearly indicated that, driven by a desire to give back to society, positive intentions, rather than

mere checkbox exercisers, were observed among researchers at different levels. However, the lack of financial access and methodology poses the greatest hindrance to the effective implementation of SSR guidelines. The study has also examined the existing practices of corporate social responsibility in India and their connection with academic institutions. The study proposes a collaborative framework design for holistic societal progress through a collaborative approach with educational institutions and the industrial sector