

## **New studies on Kerala**

Young Scholars' Forum, GIFT

Led by Munawwara Zubair

Research Scholar, Gulati Institute of Finance and Taxation, Thiruvananthapuram.

### **Economics**

#### **Scopus indexed**

1. Coley, C., Sheshadri, S., & Devanathan, S. (2022). Men's experience of women's empowerment and gender equality: A phenomenological study in Kerala, India. *Global Social Welfare*. <https://doi.org/10.1007/s40609-022-00262-7>

This paper is about how men perceive women's empowerment, how these perceptions form, and the factors that influence a decision-making calculus in determining whether or not men will support such social changes. This paper takes up this issue and presents the experiences of men whose wives recently graduated from a women's empowerment project. The structure of their experience is explored using phenomenological analysis methods, and a set of important themes are defined that can be used to improve future interventions in a similar context. Notable themes identified include men's ability to acknowledge injustices faced by women and the level of understanding of and beliefs around women's role in society.

2. Hari K, H., & P A, K. (2022). The Politics of Representating Dalit Women: A Study of the Newspaper Khabar Lahariya and the Documentary Writing with Fire. *Journal of International Women's Studies*, 24(7),

Redefining power is the only means to redress the gender bias that women have had to endure in a male-dominated society. women's writing is the only way to emphasise women's perspectives and end stereotyping of women and their opinions in literature. This

transformation is required not only in the literary world, but there is also an urgent need for the realistic representation of women in every section of society. . Dalit women also need the same reassurance and reception in the media so that their lives are also represented without any bias. Visual media often are biased because Dalit women's realities are still ignored in the mainstream media. The public domains of arts, politics, and media are still not offering a space for Dalit women. Meera is the chief editor of Khabar Lahariya, India's only newspaper run by Dalit women. The documentary writing with Fire, directed by Rintu Thomas and Sushmit Ghosh, showcases the redefinition of representation and the power of Dalit women. This study focuses on how a group of Dalit women can enter and break the traditions of the news media in India. This study tries to identify the possibility of redefining power politics through an inclusion of the Dalit community.

3. Senthamizh Sankar, S., Anandh, K. S., & Rama, M. (2022). Examining the influence of various factors that affect construction professionals lifestyle – a case of Tamil Nadu and Kerala. *Lecture Notes in Civil Engineering*, 625–634. [https://doi.org/10.1007/978-3-031-12011-4\\_50](https://doi.org/10.1007/978-3-031-12011-4_50)

The construction sector has a low quality of lifestyle when compared to other occupations due to a variety of problems associated with their work. The work-life balance is also harmed as a result of the unhealthy lifestyle prevalent among construction professionals. The factors that contribute to the scarcity of construction personnel ready to work in their sector are investigated in this study. This study reveals several common factors affecting construction professionals' lifestyles to improve their quality of life. The association between each factor and the more relevant factors was discovered using statistical analysis. A healthier lifestyle will increase an employee's productivity and, as a result, the company's worth.

4. Naznin, P. H., Anandu, V. G., Panackel, L. S., & Ravishankar, A. U. (2022). Estimation of willingness to pay for reducing road accident risk using route choice model. *Lecture Notes in Civil Engineering*, 1075–1086. [https://doi.org/10.1007/978-3-031-12011-4\\_91](https://doi.org/10.1007/978-3-031-12011-4_91)

The proportionality of road accidents with urbanisation triggers road accident cost analysis, as a prime component in the planning and designing of road projects. proper quantification of accidents and its analysis requires expert approaches. This study deals with the cost of road accidents in Thiruvananthapuram city as it houses the most critical accident spots in Kerala. Essential stretches of roads to be analysed were identified using Accident Severity Index

(ASI). A Stated Preference (SP) survey was conducted to estimate the trip-wise mean willingness to pay value (WTP) of road users of the selected road stretches based on logit models. Travel time, travel costs, and accident rates were taken as the attributes. The willingness to pay value to avoid a critical accident estimated from the final model was found higher for short trip settings which indicates the importance of safety of the short frequent trips among the road users compared to the longer trip setting.

### **Other Journals**

1. G., D. D., Viswambaran, V., & M.K., P. (2022). Impact of covid-19 on livelihood and health experiences of migrant labourers in Kerala, India. *CASTE/A Global Journal on Social Exclusion*, 3(2), 299–318. <https://doi.org/10.26812/caste.v3i2.447>

Covid-19 is the most consequential crisis in our memory and has affected everyone irrespective of class, caste, gender and ethnicity. Inter-State Migrant Workers was one such community who were at the intersections of marginalisation. The paper explores the confluence of elements that helped Kerala to manage the Covid-19 pandemic during the first wave, March to May 2020. The study adopted mixed method, about 132 migrant workers were interviewed using a structured schedule and 10 case studies were collected. The study finds that a majority, 92 per cent are SC/ST/ OBC, education level less than high school and economically very poor. The study examined the measures taken by the government to address the crisis and how it helped to address the need and concerns of the migrant workers. It also captured the life, livelihood, healthcare utilisation and overall experience of interstate Dalit migrant workers who reside in Kerala.

2. Baby, A. (2022). An Overview of Socio-Economic Condition Of Paniya Community In Aralam Farm Of Kannur District, Kerala. *EPRA International Journal of Economics, Business and Management Studies (EBMS)*, 9(11), 1-9.

Tribals, the original inhabitants of India have contributed much to the nation's culture, history and heritage. Under the constitutional provisions of Directive Principles, the States' major concern for tribes has been their welfare and development. It is ironic that despite a large number of well-meaning constitutional provisions aimed at protecting and safeguarding the welfare and interest of the tribal communities, the process of marginalisation of the tribal's has gone unabated. In this context, the paper has made an overview on the socio-

economic conditions of tribals belonging to the Paniyas (Paniyas), which has the lowest standard of living, even though being the bulk of the tribal populace in Kerala

3. Varghese, B., & Chennattuserry, J. C. (2023). Community resilience and crisis management: Stakeholders perspective of the tourism industry. *Tourism and Hospitality in Asia: Crisis, Resilience and Recovery*, 21–33. [https://doi.org/10.1007/978-981-19-5763-5\\_2](https://doi.org/10.1007/978-981-19-5763-5_2)

The study examines varied impacts affecting the tourism industry and addressed negative impacts like the Economic crisis and loss of brand image in the post-crisis situation. The study explores mechanisms to re-establish the brand image during the restoration phase and has indicated possible strategies for disaster risk reduction and makes suggestions which helps in the recovery phase of an affected region.

## **Environment**

### **Scopus indexed**

1. Arumugam, T., Kinattinkara, S., Kannithottathil, S., Velusamy, S., Krishna, M., Shanmugamoorthy, M., Sivakumar, V., & Boobalakrishnan, K. (2022). Comparative assessment of groundwater quality indices of Kannur district, Kerala, India using multivariate statistical approaches and GIS. *Environmental Monitoring and Assessment*, 195(1), 1–30. <https://doi.org/10.1007/s10661-022-10538-2>

The aim of the study is to determine the groundwater characteristics of rural and industrial zones in the Kannur region. To better understand the link between water quality parameters, multivariate statistical analysis approaches such as principal component analysis (PCA), hierarchical cluster analysis (HCA), correlation matrix analysis (CMA), and Pearson correlation bivariate one-tailed analysis (PCBOTA) were used to analyse the inter-relationship of data. By comparing the data with BIS and WHO standards, it is clear that groundwater in Kannur district is of good quality. GIS based WQI maps were obtained and utilised to gain a better knowledge of the study area's past and present water quality status.

2. Vasudevan, N., Ramanathan, K., Parvathy, R. S., Ramesh, A., & Joshy K, V. (2022). Landscape degradation: The August 2019 Puthumala Landslide in Kerala, India. *Lecture Notes in Civil Engineering*, 1–11. [https://doi.org/10.1007/978-981-19-5077-3\\_1](https://doi.org/10.1007/978-981-19-5077-3_1)

The Western Ghats of Kerala State in particular have been witnessing several fatal and devastating landslides, especially during the annual monsoons. Both natural causes and anthropogenic activity, individually or in combination, are responsible for creating conducive conditions for the occurrence of landslides. The study conducts a preliminary field investigation at the Puthumala landslide site in Wayanad District, Kerala. The slide occurred on August 8, 2019, killing 17 people and leading to an entire village being abandoned, making it one of the most catastrophic landslides in Kerala.

3. Lekshmi, S., & Sudhakumar, J. (2022). A study on geopolymer mortar containing fly ash and dredged clay. *Lecture Notes in Civil Engineering*, 997–1005. [https://doi.org/10.1007/978-3-031-12011-4\\_84](https://doi.org/10.1007/978-3-031-12011-4_84)

In this study, an effort is made to experimentally evaluate the durability properties of fly ash-dredged clay based geopolymer mortar. Low calcium fly ash was used in the study as source material for geopolymer. The fly ash was replaced with low grade waste clay dumped by dredging. The dredged waste clay was collected from Koyilandy, Calicut, Kerala. The geopolymer mortar was synthesised using 7 M NaOH solution with sodium silicate to sodium hydroxide ratio of 2.5 and percentage of dredged clay used was 25% at 75°C of oven curing temperature. The durability performances in terms of water absorption, abrasion resistance, acid attack resistance and sulphate attack resistance were evaluated.

4. Saha, S., Saha, A., Roy, B., Sarkar, R., Bhardwaj, D., & Kundu, B. (2022). Integrating the particle swarm optimization (PSO) with machine learning methods for improving the accuracy of the landslide susceptibility model. *Earth Science Informatics*, 15(4), 2637–2662. <https://doi.org/10.1007/s12145-022-00878-5>

Landslide is one of the serious concerns due to which, the safety and sustainability of hilly areas across the globe, become vulnerable. Preparation of landslide susceptibility maps (LSMs) with the sound methods is a preliminary task for the safe and sustainable land use planning and design. In this research, Particle Swarm Optimization (PSO) was integrated with the pre-existing machine learning techniques such as Artificial Neural Network (ANN), Radial Basis Functional Neural Network (RBF-net), Reduced Error Pruning Tree (REPTree), Random Tree, Multivariate Adaptive Regression Splines (MARS) and M5tree to increase their efficiency and accuracy of prediction of landslide susceptibility in upper catchment of

Meenachil river of Kerala. A total of 189 landslide locations were analysed and datasets were obtained.

5. KT, A., & Firoz C, M. (2023). Critical appraisal and evaluation of India's first Carbon Neutral Community Project – a case of Meenangadi Panchayat, Kerala, India. *Springer Climate*, 465–492. [https://doi.org/10.1007/978-3-031-15501-7\\_18](https://doi.org/10.1007/978-3-031-15501-7_18)

The paper critically values India's first carbon-neutral community project that targeted developing the Meenangadi Grama Panchayat (Village) of Wayanad district, of Kerala as a model carbon-neutral panchayat. With an in-depth passive and participatory observation, this research analysed every initiative taken by the core team to achieve the target within the planned time frame. The overall performance level of the project was evaluated on the premise of appropriateness, affordability, and implementation rate. The analysis reveals that the project lacked coherence and effectiveness and could not achieve its goal within the timeframe.

6. Anoop, V. S., & George, S. (2022). Population genetic structure and evolutionary demographic patterns of *Phrynoderma Karaavali*, an edible frog species of Kerala, India. *Journal of Genetics*, 102(1), 1–12. <https://doi.org/10.1007/s12041-022-01407-5>

The paper examines the population genetic and demographic structure of an edible frog species, *Phrynoderma karaavali*. Frogs from 11 sites show high mt DNA haplotype and nDNA diversity which indicates a stable or expanding population. The evolutionary demographic pattern suggests population expansion across its geographical range, even though the species is still subject to poaching. Two major population clusters were observed at the northern and southern end of the species range. Gene flow occurs despite geographic barriers. Genetic distance increases with geographical distance. *P. karaavali* diverged from its sister species in *Phrynoderma* around 11 mya in the late Miocene.

### **Other journals**

1. Shubhasree, A., Sankaran, P., & Raghu, C. (2022). UAV image analysis of flooded area using convolutional neural networks. *2022 International Conference on Connected Systems & Intelligence (CSI)*, 01–07. <https://doi.org/10.1109/csi54720.2022.9924038>

India has seen numerous flood events with severe infra structural damages and fatalities in recent years. UAV images that capture a bird's eye view of the flooded area can be utilized for situation assessment and feedback. This work utilizes existing publicly available video data to create annotated data set of flooded areas in Kerala with 3 classes. This data set is then used to train YOLOv3 and YOLOv4 and the resulting models are analyzed. Within this framework the network behaviour is studied by varying the loss function utilized and by feeding patches of images as input. This resulted in models that have high average precision values. This work provides a framework which can be utilized to generate focused data set to expand the number of classes involved and the situations analyzed.

2. Mathew, S. O. J. O. M. O. N., & Radhika, R. (2022). Status of heavy metal contamination in major rivers of Kerala, South India – A Review. *UTTAR PRADESH JOURNAL OF ZOOLOGY*, 23–31. <https://doi.org/10.56557/upjz/2022/v43i213207>

Kerala is home to 44 rivers, most of which are now polluted to a great extent due to anthropogenic activities. This paper reviews the research work on the heavy metal status of 10 rivers in Kerala. The levels of heavy metals such as lead (Pb), cadmium (Cd), copper (Cu), mercury (Hg), iron (Fe), manganese (Mn), nickel (Ni) etc. are increasing substantially in rivers of Kerala. Heavy metals cause irrevocable damage to the biota, when they are transferred from water bodies to the food chain via assimilation, bioaccumulation and bio methylation processes.

## **Agriculture**

### **Scopus indexed**

1. Bijith, P., Ramith, M., Megha, T., Shimod, K. P., & Pradeep, M. N. (2022). Shrimp Farms as a threat to mangrove forests in Kannur district of Kerala, India. *Wetlands Ecology and Management*, 30(6), 1281–1289. <https://doi.org/10.1007/s11273-022-09896-y>

Mangroves are one of the most productive, diverse ecosystems on the planet and serve as a protective barrier for coastal areas. Shrimps have a productive correlation with mangroves habitat, thereby large-scale shrimp farming pose a serious threat to mangroves ecosystems. The present study aims to estimate the total area under shrimp farming in the intertidal regions of Kannur district. The study finds that there are 140 shrimp ponds, which contributes to a total area of 524.4 ha and the active shrimp farming area in the district is 524.4 ha in

2020. The traditional shrimp farming method accounts for 60.6% of the total farmed area while non-traditional shrimp farming accounts for 36.9% of the total farmed area; both types are expanding fast in the district

### **Other journals**

1. Suresh, N., & Sreedaya, G. S. (2022). Perception of farmers towards crop insurance schemes in Kerala, India. *Asian Journal of Agricultural Extension, Economics & Sociology*, 437–447. <https://doi.org/10.9734/ajaees/2022/v40i111729>

The paper examines the perception of farmers towards crop insurance schemes in Kerala's three selected districts namely Kottayam, Malappuram and Idukki. The findings of the study showed that the majority of the farmers (69.17%) had medium perception followed by low (18.33%) and high (12.50 %) perception. Characteristics like education, operational landholding, credit orientation and decision making ability had significant association with their perception regarding crop insurance. The study also revealed a significant difference between the central and state crop insurance schemes.

### **Education**

#### **Chapters published in books**

1. Kumaran, A. (2022). Sustainability and education: Restoring dignity of communities in the classrooms and beyond. *Advances in Research*, 106–115. <https://doi.org/10.9734/air/2022/v23i6925>

The study is examining the sustainable aspects of the National Education Policy 2020. A mixed methods approach is used in the paper combining qualitative methods like ethnography and quantitative metrics such as the basic statistical indicators. The paper argues that provision of vocational education is within the ambit of SDG4 and to formulate it, reconciliation of community centric learning practices and indigenous knowledge with modern day curriculum is necessary.

## Health

### Chapters published in books

1. Francis, J., Dasgupta, B., Abraham, G. K., & Deb, M. (2022). Prediction of covid-19 cases in Kerala based on meteorological parameters using BILSTM technique. *Meta Heuristic Techniques in Software Engineering and Its Applications*, 338–347. [https://doi.org/10.1007/978-3-031-11713-8\\_34](https://doi.org/10.1007/978-3-031-11713-8_34)

India has recorded a record high of more than 40,000 new cases on April 30, 2021. The article aims to study the possible relationship of Covid19 transmission with meteorological parameters namely humidity, temperature, rain, speed, and pressure. The weather data has been collected from NASA archives. The daily number of confirmed covid cases, deaths and recovered were extracted from a public website (<https://data.covid19india.org/>). Aggregated daily data were combined for a specific state for approximately nine months from 01-01-2021 and converted into a multivariate time series data frame. A Bi-LSTM architecture was built that gives the highest accuracy in predicting the number of confirmed covid cases for n days based on given data.

### Scopus Indexed

1. Chacko, F. M., Santhosh, A., Philip, S. M., & Kumaraswamy, S. Awareness on Hazardous Noise, Importance of Ear Protective Devices and Safety among Carpenters in Kerala. *International Journal of Research in Engineering and Science (IJRES)*, **602-607**

The current study examines the awareness of hazardous noise, importance of ear protective devices and safety among carpenters in Kerala. In order to thoroughly assess the awareness of hazardous noise, importance of ear protective devices and safety, the study used questionnaires consist of 15 closed set questionnaires administered on Carpenters. According to the statistical analysis, Carpenters are not well informed on safety, the need for ear protective devices, and harmful noise. Carpenters require training on safety, ear protective devices, and hazardous noise in order to do their jobs effectively.

2. Anish, T. S., Valampampil, M. J., Rahul, A., Saini, P., Prajitha, K. C., Suresh, M. M., Reghukumar, A., & Kumar, N. P. (2022). Region-specific improvisation on who case definition and environmental risk factors associated with dengue: A case–control analysis

from Kerala, India. *Transactions of the Royal Society of Tropical Medicine and Hygiene*. <https://doi.org/10.1093/trstmh/trac102>

Our aim was to study the test positivity rate of the World Health Organization (WHO) 2009 probable dengue case definition and to suggest region-specific improvisations to it. The study also analyses the socio demographic and environmental risk factors of dengue fever in South Kerala. Arthralgia, palmar erythema and rashes have high discriminatory power for identifying dengue. Redness of eyes, altered consciousness, abdominal distension and chills were found to moderately discriminate dengue. The adjusted analysis showed the presence of mosquito breeding sites, solid waste dumping and open water drainage in the compound as significant predictors.

3. Manju, S. K., Anilkumar, T. R., Vysakh, G., Leena, B. K., Lekshminarayan, V., Kumar, P. G., & Shenoy, T. K. (2022). A case-control study of the association of leptin gene polymorphisms with plasma leptin levels and obesity in the Kerala population. *Journal of Obesity*, 2022, 1–11. <https://doi.org/10.1155/2022/1040650>

The study aims to draw relationships, if any, between the polymorphisms in the human leptin gene and the association of sequence variants with obesity among the population in Kerala. Socioeconomic aspects and anthropometric measurements along with plasma glucose, insulin, leptin, and lipid profile of 148 study participants were collected for the study. It is found that the common Single Nucleotide Polymorphism (SNP) of 5'-UTR of LEP – 2548G/A was found to be present in the study population with “A” variant as dominant allele. SNPs of exons in LEP were found to be rare but associated with morbid obesity and altered levels of serum leptin in the study population in Kerala

4. Akula, S. C., Singh, P., Ul Hameed, W., Talukdar, R., Patlolla, S., & Murad, M. (2022). Diabetic emotional burden and post covid-19 health care services for Diabetic patient: A new dimension of access to healthcare. *Review of Diabetic Studies*, 18(4), 187–196. <https://doi.org/10.1900/rds.2022.18.187>

This study aims to investigate the role of diabetic emotional burden and healthcare services as a moderator in the relationship between interpersonal distress, physician & nurse distress, and access to healthcare. The population of this study was the patients with diabetes in different public and private hospitals from Kerala. The study concludes diabetic emotional burden and health care services positively moderate the relationship between interpersonal distress and

access to healthcare. This study has practical and theoretical implications concerned to improve the access to the healthcare system for diabetic patients in Kerala and the rest of the world.

### Other journals

1. Gupta, I., & Ranjan, A. (2022). Health Investments to reduce health inequities in India: Do we need more evidence? *CASTE / A Global Journal on Social Exclusion*, 3(2), 365–382. <https://doi.org/10.26812/caste.v3i2.441>

Large inequities in health outcomes and treatment-seeking behaviour continue to exist in India, across households, states and residence. A few large populous states continue to contribute the most to multi-dimensional poverty, including indicators for health outcomes. A significant contributor is the high out-of-pocket spending that continues to be a key feature of India's health sector, accompanied by one of the lowest levels of public investment on health. The COVID pandemic has brought out sharply the lack of preparedness of the country and its states to face a catastrophe of this kind. A resilient health sector can only be built by bridging the various gaps in key inputs into the sector – infrastructure, personnel, supplies and training. This investment is likely to bring down the demand for health services in the private sector and reduce spending on health services by households by making these affordable and accessible. A quantum jump in investment would also be required to offer health coverage that is truly universal in scope and coverage.

2. Dona, D., & Nimisha, V. (2022). The relationship between uric acid and dyslipidemia in type 2 diabetic patients with urolithiasis. *Baghdad Journal of Biochemistry and Applied Biological Sciences*. <https://doi.org/10.47419/bjbabs.v3i04.138>

Type 2 diabetes mellitus (DM) is characterised by insulin resistance, which can increase the risk of kidney stone formation. This study aimed to find out the association between serum levels of uric acid and lipid profile in type 2 DM patients with urolithiasis in comparison to those without. A significant increase was found in uric acid, urea, serum uric acid to creatinine ratio, and triglyceride glucose index level in type 2 DM urolithiasis cases as compared to DM cases without urolithiasis. It was also found that total cholesterol, triglycerides, LDL-cholesterol, and VLDL-cholesterol levels were significantly elevated and HDL-cholesterol was significantly decreased in urolithiasis cases

3. Areekal, B., Joseph, N. C., Rajan, M. P., Ravindran, R. K., Vijayan, A. S., & Vanlalhriatpuii, E. (2022). Household secondary attack rate in SARS-COV-2 infection during the second wave of the COVID-19 pandemic in South India. *Journal of Family Medicine and Primary Care*, *11*(10), 6268–6273. [https://doi.org/10.4103/jfmmpc.jfmmpc\\_452\\_22](https://doi.org/10.4103/jfmmpc.jfmmpc_452_22)

Coronavirus disease 2019 (COVID-19) has become a major public health problem since its inception disrupting public life and crippling health systems. The mutated variant of the causative virus, Delta, has been notorious in causing rapid upsurge in cases compared to the Alpha variant. The current study tries to find out the household secondary attack rate (HSAR) of COVID-19 and factors associated with it during the second wave of cases in Kerala. The HSAR among household contacts was 59.1%. The risk of acquiring COVID infection among household contacts was higher among contacts of symptomatic index cases. Index cases were having a home isolation P value of 0.001 and an odds ratio of 3.2, with delay in COVID-19 testing for index cases with a P value of 0.006.

4. Sheeja, M. (2022). A Study on the Influence of Muscle Relaxation Therapy in Decreasing Stress on Elderly Individuals Staying at Trivandrum, Kerala. *Journal of Coastal Life Medicine*, *10*, 756-762.

The paper examines the effect of muscle relaxation therapy in decreasing the stress of elderly individuals residing at old age homes in the district of Trivandrum. Demographic data and the stress related data is collected from the participants. Influence of progressive muscle relaxation therapy is evaluated in pre-test and post-test groups. The stress levels of seniors were analysed by frequency and percentage distribution based on the selected demographic variable. The effectiveness of progressive muscle relaxation in reducing stress was evaluated using a paired t-test. A Chi-square test was performed to see if there was a connection between their preferred demographic variables and their stress levels

5. Pillai, S. K., & Fhausiya, V. K. (2022). A cross-sectional study on the frequency and risk factors for neonatal hypoglycemia in babies born in rural Kerala. *Journal of Family Medicine and Primary Care*, *11*(11), 6949–6954. [https://doi.org/10.4103/jfmmpc.jfmmpc\\_439\\_22](https://doi.org/10.4103/jfmmpc.jfmmpc_439_22)

The paper aims to find out the frequency and risk factors of hypoglycemia and its relation to feeding in babies of GDM (Gestational diabetes mellitus) mothers. A single-centre, observational study was carried out among 160 consecutively born babies born to mothers with gestational diabetes. Incidence of hypoglycaemia in exclusively breastfed babies was

only 10.5% compared to those on formula feeds when breastfeeding was contraindicated due to medical reasons and where the incidence was found to be 33.3%. Successful breastfeeding is hence shown to reduce the risk of hypoglycaemia and therefore preparation for breastfeeding should begin right from the antenatal period.