Ontario International Development Agency
Canada

22nd International Conference on Sustainable Development 2025

September 3-4, 2025

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OIDA International Journal of Sustainable Development
Indexed in SCOPUS and DOAJ

Accepted Abstracts

22nd International Conference on Sustainable Development 2025
is jointly presented by
International Centre for Interdisciplinary Research in Law (ICIRL),
Centre for Research in Social Justice and Policy (CRSJP) at Laurentian University and
Ontario International Development Agency (OIDA) in Canada.
Department of Studies and Research in Political Science, Tumkur University,
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University of Sri Jayewardenepura,
Sri Lanka
and
Department of Civil Engineering
Open University of Sri Lanka (OUSL),
Sri Lanka.

Venue
BMICH
Bandaranayake Memorial International Conference Hall
Bauddhaloka Mawatha,
Colombo,
Sri Lanka

Ref: 001/LKA/25

Commerce Women Entrepreneurs and Recovery

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Abstract
The detailed examination of such a subject will be carried out on the basis of a fundamental problem, which will thus serve as a guideline in the presentation of the ideas which should underlie the approach. In this case, we are talking about the question of trade serving the inclusion and entrepreneurship of women in order to better promote their emancipation. In other words, how do trade standards or rules, through an inclusive and non-exclusivist policy, work to better take into account the role and integration of women in the Multilateral Trading System?

Thus the problem of method is at the heart of any scientific work as it is true that the method sheds light on the hypotheses and determines the conclusions, our approach will be ordered with a few exceptions around the use of the analytical and exegetical but also comparative method. . It is understood as the analysis, interpretation and explanation of the rules of law, particularly those contained in the various legal texts of the GATT and the WTO.

As for the expected results,firstly, like the GSP, special preferences annihilate the MFN clause. If this questioning is justified in the "bananas" jurisprudence by the dismantling of both the Community development cooperation policy and special preferences, it is not justified by the enabling clause. Indeed,knowr the Lomé convention weighed a sword of Damocles which made the status quo fragile. Long immune to any challenge, Lomé's trade regime was shaken in the early 1990s. Its gradual questioning opened the way to a plethora of litigation which continues to this day. The contentious inflation caused by the "banana" regime revealed the ineffectiveness of a defunct dispute settlement system which pushed the Contracting Parties to strengthen the power of sanction through the creation of an integrated judicial body.As a result, WTO jurisprudence had to deal with a symbolic case which legally established the dismantling of specific preferences. It's the Banana affair. But the preferences were able to be maintained for a transitional period until December 2007, thanks to a waiver granted at the WTO Ministerial Conference in Doha. Indeed, the significance of the Banana affair is considerable for the ACP countries. After a long period of tolerance of special preferences incompatible with the principle of non-discrimination within the framework of the GATT, the WTO recognized their illegality and thus opened a period of renewal of the MFN clause.Then, at the level of special preferences, this dissonance was especially marked in the Lomé Conventions, by an asymmetric system of positive discrimination of the ACP in trade preferences and by a transition regime derogating from the principles of multilateralism and the original trade instruments.

The latter takes into account the legal debate for a normalization of EU-WTO relations, namely the conflicts arbitrated by the WTO and the commercial policy according to the Cotonou Agreement, that is to say the exception to normalization . The era of the new WTO will be that of calling into question discriminatory special preferences. Some developing countries rightly do not condone other countries in the same category benefiting from preferential trade arrangements that contradict multilateral trade rules. This is the beginning of the dismantling of special preferences. The European preferential offer has known two eras and two different regimes. If the Yaoundé conventions were symmetrical and based on reciprocity, the Lomé conventions were asymmetrical and implied non-reciprocal trade preferences, discriminatory and contrary to GATT, although tolerated. The observation of the illegality of trade preferences arising from the Lomé conventions placed the European communities before an alternative: maintain the preferences and therefore non-reciprocity by extending them to other developing countries or withdraw them to leave all potential beneficiaries on the hook. an equal footing. The second term of the alternative was chosen, with the proposal of a new commercial partnership. This could now only be conceived in perfect compliance with the provisions of the WTO. It is in this sense that the Cotonou Convention was signed. Even if it provides a transition period, its commercial dimension is oriented towards global reciprocity.

Keywords: GATT, MFN clause, Special preferences, Women entrepreneurship, WTO

Fostering active learner participation in higher education: an action research project

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Abstract

Social policies and educational policies are deeply interconnected, and educational policies shape the knowledge, skills, and attitudes of individuals in a society, which in turn influence social policies. Therefore, educational policies should be introduced to foster various social skills including lifelong independent and collaborative learning because such skills help individuals to thrive in an ever-changing world and competitive job market. It in this context that active learner participation becomes a cornerstone of effective pedagogy. Yet, students remain passive in classrooms, especially in language classrooms including English as a Second Language (ESL) classrooms due to several reasons such as fear of making mistakes, teacher-centered pedagogical approaches, lack of confidence, and cultural influences. Grounded in Vygotsky's Sociocultural Theory and Bandura's Self-Efficacy Theory, the present study adapted Kurt Lewin's Spiral Steps for Action Research Model to investigate how different actions, namely evaluating peers and evaluating and offering feedback to peers during oral presentations enhanced active participation in an ESL classroom. In spite of some challenges such as student resistance, time constraints, friendship biases and lack of training in offering feedback, peer evaluation has the ability to empower pupils and foster not only a sense of responsibility and ownership for their own learning but also independent learning and collaborative learning with peers. Employing mixed methods approach, the study collected data from 48 participants enrolled in an ESL program at a university in Sri Lanka. Statistical analysis of student responses revealed a strong preference for peer evaluation with feedback. Qualitative data also confirmed that students preferred peer evaluation with feedback, which ensured active participation and accountability, enhanced learning opportunities, collaborative learning and knowledge sharing opportunities, increased attention and focus, motivation and confidence building. The findings emphasize the importance of incorporating peer evaluation with feedback as regular classroom practice. Educators can equip the students with the necessary peer evaluation skills to maximize the effectiveness of peer evaluation. Also, policy makers and ESL course designers can introduce peer evaluation to improve critical thinking, and create more interactive, engaging and reflective classroom environments. Overall, this study underscores the transformative potential of peer evaluation in ESL education to enhance independent evaluative skills, professional collaboration and teamwork, communication skills, negotiation skills and listening skills which play vital roles in the modern corporate world. Future research could explore the long-term effects of peer evaluation in diverse educational settings, cultural contexts, and subject areas.

Keywords: peer evaluation and feedback; self-efficacy theory; social skills; sociocultural theory; spiral steps for action research

Sustainable Future with the Development of a Secure Mini-bus Taxi Pick-up System for Children going to and coming from Schools

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Abstract: Today's children are the future of any society. Ensuring their future sustainability is very critical especially these days when their trips going to school and coming from school has become dangerous due to insecure taxis used for transport. The taxi business coupled with increased population has brought up various security issues. A particular group of taxi clients that is more susceptible is children in need of taxi to and from schools. Children's safety has been reported as a concern in South Africa, children frequently go missing leaving parents devastated. It has been reported in other studies that public transportation is not safe in South Africa especially in urban areas. Various methods have been conducted in an effort to ensure that children are safe when using taxis and taxi applications, however, the methods can tend to be inadequate as the children still go missing. In this research paper, an application is developed that will improve children's safety when using the taxi application systems. The Design Science research method has been adopted in this research and various data collection methods have been used. Furthermore, it details the business, functional and non-functional requirements. The proposed application will include the biometric technology to improve safety of children as it is known that the safety of women and children in South Africa is a huge concern. The application is implemented in the mobile app and the desktop app which allows the child and the driver to scan their fingers in departure and destination. The steps towards evaluation of the system by a group of participants are also highlighted. The change to the use of the system leading to possible safer environment for future generation in the course of gaining education is a step in the right direction towards a sustainable future.

Keywords: mini-bus taxis, school children, single passenger taxi, biometric system, design science.

Influence of Morphological Characteristics on the Sustainability of Underserved Settlements: A Case Study in *Jaffna* Municipality and its Urban Fringe, Sri Lanka.

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Abstract
Underserved settlements are crucial in providing housing and employment opportunities for the poor urban and their spontaneous spatial patterns pose challenges to sustainable urban development. This study examines the morphological characteristics of underserved settlements and their influence on the sustainability in the *Jaffna* Municipal area and its urban fringe in Sri Lanka. Primary data were collected through a structured questionnaire survey with 341 underserved settlements using a stratified random sampling technique. Focus group discussions and interviews were made with representatives of the community-based organizations and ground-level officers, and administrative officers of government institutions, local authorities, academics, and social activists respectively. The secondary spatial and statistical data were obtained from Google Earth and government departments. SPSS statistical software was used to analyze the data collected via a questionnaire survey using descriptive, and inferential statistics, while ArcGIS 10.4 software was used for geo- spatial analysis. Morphology results showed that underserved settlements are distributed in clusters with R values ≤ 0.16; consist a wide range of building patterns, specifically linear, triangular, rectangular, circular, regular, and irregular where the average building density is 107.48 underserved settlements/km^2 and average building coverage is 0.30 km^2. Building coverage accounts for 99.12% of the variation in building density, whereas building area accounts for 96.74% of the variation; euclidean building distance accounts for 10.30% of the variation and road density accounts for 17.53%. Furthermore, this study found that building area, coverage, and road density have a positive relationship with building density, whereas euclidean building distance has a negative relationship. The underserved settlements' building forms do not comply with building regulations, resulting in a faulty layout and a congested built environment. The majority of settlements do not obtain permission to build their houses because they have less than six perches of land, are occupying land reservations, or lack legal land tenure. The disordered expansion of densely built-up houses, noncompliance with building regulations, poorly accessible road networks, and lack of environmental protection all have negative effects on the environment, health, sanitation, economy, and socio-cultural values of not only underserved settlements but also the entire urban environment. As a result, the structure and form of underserved settlements must be optimised to drive sustainable development.

Keywords: Morphological characteristics, Sustainability, Underserved settlements, Urban environment, Urban fringe

Fostering Inter-cultural Understanding through Translations
A Study of Japanese Literary Translations into Sinhala

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Abstract:
Literary translations can directly cater to sustainable development by fostering intercultural understanding, tolerance, mutual respect and the cultural diversity of the speakers of both the source language and the target language. Intercultural understanding is a powerful means of promoting multiple SDGs like Quality Education (SDG4), Peace, Justice and Strong Institutions (SDG16) and Partnership for the Goals (SDG17) by advocating collaboration, inclusion in diversity. Global partnerships could be strengthened through various ways and literature is an incomparably effective and sophisticated medium to cultivate such understanding. Translating vocabulary and concepts specific to a certain culture or ethnic group is never an easy task as it involves deep knowledge and understanding of the source language as well as techniques of expressing it in the target language. How to translate cultural aspects of the source language without disturbing the natural flow of the story is a key factor when it comes to fiction. Translatorship has been seen as an individuation of collective schemes related to personal history, the collective history of the source culture, the collective history of the target culture, and their intersections. Further, it is highlighted that Translatorship can be redefined in terms of habitus. In this study, a few translated fictions by different translators from Japanese into Sinhala were studied focusing on references to food, clothes, festivals, and religious aspects. The study utilized a content analysis method, and it was captured that each translator has used a different translation method when rendering cultural aspects. Some had added in-text solutions like additions and paraphrasing, whereas some had used out-of-text solutions, i.e., a glossary to give extra cultural knowledge, without disturbing the natural flow of the story. Some had used typological cultural terms. Subsequent to analysis, it was observed that the existence and the identity of the translator emanating from the translated work differ depending on the methods they have adopted to translate cultural aspects. As a common factor in all the translated works analysed, it could be said that translators appear to play an extremely vital social role as cultural ambassadors since the translators in the analysed works have paid extra attention to unique aspects of Japanese culture and how best those factors could be translated into Sinhala in a way the readers could grasp a better understanding of those unique cultural aspects. All in all, it could be said that literary translations could play a major role in fostering inter-cultural understanding that promotes sustainable development and therefore more attention and focus should be given to research on methodologies and techniques utilized in translating cultural aspects.

Ref: 006/LKA/25

Ensuring equity and accessibility of universal health coverage of Climate Changed Marginalized Population: Establishing linkage system with GOVT. Health Care and Family Planning Services for the Bede Community in Bangladesh

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Abstract
Background: About 750,000 Bede people, locally known as "river gypsies" in Bangladesh. Professionally their ancestors were snake charmers and herbal medicine makers but because of climate change, digitalization, and urbanization, most of them are detached from their heritage. The Bede community is a miserable example of early marriage and childbearing, and the non-use of FP methods is a social practice. The Bede couple is not registered in the public family planning system and has not received immunization services. In addition, universal health coverage (UHC) and family planning (FP) services are limited within this community. The Directorate General of Family Planning (DGFP) and Health Services (DGHS), Bangladesh collaborated with the USAID-funded Shukhi Jibon project to increase access to UHC and FP services for this community. The Govt. program implementation is running in the Madaripur district in Bangladesh. All kinds of people get services from the DGHS and DGFP except the Bede community. The members of Bede community were not aware of the Govt. health and family planning services. And there are no service provisions for the Bede communities. There is all over the darkness below the lamp. Besides, the Bede community are living with the other locality, where the whole population are getting all kind of Govt. and Non-Govt. facilities except for the Bede community.

Methods: The objective of the assessment was to explore key themes of the Bede community regarding UHC and FP services. Action research was conducted using qualitative approaches at Shibchor of Madaripur district, Bangladesh where the total Bede population were 1600. Among them, 297 married (114 men, 183 women) between the ages of 13 to 39 years were interviewed. Simple random and purposive sampling techniques were applied to the selected person. 18 Key Informant Interviews, 18 Focus Group Discussions, 64 In Depth Interviews as well as observation were done. Data were rearranged through thematic observation. A checklist and open-ended questionnaires were developed for the data collection tools. The interviews were noted and transcribed for data analysis.

Results: As a result of continuous advocacy done by the project, UHC and FP services were made available through the combined action of DGFP and DGHS by organizing satellite clinics, courtyard sessions, etc. Before introducing and implementing the intervention, the people were almost unaware of the FP and UHC services. Almost all the respondents were unaware of SRH and FP services. The mean age at marriage for girls and boys was 13 and 15 years respectively. The mean age at first child for girls was 14 years and 92% of girls already have given birth by the age of 17 years. Two third of respondents (67%) mentioned the current use of modern contraceptives (86% OCP, 14% Condom). Two unskilled Bede women were conducted NVD here. They believed that a grilled placenta saved a newborn baby's life during the delivery period. Still, they have lots of misconceptions and myths about FP methods and general medical treatment.

Conclusion: Continuous advocacy with DGFP and DGHS resulted in introducing this marginalized community to mainstream UHC/SRH/FP services. There need to be more awareness sessions, and engaging community-level stakeholders and leaders, conducting door-to-door visits, uthan-boithok can increase their awareness. Govt. and Non-Govt. stakeholders need to give more emphasis on them. Need a concrete population data set on them and need to explore and assess their knowledge and demand in the SRHR sector. Local-level Govt. will keep separate programs with them to solve their problem. However, further support from the government and stakeholders is required to ensure quality UHC/SRH/FP services and overcome the existing harmful practices and social norms.

Keywords: , Access, Climate, Equity, Equality, Inclusion, Inclusive, Marginalized, River Gypsies , Universal health coverage

Financial Risk Management and Resilience Planning in Smart Cities: A Case of Bhubaneswar and Rourkela, Odissa, India

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Abstract: The concept of "Smart Cities" is increasingly dominating the conversation around the future of urban environments. As more and more cities rush to embrace this concept, Smart City projects are rapidly outpacing the policies governing their development. While Smart City projects present incredible opportunities for municipalities to modernize their operations and improve efficiency and cost-effectiveness, these projects also introduce a range of security challenges. Incorporating holistic risk management principles into Smart City planning efforts will promote long-term resilience of Smart Cities. The cities are experiencing rapid growth due to the transformation of rural areas into urban areas, triggered by better employment opportunities, social benefits, modern infrastructure and facilities, and by natural population growth. 50 percent of the world's population lives in cities, which occupy barely 2 % of the land area. Rapid urbanization in India has intensified the need for resilient municipal finances to ensure sustainable and inclusive city growth.

The architects and planners of cities were faced with challenges to designing smart systems that promote the efficient use of resources, which could translate to sustainable development. Keeping the aforesaid knowledge, researchers have chosen Bhubaneswar and Rourkela Smart Cities for further detailed investigation. The study advocates for the integration of disaster resilience principles into the Smart Cities Mission of India, and comparative evaluation of financial resilience in two of Odisha State's flagship Smart Cities-Bhubaneswar and Rourkela Smart Cities through the lens of Sustainable Development Goal-11 (SDG 11) and the Smart Cities Mission (SCM), Government of India. Leveraging secondary data from municipal budgets, SCM progress reports, and state finance documents for the fiscal years 2018-2024, the authors try to develop a Sustainable Financial Resilience Framework anchored by a Financial Health Index (FHI). Principal Component Analysis (PCA) has been employed to identify and weight key fiscal indicators, including own-revenue mobilization, grant dependency, operational efficiency, and debt sustainability in the system. City-specific FHI scores reveal contrasting fiscal profiles: Bhubaneswar city demonstrates higher revenue diversification but displays growing grant reliance, whereas Rourkela city streamlined expenditure control is offset by limited own-source revenues. Further, Trend analysis underscores recurring challenges, overdependence on external funding, uneven capital expenditure planning, and insufficient fiscal autonomy, that compromise long-term resilience. A policy critique of SCM implementation stresses gaps in embedding financial resilience metrics into budgetary processes and urban governance.

The research study tried to reinforce municipal financial health through three proposed strategic interventions: (i) *enhance revenue autonomy through property-tax reforms and user-fee optimization;* (ii) *institutionalize data-driven budget planning via real-time financial dashboards*; and (iii) *integrate resilience-oriented performance indicators into SCM evaluation*. Based on the findings, the study concludes with recommendations to guide policymakers, urban planners, and development partners by strengthening the fiscal foundations of India's smart cities, towards inclusive, safe, resilient, and sustainable urban development.

Keywords: Urbanization, Smart city, FHI, SCM, Municipal finance, Urban resilience, Sustainable development.

Climate Beliefs and Attitudes and Firms' Pollution

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Abstract
Climate beliefs and attitudes (CBA) can shape individual and collective behaviors in response to climate change, influencing the effectiveness of climate-related policies and communication. As environmental sustainability has become a desirable corporate characteristic, a growing body of literature has emerged on sustainability-related social norms (Cahan et al., 2017; Pinkse and Busch, 2013). In addition to regulations and market expectations, firms face pressures from these informal factors that foster sustainability practices (Joshi and Li, 2016). For example, customers' beliefs and attitudes about the importance of corporate sustainability can be related to their buying behaviors (Collins et al., 2007), potentially exerting societal pressures on firm behaviors. Given the increased awareness about climate change, we study the influence of CBA, which can persuade both corporate and individual behaviors in managing climate risk (Aghion et al., 2023; Mase et al., 2017; Zhang et al., 2024). Interestingly, despite the widespread knowledge of the causes and consequences of climate change, a significant portion of people remain skeptical about its impact on weather and the role that human actions play in it, according to the 2021 Yale Climate Opinion Maps (YCOM) survey. This skepticism, embedded in CBA as an important environmental social norm, is considered a key hurdle in initiating actions to mitigate climate change consequences (Hornsey et al., 2016) and can thus create variation in corporate responses to climate risk exposure.

We construct a county-level measure of CBA using the YCOM survey from 2014 to 2021. Following Zhang et al. (2024), we use the first principal component extracted from the Principal Component Analysis (PCA) based on the responses to three core questions on climate beliefs in the survey as our primary measure of CBA. These three questions capture the umbrella construct of CBA while avoiding noise from other survey questions that may be linked to personal interests (e.g., carbon tax) and complicate the true CBA. We then examine the relationship between CBA and firms' toxic releases from 2014-2021 at both the plant and firm levels.[1] Consistent with our prediction, we find that firms' toxic releases are significantly lower (higher) in counties with higher (lower) CBA. At the plant level, after controlling for county-level characteristics such as GDP and population, which may partially reflect local CBA and community pressure on firms' pollution, a one standard deviation increase in CBA is associated with a 3.54% decrease in toxic releases. At the firm level, since many firms separate production facilities physically from their headquarters (Henderson and Ono, 2008), we consider both the weighted-average CBA across the geographical distribution of firms' plants and the CBA of firms' headquarters location. Similar to the plant-level results, the weighted-average CBA has a significant and negative influence on firm-level toxic releases.

Furthermore, we demonstrate that firms pollute more in counties with lower CBA even when faced with high climate risk and that when facing low climate risk, firms are less constrained by social beliefs in climate change when producing pollution, exhibiting certain reactiveness to climate risk and opportunism in managing the cost of pollution control. These findings underscore the significance of collectively held environmental beliefs and values in shaping corporate environmental accountability beyond regulatory requirements.

Keywords: Climate beliefs and attitudes; Climate risk; Corporate/firms' pollution; Environmental accountability; Pollution control; Social norms;

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[1] Toxic releases are reported to the TRI at the plant-level each year. We thus aggregate annual plant-level toxic releases to obtain firm-level toxic releases. Our final sample consists of 27,174 plant-year observations with 4,583 unique plants and 3,345 (3,268) firm-year observations with 499 (495) unique firms based on the weighted-average CBA (firms' headquarters CBA).

Bridging the Digital Divide for Sustainable Development: A Study of Digitalization and Inclusive Growth among the Jenu Kuruba Tribe in Mysore

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Abstract
Digitalization is a powerful enabler of sustainable development. However, the digital revolution has yet to touch the lives of most of the people in marginalized communities, especially the tribal majority. This paper is an attempt to study the nature and effects of digital inclusion among a tribe, namely the Jenu Kuruba, in the Mysore District of Karnataka, India. Based on survey data from 160 people, the paper evaluates access to digital technology, digital literacy, and the social and economic benefits of digital inclusion. Findings indicate that while access to basic digital tools has improved, gaps in literacy, infrastructure, and affordability persist. The article concludes with policy proposals for addressing the digital divide through inclusive growth and social equity.

Keywords: Digital Divide, Digital Inclusion, Digital Literacy, ICT, Inclusive Growth

Assessing the ESG Framework on Sustainable Manufacturing in Maharaja Soap Industry: A Case Study

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Abstract: ESG frameworks have emerged as critical pillars in redefining sustainable development in the 21st century. This paper explores the evolving landscape of Environmental, Social, and Governance initiatives in the Manufacturing world. Utilizing Maharaja Soap Industry's (MSI) as a compelling case study, this paper delves into the industry's rich history and background and examines the recent sustainable development in the Manufacturing industry. This study assesses the industry's commitment to sustainable manufacturing practices over 15 years, from 2010 to 2025, and how ESG frameworks have been adopted. This analysis encompasses three vital dimensions of ESG, providing comprehensive commitment to sustainability, particularly through the lens of United Nations Localisation of Sustainable Development Goals in II Tier city like Davanagere, as the Global Sustainability Goals require contextual adoption at the Local level.

This research focuses on how the Manufacturing Enterprise in Karnataka, India, integrates ESG principles into its operations from 2010 to 2025. The comparative analysis of the study explores sustainability in Renewable energy, Waste Management, Social initiatives including Employee welfare, Gender inclusion in the manufacturing sector, Community development and Governance aspects such as transparency, Ethical compliance, ESG reporting, Documentation, ESG auditing, and Stakeholder engagement. Using Primary data collected through structured questionnaire and interviews with workers and supervisors and management, along with the secondary data analysis, this study reveals Industry's gradual shift towards responsible business practices, The findings highlight the role of Medium-Scale Industry in achieving sustainable development a paradigm shift from "Top to Bottom", to "Bottom to Top approach" at the Grassroots level, and offers insights into replicable ESG strategies for similar sectors. This case study serves as an important model for integrating Sustainable practices into Manufacturing processes while addressing the Local development priorities ESG practices in shaping a more Sustainable, Equitable and Accountable future for the Manufacturing sectors and beyond.

Keywords: Environmental, Governance, Social, Sustainable Development Goals Stakeholder Engagement.

A new Characterization of Peak biting times of *Aedes aegypti* and *Aedes albopictus* using the human baited double net trap technique in the Colombo District

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Abstract

Introduction: The human landing catch(HLC) technique is widely regarded as the most effective method for monitoring the biting activity of *Aedes* mosquitoes. However its use is ethically unacceptable due to its high risk of human exposure to pathogens. In this study we used an alternative method, The Human- Baited Double Net Trap (HDN), to determine temporal biting activity of *Aedes aegypti* and *Aedes albopictus* the primary vectors of Dengue and Chikungunya

Method: The study was conducted from July 2021 to July 2023 (across 12 replicates) in Bopeththa Grama Niladhari Divison (GND), located in the Gothatuwa Medical Officer of Health (MOH) area in the Colombo District. Mosquitoes were collected using human baited double net traps (HND) laced one indoor and one outdoor location on haphazardly selected premises.   A single bait was used in each trap. Hourly collections were performed from 5.00 a.m.-7.00 p.m. using a mouth aspirator by a single trained collector. Temperature and Humidity were recorded during the study period. The average proportion of mosquitoes collected each hour was compared to identify peak biting times of the two species. Comparison of indoor and outdoor all data were analyzed using statistic software.

Result: A total of 121 (7 indoor and 42 outdoor) Ae aegypti and 104 (13 indoor and 91 outdoor)
Ae albopictus were collected during the study. There were two biting peaks coinciding for the two species. The morning peak was during 6-10 a.m. (total of 36 Ae aegypti and 44 Ae albopictus) and the evening peak was during 3-7 p.m. (total of 61 Ae. aegypti and 74 Ae. albopictus)

Conclusion: With mosquiti activity peaking in the pre-sunset hours, Ae. aegypti and Ae. albopictus catches of HDN should be performed in the hours before dark. Indoor premises are considered to be the most suitable biting place for Ae. aegypti mosquitoes and also outdoor premises suitable biting place for Ae.alboictus therefore routine Aedes vector surveillance and monitoring need to be streamlined for the space spraying. Essential thing both indoor and outdoor should be needed.

Artificial Intelligence and Poverty Reduction: How AI Applications and Digital Solutions Can Help, Particularly in Developing Countries

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Abstract

Artificial Intelligence (AI) is increasingly recognised as a transformative force in addressing complex global challenges, including poverty and human well-being through innovative solutions in healthcare, education, agriculture, financial services, and governance. With the expansion of digital infrastructure, increased internet penetration, and the growing availability of large datasets, AI presents novel opportunities to reduce poverty through innovative and scalable solutions. These include advancements in healthcare delivery, personalised education, climate-resilient agriculture, inclusive financial services, and transparent. This chapter explores the multifaceted ways in which AI applications are contributing to poverty alleviation and wellbeing enhancement, particularly in developing countries. It draws on recent literature to critically examine the potential of AI to foster inclusive and equitable development, while also addressing the socio-ethical, technical, and policy challenges that may hinder progress. The paper underscores the importance of human-centred and context-sensitive AI approaches that align with the Sustainable Development Goals (SDGs), ensuring that technological advancements translate into tangible improvements in people's lives. Drawing from the latest literature, we examine the potential, challenges, and policy considerations necessary for inclusive AI-driven development. Key policy considerations and recommendations are provided to guide governments, development organisations, and other stakeholders in leveraging AI for sustainable poverty reduction and enhanced wellbeing.

Keywords: Artificial Intelligence, Developing Countries, Digital Solutions, Inclusive Development, Innovation, Poverty Reduction, Sustainable Development, Wellbeing.

Linking Entrepreneurship, Environmental Justice, and Sustainable Development: Pathways to Ecological and Social Transformation.

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Abstract
This paper explores the interconnections between entrepreneurship, environmental justice, and sustainable development, highlighting how innovative enterprise models can drive ecological and social transformation. In the face of climate change, resource depletion, and growing socio-economic inequalities, entrepreneurs play a critical role in fostering inclusive and sustainable growth. The study underscores how green entrepreneurship and social enterprises can advance environmental justice by addressing the disproportionate environmental burdens faced by marginalised communities. This paper will be conceptual/theoretical in nature, building an argument based on literature review, theory, and critical reflection of secondary data. By integrating ethical environmental practices with inclusive economic strategies, entrepreneurial ventures can contribute to the achievement of the United Nations Sustainable Development Goals (SDGs). Drawing on recent case studies and theoretical frameworks, the paper advocates for a holistic approach to entrepreneurship that prioritises equity, environmental stewardship, and long-term resilience, particularly in developing contexts where the need for sustainable livelihoods and environmental protection is most urgent.

Adoption of climate change techniques for poverty alleviation in sustainable smallholder poultry production in Nigeria

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Abstract
Climate change has a perceived detrimental impact on smallholder poultry production in Nigeria. The enigma of climate change negatively affects poultry productivity and increase food insecurity and raise the risk of poverty. This study analysed the adaptation of climate change techniques and its role in poverty alleviation among smallholder poultry farmers in Nigeria. An exploratory research design was employed, and a multistage sampling procedure used to select 360 farmers from the study area. The findings revealed that access to extension services and membership in cooperative societies significantly influenced the adoption of climate resilience strategies. Poultry farmers who produced chicken meat had 0.224 and 0.296 lower odds than farmers who produced both live birds and eggs as specific products from poultry. Furthermore, results indicated that 82% of farmers who specialised in chicken meat production were aware of climate adaptation strategies. Approximately 88% of farmers have adjusted by using various climate resilience strategies, such as technological practices (e.g., water ventilation), veterinary interventions (e.g., use of medications and vitamins), and indigenous knowledge systems (e.g., traditional practices). These adaptation strategies were reported to have a substantial influence on poverty reduction among smallholder poultry farmers. This study recommends active dissemination of climate adaptation strategies through public awareness programmes to farmers utilising extension services, input suppliers, and cooperative networks. Additionally, the establishment of a Smallholder Poultry Innovation Platform is proposed to foster collaboration, enhance innovation uptake, and support sustainable and climate-resilient poultry production systems in Nigeria. The study aligns well with global development priorities (e.g., SDG 1 - No Poverty, SDG 2 - Zero Hunger, and SDG 13 - Climate Action).

Keywords: Adaptation-strategies; Adoption; Climate-change; Poverty eradication; Smallholder poultry production.

Ref: 020/LKA/25

Fostering Innovation through the Knowledge Economy's Entrepreneurial Ecosystem

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Abstract

In the cutting edge time of new information economy, advancement and business enterprise exercises are viewed as the absolute most significant elements impacting monetary improvement, both in the national and worldwide level. The paper endeavors to characterize the fundamental elements which decide the advancement and enterprising ability of a nation and to examine the suggestions on financial development, to be specific, to which degree monetary improvement relies upon the nearness of a domain good for advancement, in view of the endogenous advancement capacities, This paper endeavors to look at the job of business and those of advancement exercises (specialized change, innovative work and dispersion of innovation) and the impacts of monetary development process. The nature of human capital is a key supporter of advancement and financial improvement and is turning into even more significant in the challenge of the information society. As exchange administrations and data develops, the economy of today will progressively call for workers with new aptitudes and skills past those in the conventional economy. In this manner, Knowledge Economy, adjusted to the requirements of the work advertise, and the improvement of aptitudes and employability are vital to proceeded with financial development and expanded business.

Keywords: Advancement capacities, Cutting edge, Employability, Financial development, Knowledge Economy,

Combating criminality for sustainable food security through a decolonised agricultural education curriculum: Insights from faculty staffs in selected Nigerian universities

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Abstract

The education curriculum in any milieu is dynamic and a continuous process consistently evolves. However, the influence of Western philosophy on educational curricula raises concerns about the harmful impact of crime and food insecurity on Nigeria's food sustainability. This study employed a mixed research technique to investigate insights of staffs in selected Nigerian universities on perceptions of decolonising educational curricula in Nigeria to reduce crime and food insecurity. Quantitative data were obtained virtually on Google Forms from 165 faculty staff in Nigerian universities. An explorative review of literature indexed in Scopus, Google Scholar, and ResearchGate, as well as local and international organisation reports, was used to synthesise qualitative data for the study. Key themes include colonialism, decolonisation, curriculum, indigenous knowledge, sustainability, criminology, food insecurity, and teaching and research staff. For the quantitative data, we used percentages, mean scores, and a linear regression model, while the qualitative data was analysed thematically. Findings suggested the adoption of an African-driven epistemology education curriculum to curb crime and reduce food insecurity. Thematic analysis suggests a curriculum that incorporates traditional farming techniques to enhance youth and women's empowerment, thereby fostering social cohesion and discourage feelings of criminality. Moreover, the study proposed incorporating local languages and cultural practices into the teaching curriculum to help mitigate feelings of marginalisation and criminal behaviour tendency. The study advocates for a holistic approach to mitigating crime and food insecurity in Nigeria, emphasising an ongoing process of reflection, adaptation, and stakeholder collaboration in the decolonisation of the agricultural education curriculum to foster a sustainable economy.

Keywords: Criminality; Curriculum; Decolonisation, Nigeria university; Sustainable food insecurity

Geospatial Assessment of Forest Fragmentation and Habitat Degradation, Spatially and Temporally in the Dry Zone of Sri Lanka: Insights for Ecosystem Restoration and Habitat Connectivity

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Abstract:
Forest fragmentation and habitat degradation present increasing risks to dry zone ecosystems in Sri Lanka, especially in the Anuradhapura District, where growing human activities are compromising ecological stability and biodiversity preservation. This study seeks to investigate the geographical and temporal dynamics of forest fragmentation and habitat degradation from 1995 to 2024 using geospatial technology and to assess their ecological and socio-economic ramifications on sustainable land management, conforming to the attainment of Sustainable Development Goal (SDG) 15 - Life on Land. The study utilized Landsat images from 1995, 2010, and 2024 to assess the forest fragmentation using the Random Forest algorithm, to produce land use and land cover (LULC) maps to detect the forest cover changes spatially and temporally. The fragmentation parameters, such as the number of patches, patch density and edge density, were estimated to evaluate the magnitude of the forest fragmentation. Fragmentation patterns were assessed utilizing the Patch Statistics Tool in QGIS, while the spatial correlations between fragmentation and anthropogenic pressures—including Human-Elephant Conflict (HEC), urban expansion, and infrastructure proximity—were investigated through correlation and logistic regression analyses in R across a 1 km² grid. Significant findings indicated an overall forest cover reduction of 672.47 km², alongside expansions of 419.16 km² in urban areas and 339.03 km² on agricultural land. Fragmentation markedly escalated, as the number of patches increased from 20,989 to 32,485, core forest area diminished by 338.73 km², patch density surged from 57,259.88 to 104,350.06 per 100 ha, and edge density rose from 1,076.43 to 1,269.86 m/ha. A robust positive association was identified between fragmented forest patches and HEC density ($r = 0.73$), although proximity to highways and settlements proved to be significant predictors of fragmentation ($p < 0.01$, $R^2 = 0.58$). This study highlights the essential function of integrated geospatial analysis in comprehending landscape-level ecological transformations and guiding nature-based remedies. It urges urgent action toward restoring natural corridors, establishing sustainable land use zoning, and improving forest governance institutions. These activities are critical to halting biodiversity loss, minimizing human-wildlife conflict, and attaining the targets of SDG 15, particularly those relating to forest conservation, land degradation neutrality, and ecosystem resilience.

Keywords: Forest Fragmentation, Habitat Degradation, Geospatial Analysis, Human – Elephant Conflict, Sustainable Landscape Management.

Ref: 023/LKA/25

Crypto Investment Trends in the Digital Age: The Impact of Online Information on Risk Perception

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Abstract

The emergence of cryptocurrencies has revolutionised the global financial landscape, providing a decentralised alternative to traditional investment instruments. With this rise, online information, particularly from social media platforms, has become a powerful influence on investor behaviour, especially in how risk is perceived and managed. This study examines the influence of online information on cryptocurrency risk perception and adoption, with a focus on the mediating roles of financial literacy, perceived value, and perceived risk. The research further examines how demographic factors such as age, gender, education, and income influence these dynamics.

Employing a quantitative research design, the study draws on data collected through a structured online survey distributed via Google Forms between April and May 2025. The survey was administered to 200 active users of cryptocurrency-focused Telegram groups, selected using purposive and snowball sampling methods. Telegram was chosen as the primary platform due to its unrestricted communication features and strong presence among retail crypto investors. The survey instrument was divided into three key sections: demographic details, a financial literacy scale, and validated measures for perceived risk, perceived value, and cryptocurrency adoption. Data were analysed using Structural Equation Modelling with Partial Least Squares (SEM-PLS).

The findings reveal that financial literacy significantly reduces perceived risk and enhances perceived value, both of which strongly influence an individual's intention to adopt cryptocurrencies. Perceived risk acts as a critical barrier, while perceived value serves as a powerful motivator. Intention, in turn, is the most significant predictor of actual adoption. Additionally, linear regression analysis confirms that demographic factors, especially education and income, have a meaningful impact on adoption behavior.

From a managerial perspective, the study underscores the importance of targeted investor education and transparent digital communication. Financial institutions and fintech platforms should prioritize building trust and reducing complexity by addressing misinformation prevalent in social media channels. For regulators, the findings call for policies aimed at improving digital financial literacy and establishing safeguards against misleading online content.
The study contributes to theoretical advancements in behavioural finance by embedding cognitive constructs—such as perceived value and risk—within a framework of online information exposure. It aligns with models like the Theory of Planned Behaviour and UTAUT, emphasising intention as a key mediator of technology adoption.
Finally, the study suggests future research directions, including longitudinal studies, qualitative methods, and cross-cultural analyses to further explore the evolving relationship between online information, risk perception, and cryptocurrency adoption.

Keywords: Cryptocurrencies, Investment behavior, Online information, social media, Risk perception,

Ref: 024/LKA/25

Psychological Predictors of Career Advancement Desire Among Gen Z Retail Employees

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Abstract
This study explores the psychological factors that drive career advancement desire among Generation Z employees working in the retail sector. As this cohort becomes a dominant presence in the workforce, understanding what motivates their pursuit of promotions is more important than ever. Their expectations around work, growth, and leadership differ significantly from those of previous generations. This research seeks to understand these differences by focusing on key psychological predictors—achievement motivation, self-efficacy, locus of control, and workplace environment.

Using a qualitative approach, this study analyzes secondary data drawn from peer-reviewed literature. Natural Language Processing (NLP) techniques were used to uncover patterns and themes across academic texts. The research does not collect primary data; instead, it systematically reviews existing knowledge to construct a clearer picture of Gen Z's mindset around career growth.
One of the most prominent findings is that Gen Z employees value purpose over pay. They seek meaningful roles where their personal values align with organizational goals. Achievement motivation is a central force. These employees want to grow, take on responsibility, and feel that their work matters. Promotions are seen not only as rewards but as signs of progress and validation. They want to move up—but only if it aligns with who they are and what they believe in.

Self-efficacy, or the belief in one's own ability to succeed, is another significant factor. When young employees believe they are capable, they are more likely to pursue promotions and set ambitious goals. An internal locus of control—believing that success is shaped by personal effort rather than luck—further strengthens their resolve. Together, these traits form a foundation for proactive career planning.
The workplace environment also plays a powerful role. Leadership support, feedback culture, and opportunities for learning can either fuel or stifle advancement motivation. Gen Z thrives in environments that are flexible, fair, and psychologically safe. On the other hand, rigid hierarchies, lack of clarity, and limited career pathways can lead to disengagement or even early exits. For retail organizations—where high turnover is already a challenge—this is a critical issue.

To further analyze the data, Principal Component Analysis (PCA) was used to group variables into three broad themes: internal psychological drivers, organizational reinforcement, and alignment/stability factors. This helped identify three types of Gen Z employees. Some are self-motivated and pursue growth independently. Others need recognition, encouragement, and structure. A third group is more cautious—interested in advancement, but only under stable and supportive conditions.

The study has practical implications for retail employers and HR professionals. It recommends building career development plans tailored to individual needs, ensuring promotion pathways are transparent, and creating a workplace culture that values purpose, learning, and well-being. Retailers should rethink outdated promotion systems and shift toward models that resonate with Gen Z's mindset.
Beyond its findings, the study shows how NLP tools can enhance literature reviews by identifying hidden themes across large volumes of text. This methodological approach adds rigor and innovation to qualitative research.
In summary, Gen Z's career advancement motivations are not just about climbing the ladder quickly. They are about growth with meaning, success with support, and achievement aligned with identity. Understanding this mindset is essential for building future-ready organizations.

Keywords: Keywords: Career Advancement ,Generation Z, psychological predictors, Retail Employees, Workplace Environment.

Education for Sustainable Development: The Role of Creativity and Productivity

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Abstract
Education for Sustainable Development (ESD) is a transformative learning process that equips individuals with the competencies to address complex sustainability challenges. This paper explores the pivotal role of creativity and productivity in enhancing ESD outcomes. Drawing on qualitative analysis of literature and institutional case studies, the study identifies creative pedagogical approaches and productivity-focused learning environments that contribute significantly to the development of sustainability competencies. The findings suggest that integrating creativity and productivity into educational practices not only fosters innovation but also empowers learners to take meaningful action toward achieving the Sustainable Development Goals (SDGs). The paper concludes with recommendations for embedding these elements into educational policy and practice.

Keywords: Education for Sustainable Development, Creativity, Productivity, SDGs, Transformative Learning

AI-Driven Seasonal Marketing and Its Impact on Packaged Food Sales: Enhancing Predictive Logistics and Smart Supply Chains

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Abstract: This study evaluates the impact of seasonality and seasonal marketing promotions on packaged food product sales across key demographic segments—namely age, gender, and region—in Karnataka, India. Based on primary data from 350 respondents in 6 districts using stratified random sampling and a 32 item structured questionnaire, the study adopts descriptive and structural equation modeling (SEM) analysis to identify the consumers' response patterns towards seasonal campaigns. The results provide support for the critical indirect role that media channels play to make the seasonal promotion work. This advertising has a large impact on consumer behaviors, including trial, switching behavior, and intention to purchase. Emotional motivators - such as excitement and anticipation - rise to be critical factors influencing consumer decision making, demonstrating the level of psychology behind seasonal marketing tactics. More generally, the study shows that with integration with artificial intelligence, insights from the seasonal consumer behavior can be used to improve inventory management, demand forecasting and routing in the packaged food supply chain. This could transform mobility infrastructure by providing data-driven logistics systems to respond better to wastage and optimize deliveries.

The study has managerial implications for businesses wishing to adjust the timing and the promotional mix, societal implications administered by minimizing the food supply mismatches, and academic implications from interdisciplinary works integrating AI, marketing and transportation logistics. More research can be carried out on the application of AI in real-time marketing changes and intelligent supply networks.

Keywords: Consumer psychology, Demographic factors, Packaged food Industry, Seasonal promotions, Product preferences and product demand.

Understanding climate vulnerability, infrastructure gaps, and social support in coastal fishing communities: a preliminary factor study from Thiruvananthapuram, India.

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Abstract
Coastal fishing communities are increasingly vulnerable to a range of environmental and infrastructural challenges that affect their quality of life and livelihood security. This study explores the key dimensions of climate stress, access to basic services, and social support among fishing households in Kerala, India. Primary data were collected through a structured questionnaire, and exploratory factor analysis (EFA) was used to identify underlying patterns among selected variables. The analysis revealed two distinct factors: (1) Climate and Infrastructure Stress, which combined high perceived environmental threats and lack of basic amenities, and (2) Social Support, which emerged as a separate, strongly defined factor. The scree plot and component matrix supported a two-factor solution, indicating that respondents clearly differentiate between structural challenges and available support systems. These findings highlight the need for integrated development strategies that improve both physical infrastructure and targeted social protection in climate-sensitive coastal regions.

Keywords: Climate vulnerability; coastal development; fishing communities; infrastructure; social support.

Ref: 028/LKA/25

Localising the SDGs: Auroville's Sustainable practices towards eco-township development

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Abstract: As the global community confronts the escalating challenges of climate change, environmental degradation and unsustainable resource consumption, there is a growing need for localised models that advance global sustainability goals. The study examines about the ecological sustainability practices of stakeholder organizations at Auroville, an intentional township in Tamil Nadu, India, known for its ecological and spiritual vision. The study employed a sample of 18 organisations based on their contributions to environmental sustainability. Using the Pearson correlation method, the findings reveal how locally driven practices such as organic farming, renewable energy use, waste recycling, and e-mobility contribute to the development of Auroville as an eco-township and align with relevant Sustainable Development Goals (SDGs). The study examines how institutional structures and personal agency combine to produce sustainable outcomes using Giddens' Structuration theory. As a result, Auroville serves as a model for place-based sustainability that connects grassroots innovation with the global Sustainable Development Goals agenda, offering insights for the development of eco-townships in the future that are focused on mitigating environmental degradation.

Keywords: Auroville; Environment; Localised sustainable practices; Organisations; Sustainable Development Goals (SDGs).

Essential strategies that might mitigate domestic violence in the Tshitale rural area, South Africa

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Abstract
The unacceptably high level of domestic violence in South African homes has been disheartening for decades and strenuous efforts have been made to mitigate the violence. The South African government has established legislative frameworks such as the Domestic Violence Act 116 of 1998 to prevent domestic violence, in line with the Convention on the Elimination of All forms of Discrimination Against Women (CEDAW). Domestic violence is categorised mainly as a gendered crime against women, although domestic violence affects all genders. The prevention of domestic violence in South Africa is the responsibility of every individual, although, it is labelled as the role of police, social workers, psychologists, magistrates, community leaders and faith-based organisations. This paper identifies essential strategies to prevent and combat domestic violence in the rural areas of South Africa. Qualitative research was conducted to learn more about the participants' experience, understanding and behaviour in relation to the problem. A purposive sampling technique was used to select 19 participants from the entire population of the Tshitale policing area. The researchers conducted face-to-face interviews with the police, social workers, faith-based leaders, traditional leaders and members of the Department of Justice. The data was analysed using thematic analysis, allowing themes to be used to categorise the extensive data collected. It was confirmed that domestic violence affects women emotionally to the extent that they become forgetful and mentally unstable, and isolate themselves from their close family and friends. Domestic violence destroys women's wellbeing and self-esteem, and can lead to death. Therefore, it is imperative to devise effective strategies that might mitigate domestic violence. Police officers use different methods to combat domestic violence on women. This paper recommends that educational programmes on domestic violence be implemented in the Tshitale policing area to raise awareness, to help community members to prevent domestic violence.

Factors Driving the Transformation towards Sustainable Development: Evidence from Indian Leather Industry

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Abstract

Sustainability in the leather industry has been a much-debated topic since the beginning of leather tanning. Due to scrutiny of the industry, sustainability is a key contributing factor to the futuristic vision of leather. The world's largest leather processing countries and the top leather exporters are expected to witness growing profits following a sustainable pathway. This article tracks the interventions and innovations that are both in practice and under promotion to improve the industry's image. We referred IPO (input-process-output) model to map the focus of interventions, and explored the factor responsible for the transformation in a particular manner. Based in the existing literature and interaction with industry personnel, we found that the key interventions based on input are – use of natural fibers, zeology tanning, and enzymatic processing, whereas in case of process, interventions are – Low-water tanning and ethical livestock practices, and output based interventions are – closed-loop systems and upcycling & recycling of resources. Among these interventions, output based interventions are adopted frequently because of intermediation by third party and less economic liability. Moreover, based on expert inputs, we mapped these interventions against various dimensions of sustainability, and the study revealed that most of the interventions are dispersed over low and medium level of environmental impact in contrast to low level of economic and social impact. The findings of this study can be utilized to devise incentive mechanism and policy measure, based on win-win proposition, to boost the adoption of high impact interventions. The regulatory agency of government of India can issue guidelines over a sustainable leather unit with impact demonstration of best available practices. For small and medium size firms, business association or industry council should collaborate with government body to develop common facility, and deploy industry associates who can visit and guide regarding implementation of various interventions highlighted by experts in this paper.

The discussion with experts reveals that overall leather industry has made significant progress in terms of technological advancement to improve its sustainability performance. However, uptake of these advancements and deployment of the selected interventions has not yet matched with market growth. The factors like quality improvement, resource saving, risk mitigation, resource saving, peer advice, government guidelines, buyers guidelines have vital role in industry transformation. However, many firms have reported that the government efforts to activate the intermediaries to support small and medium size firms can be a game changer in industrial transformation. In future study, we should explore the nature and structure of intermediaries which can help in leather firms in their transformation journey.

Keywords: India; Leather; Processing; Sustainability; Transformation

Macroeconomic Variation Factors Influencing Indian Rupee Volatility:
A Multiple Regression Approach to Exchange Rate Dynamics

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Abstract: This study investigates the macroeconomic determinants influencing the exchange rate fluctuations of the Indian rupee against major global currencies during the period 2023–2024 a time marked by post-pandemic recovery, global inflationary shocks, and tightening monetary policies. Drawing upon monthly secondary data, the research employs a multiple linear regression model to assess the short-term impact of four critical variables: inflation rate, repo rate, current account deficit (CAD), and public debt. The exchange rate is treated as the dependent variable, analyzed in relation to macroeconomic fundamentals derived from official government and global financial databases. Findings reveal that CAD and inflation exert statistically significant positive effects on the rupee's depreciation, reaffirming conventional theories such as Purchasing Power Parity and Balance of Payments equilibrium. Repo rate and public debt exhibit marginal but directionally positive influences, suggesting their indirect contribution to currency volatility. These results are consistent with the empirical evidence presented by Mishkin (1982), Singh (2005), Kalbhor (2008), and Bisharat et al. (2022), among others. The model achieves a moderate R^2 of 0.479, and ANOVA confirms its overall statistical significance ($p = 0.0487$), with no signs of autocorrelation as per the Durbin-Watson test (2.236). This research offers timely insights into how macroeconomic management particularly inflation control, current account discipline, and sustainable debt practices can anchor currency stability. It bridges a vital research gap by incorporating high-frequency (monthly) data from the most recent global financial phase. The study contributes to policymaking, financial planning, and currency risk assessment in an increasingly interconnected macroeconomic landscape.

Keywords: Current Account Deficit (CAD), Exchange Rate Volatility, Indian Rupee Depreciation, Inflation and Public Debt, Macroeconomic Indicators.

Municipal Solid Waste Management: An Integral Role Played by Mysuru City Corporation

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Abstract
This work is the outcome of field work in Mysuru City Corporation. Solid waste management is a vast concept, which deals with the process of collecting, treating and disposing of waste material generated by humans at large. Improper management of generated waste creates environmental pollution. The concept has various dimensions to deal with proper management of collected waste such as municipal solid waste, electronic waste, industrial waste, domestic waste, construction and demolition waste (C & D). This article focuses mainly on municipal solid waste management, commonly known as garbage – which consists of day to day items that humans use and throw away. The term is mainly concentrated on four components such as source of waste generation, sorting, and waste treatment and disposal facilities. In ancient times, the cities like Athens and Greece practiced throwing of wastes onto streets and roadways. In some cities like ancient Rome, property owners were held responsible for cleaning the streets of their respective properties. Later on, the process of the collecting and disposal of waste was started in some cities like Boston, New York, Philadelphia. The practice of landfills was introduced instead of open dumping in the 20th century. Here, environmental governance is an inevitable factor for the study. The administrative role of urban local bodies (ULBs) of the country can be seen as responsible for the municipal solid waste management. It is very crucial to deal with the maintenance of generated waste. So, we noticed the existence of local self-bodies all over the world to deal with municipal solid waste management. In that way, this article deals with the Mysuru City Corporation's role in municipal solid waste management. Mysuru, is one of the cleanest cities in Karnataka, and well planned city vastly developed by the Kingdom of Wodeyars of Mysore. The city's Municipal Corporation has adopted advanced scientific waste disposal methods across the city to enhance the healthy standard of living. With a population of nearly 12 lakh, the city generates about 450 tonnes of waste daily, which is managed through a scientific approach in collaboration with the Mysuru City Corporation and public-private partnerships. The city has introduced a new concept to proper management of municipal solid waste, which is known as zero waste management located in nine zones with one centralized solid waste management plant to have proper disposal of collected waste from households. Mysuru city has adopted scientific methods to dispose of household waste. Plastic waste disposal plant has gained much popularity and is a unique feature in a centralized solid waste management plant which is located in Vidyaranyapuram of Mysuru city.

Keywords: Environmental Pollution; Kingdom of Wodeyars of Mysore; Landfills; Mysuru City Corporation; Solid Waste Management.

Assessment of Urban Green Space Dynamics towards Mitigating the Environmental Stress in Vijayawada City, Andhra Pradesh, India

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Abstract: Urban green spaces are recognized as essential elements of cities. They offer multiple benefits, including mitigating the urban heat island effect and its negative impact on public health. They also present opportunities for people to interact, recreate, and connect with nature. Rapid urbanization leads to a significant transformation of green spaces to impervious surfaces and urban infrastructures. A large number of cities throughout the world have experienced "urban heat island" (UHI) effects. UHI are characterized by a temperature difference between urban and rural regions. Urban green spaces can contribute to a broad range of ecosystem services, among which temperature mitigation is regarded as an important ecosystem regulating service. Understanding the influences of green space dynamics on the temperature variability is therefore of great interest for mitigating the UHI effect in cities. The UHI effect can be assessed by measuring surface air temperature and land surface temperature in the system. This study investigated green space dynamics and land surface temperature in the Vijayawada City, Andhra Pradesh, India. This research study addresses the pressing concern of environmental stress and green infrastructure (GI) deficiency, a rapidly urbanizing Tier-II study city. The central empirical concern is to assess spatial patterns of ecological degradation by integrating satellite-derived indices viz., Normalized Difference Vegetation Index (NDVI), Land Surface Temperature (LST), Urban Heat Island (UHI), Air Quality Index (AQI), and City Biodiversity Index (CBI). These indicators are employed to diagnose areas with inadequate green cover, extreme thermal exposure, and air quality, which often overlap with low-income and high-density urban zones. The researchers have made systematic analysis and employed geospatial approach using multi-temporal Landsat imagery for quantification of NDVI and LST for the study region. UHI is computed by comparing urban LST with rural baselines. The biodiversity metrics are assessed using the Singapore Index Framework. Spatial overlays, zonal statistics, and descriptive ward-level synthesis are applied to integrate these indicators within ArcGIS 10.8. version. The result reveals a 79% decrease in average NDVI during 1990 to 2024, with built-up areas increasing from 37% to more than 60%. LST values surpass 30°C in multiple wards, and UHI intensities reach up to 9°C, in thermally stressed zones like, Wards 2, 8, and 54. AQI values consistently exceed the permissible $PM_{2.5}$ limit, especially in industrial and commercial corridors. Biodiversity analysis yields a critically low CBI score of 32/92, reflecting habitat fragmentation and weak urban ecology governance in the system. These findings highlight the zones with cumulative environmental burdens, particularly in low-income wards, which are lacking access to GI. Based on the results, the study evolves a Green Infrastructural Planning Framework and to recommend strategies/guidelines for mitigation of Environmental Stress. Finally, the study concludes that spatially disaggregated, multi-indicator diagnostics are vital for prioritizing GI interventions in the system. The proposed framework can guide municipal administrators, urban planners, policy makers in allocating green resources equitably in cities might provide greater benefits for climate mitigation.

Keywords: Urban Green Space, Urban Heat Island, Environmental Stress, Biodiversity Index, Green Infrastructure Planning.

Novel framework towards integration of Environmental Carrying Capacity for Sustainable Spatial Planning: A Systematic Approach in Indian context

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Abstract
Environmental Carrying Capacity (ECC) defines the maximum level of anthropogenic activity that an ecosystem can support without undergoing irreversible degradation, ensuring that environmental quality and ecological integrity are maintained over time. In the recent decades, rapid urbanization, particularly in metropolitan regions across the globe, has exceeded these ecological thresholds, resulting in severe environmental consequences such as loss of green cover, declining air and water quality, urban heat islands, and increased vulnerability to climate- induced hazards. Coastal zones and ecologically fragile regions face compounded risks due to unregulated construction, unsustainable land-use conversions, and overexploitation of natural resources. These challenges highlight ECC as a critical determinant in shaping sustainable spatial planning and urban policy. However, despite its importance, ECC is rarely mainstreamed into statutory urban planning frameworks or master plans, which often emphasize short-term economic growth, infrastructure expansion, and population accommodation at the cost of long- term ecological resilience.

This research addresses the significant gap in operationalizing ECC by systematically exploring its potential integration into spatial planning frameworks. The study adopts a multi-pronged methodology, combining an extensive and systematic review of global and Indian literature with a bibliometric analysis of over 500 ECC-related studies published between 1995 and 2025, retrieved from Scopus and Web of Science (WoS) databases. Bibliometric tools such as Biblioshiny (R) and VOSviewer have been employed to visualize and analyze research trends, thematic clusters, author collaborations, and methodological advancements, offering insights into the evolving discourse on ECC. The analysis reveals a notable shift from theoretical explorations of carrying capacity to advanced, data-driven, and GIS-enabled modeling approaches that link ECC with sustainability, climate resilience, and urban growth management. Detailed co- occurrence and temporal keyword analyses also highlight emerging research frontiers, particularly in coastal and urban resilience studies.

Furthermore, the study critically evaluates 25+ Master Plans and Development Plans of major Indian cities to assess the extent to which ECC principles have been incorporated into urban development strategies. The findings indicate that most existing plans adopt a fragmented and sectoral approach, with limited consideration for ecological thresholds or resource constraints, thus necessitating a paradigm shift toward ECC-based planning.

Drawing from these insights, this research proposes an Integrated Spatial Planning Framework (ISP-F) that positions Environmental Carrying Capacity (ECC) as a core principle for sustainable urban transformation. The ISP-F outlines practical strategies, indicators, and decision-support tools to align urban growth with ecological capacities, thereby enabling planners, policymakers, and stakeholders to design resilient, inclusive, and environmentally sound urban systems.

Keywords: Environmental Carrying Capacity, Evolutionary Study, Master Plans, Meta-Bibliometric Approach, Spatial Planning, Sustainable Urban Development.

Ref: 035/LKA/25

Measuring Operational Efficiency of Fintech Startups

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Abstract
In today's fast-paced digital world, FinTech startups are playing a important role in bringing new ideas to the financial services industry. Their ability to quickly develop technology and focus on customers is well-known, However, there is an important need to understand the efficiency of the business operations of these startups. Hence, the present study fills that gap by creating a framework that evaluates the operational efficiency of FinTech startups through the lens of (a) Digital Payments (b) Lending Platforms (c) Robo-Advisory, and (d) Insurance Technology. To do this, the study has applied TOPSIS, and has considered four variables they are (a)Technology Investment (b) Customer Acquisition Rate (c) Annual Revenue, and (d) Capital Invested. The results show that Insurance Technology startups are the most efficient, due higher good customer acquisition and efficient use of capital, followed closely by Digital Payments methods adopted by these startups.

Keywords: FinTech Startups; Operational Efficiency; TOPSIS Analysis; Multi-Criteria Decision Making (MCDM); Financial Technology Evaluation

Ref: 036/LKA/25

Industry-Wise Prioritization of DEIB Initiatives in India: A Fuzzy Decision-Making Approach

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Abstract
The growing importance of Diversity, Equity, Inclusion, and Belonging (DEIB) in Indian organizations necessitates a sector-specific strategy for implementation and prioritization. This study applies a hybrid Fuzzy Analytic Hierarchy Process (F-AHP) and Fuzzy Technique for Order Preference by Similarity to Ideal Solution (Fuzzy TOPSIS) to evaluate and rank DEIB readiness across six key industries: IT/ITES, Banking/Finance, Healthcare, Education, Manufacturing, and Hospitality. Based on expert assessments, five critical DEIB criteria—Leadership Commitment, Policy Framework, Inclusive Culture, Employee Engagement, and Talent Acquisition—were evaluated using fuzzy logic to handle ambiguity in human judgment. The results indicate that IT/ITES and Banking sectors demonstrate higher maturity levels in DEIB initiatives, whereas Hospitality and Manufacturing lag behind. This prioritization provides strategic insight for targeted investments in DEIB policies and programs. The study contributes methodologically to the field of organizational behavior and diversity management and offers a decision-support tool for policy development in emerging economies.

 Keywords: Decision Making; Equity; Inclusion; Sustainable; Economy

Financial Literacy and Sustainable Livelihoods: A Qualitative Study on Microfinance Practices and Ecological Economic Implications in Rural Communities

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Abstract: This research examines multi-dimensional interactions between sustainable livelihoods, financial literacy, and ecological-economic impacts in rural microfinance environments. In the increased environmental risk and deep-rooted rural poverty context, the research undertakes an interdisciplinary qualitative strategy to examine how financial knowledge influences livelihood choices and resources handling among the microfinance recipients in rural environments. The research answers an urgent void in existing development thought: whereas microfinance is sometimes presented as a route to economic empowerment, its outcomes are extremely dependent on the availability of finance among its recipients, and seldom are its environmental consequences properly addressed. This research is dependent on qualitative research involving 30 purposefully selected rural beneficiaries through in-depth interviews and focus group discussions. This paper explores everyday lives of making financial decisions, business sustainability and environmental consciousness,. The qualitative research is supplemented with an NLP-based review of current academic literature facilitating thematic triangulation confirming and enriching the empirical results. The inter-disciplinary methodology harvests the local practices and the international academic discourses structuring the financial-ecological nexus. Field research evidence supports that financial literacy not only improves rural entrepreneurs but the ability to make better economic decisions and responsiveness to the use of sustainable resources. More financially educated beneficiaries had the potential to recognize long-term environmental hazards, embrace conservationist livelihood activities, and take advantage of green financial services. But the study also finds deeply ingrained structural and contextual issues, including low formal education levels, unavailability of adapted financial literacy interventions, and gender-specific restrictions that all interfere with the transfer of financial understanding into sustainable action. The NLP-guided systematic review of peer-reviewed literature confirms the overall findings, as topic modeling and principal component analysis showed pervasive themes of economic empowerment, environmental responsibility, community resilience, and behavior constraints. Theme clusters that emerge around environmental responsibility, sustainable microfinance, and literacy-facilitated the empowerment that indicate a heightened scholarly concern with the incorporation of the ecologic thinking in a rural financial education models. This confluence of the concerns underlines the transformative potentiality of eco-financial literacy in development practice. The study makes a theoretical contribution by integrating the sustainable livelihoods framework, Amartya Sen's capability approach, ecological economics, and behavioral finance to develop an aggregate perspective through which financial literacy can be understood not just as a credit management or budgeting technique, but as a tool of wider socio-environmental agency. This alignment at the concept level points towards a need to transcend transactional representations of microfinance towards more participatory, holistic, and context-sensitive interventions that capture the interdependence of ecological processes and economic action. The empirical import of the study is also important. It suggests that microfinance organizations and development agencies move financial literacy courses to incorporate modules for environmental sustainability, climate resilience, and resource stewardship. Culturally localized delivery mechanisms, gender-responsiveness of curriculum, and life-cycle models are recognized as key enablers for more efficient and inclusive financial education. The study also calls for intimate partnerships between microfinance providers, green groups, and community actors for co-designing place-based eco-financial education platforms. Overall, this study suggests the merit of infusing ecological intelligence into financial capability interventions to future which enable more sustainable, equitable, and resilient rural livelihoods. It presents an "eco-financial empowerment" model that supports global development agendas, including the Sustainable Development Goals (SDGs), and encourages future research to deepen further this emerging intersection. By situating economic competence and environmental stewardship within financial literacy, the study in return situates the role of microfinance in achieving sustainable rural development.

Keywords: Environmental sustainability; Financial literacy; Microfinance; Sustainable livelihood; Rural Communities;

Ref: 038/LKA/25

Growing Significance of Tourism in the Post Pandemic Backdrop: An Analytical View

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Abstract
COVID-19 has squeezed world in a massive mode, especially the lockdowns which have brought social and economic life to a standstill. A world which forever buzzed with activities has fallen silent and all the resources have been diverted to meet the never-experienced before crisis. A 2019 joint report from the WHO and the World Bank estimated the impact of such a pandemic at 2.2 percent to 4.8 percent of global GDP. That prediction seems to have come true, as we see the world getting engulfed by this crisis. This COVID-19 pandemic affected the manufacturing and the services sector—hospitality, healthcare, retail, banks, hotels, real estate, education, health, IT, recreation, media and others but majorly to tourism industry. The economic stress has started and will grow rapidly. While lockdown and social distancing result in productivity loss on the one hand, they cause a sharp decline in demand for goods and services by the consumers in the market on the other, thus leading to a collapse in economic activity. However, lockdown and social distancing are the only cost-effective tools available to prevent the spread of COVID-19. The study is based on both primary and secondary data and analyzed with statistical tools. The research study is vital to understand tourism aspects of Mysuru (Heritage city).

Keywords: Business opportunities, Covid-19, Mysuru, Post Epidemic, Tourism Industry and Geographical Indication tag.

Sustainable Digital Marketing: Social Media's Role in Promoting Eco-Friendly FMCG Brand Practices

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Working Title and Conference Objectives

This research addresses the critical intersection of digital marketing innovation and environmental sustainability within the Fast-Moving Consumer Goods (FMCG) sector. The study directly aligns with the conference's sustainable development objectives by investigating how social media platforms can drive environmental consciousness, promote responsible consumption patterns, and enhance corporate sustainability practices. The research contributes to understanding the mechanisms through which digital marketing strategies can advance United Nations Sustainable Development Goals, particularly SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action).

Statement of Empirical and Theoretical Concern

The research addresses a significant gap in understanding how social media marketing influences consumer environmental behavior and drives adoption of sustainable FMCG products. While traditional marketing literature extensively covers digital marketing effectiveness, limited empirical research examines the specific role of social media in promoting environmental consciousness and sustainable consumption patterns. The theoretical concern centers on developing frameworks that integrate digital marketing strategies with environmental sustainability outcomes, moving beyond conventional profit-focused marketing approaches toward holistic models that consider environmental and social impacts alongside business performance.

Literature Context and Positioning

This study positions itself within the emerging intersection of digital marketing literature, environmental psychology, and sustainable business practices. Recent studies in digital marketing have focused primarily on engagement metrics and sales conversion, while environmental marketing research has traditionally emphasized traditional media channels and corporate social responsibility communications. However, the convergence of social media ubiquity, rising environmental consciousness, and corporate sustainability imperatives creates a research domain that remains underexplored. The study builds upon consumer behavior theory, social influence mechanisms, and environmental psychology to develop comprehensive understanding of how digital platforms can drive sustainable consumption behaviors.

Methodological Approach

The research employs a mixed-methods empirical approach combining quantitative social media analytics with qualitative consumer behavior studies. The methodology integrates three primary data collection strategies: comprehensive analysis of social media campaigns from 15 leading FMCG companies across India over 18 months, consumer survey data from 2,500 respondents across urban and rural markets, and in-depth interviews with 45 consumers demonstrating varying levels of environmental consciousness. Social media data analysis employs sentiment analysis algorithms, engagement pattern recognition, and content categorization techniques. Consumer behavior analysis utilizes structural equation modeling to establish causal relationships between social media exposure and sustainable purchasing intentions. The study also incorporates experimental design elements through controlled social media campaign analysis measuring environmental message effectiveness across different demographic segments.

Main Arguments and Supporting Evidence

The research presents four primary arguments supported by empirical evidence. First, authentic environmental messaging on social media platforms significantly influences consumer environmental consciousness, with companies demonstrating genuine sustainability commitments achieving 42% higher engagement rates in environmental content compared to superficial green marketing approaches. Second, integrated social media sustainability campaigns drive measurable improvements in sustainable product sales, with participating companies experiencing 35% average increases in eco-friendly product line performance. Third, transparent communication about environmental challenges and improvement efforts builds stronger brand sustainability perception, with authenticity metrics correlating positively with long-term consumer loyalty. Fourth, social media platforms enable creation of environmental

communities that amplify sustainability messages through organic sharing and peer influence, creating multiplier effects that extend marketing reach while building environmental awareness.

Supporting evidence includes statistical analysis of 50,000+ social media posts, correlation analysis between engagement metrics and sales data, sentiment analysis of consumer responses to environmental messaging, and comparative analysis of companies with varying levels of sustainability commitment. The research also incorporates case study analysis of successful sustainable digital marketing campaigns, demonstrating practical applications of theoretical frameworks.

Main Conclusions and International Relevance

The study concludes that strategic social media marketing can serve as a powerful catalyst for promoting sustainable consumption patterns while simultaneously enhancing brand equity and business performance. The research demonstrates that environmental sustainability and commercial success are not mutually exclusive when approached through authentic, transparent digital marketing strategies. Companies implementing the developed Sustainable Digital Marketing Framework (SDMF) show superior performance across both environmental impact indicators and traditional business metrics.

The findings have significant international relevance as environmental challenges transcend national boundaries and social media platforms operate globally. The developed frameworks can be adapted across different cultural contexts while maintaining core principles of authenticity, transparency, and genuine environmental commitment. The research provides actionable recommendations for multinational FMCG companies seeking to align their digital marketing strategies with global sustainability objectives while maintaining competitive advantages in diverse markets. The study's implications extend to policy makers developing regulations for environmental marketing, international organizations promoting sustainable development goals, and academic researchers examining the intersection of digital marketing and environmental sustainability.

Keywords: Environmental Consciousness, FMCG Sustainability, FMCG impact, Sustainable Digital Marketing, Social Media Analytics,

Ref: 040/LKA/25

Social Exclusion and Obligations of Dalit Rights in India: Dalits Rights Inclusivity

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Abstract: Historically, the caste system entailed a life of degradation for Dalits. For instance Dalits undertook occupations that the rest of Indian society found ritually polluting, such as handling carcasses, disposing of human waste, sweeping streets, or cobbling. Dalits also received ill treatment from members of higher castes, particularly from Brahmins. If dalit's attempted to defy the caste system, they received cruel punishments such as being forced to parade naked through village streets, and being beaten, raped tortured, hanged and burned. Although Indian Laws contains extensive protections against such discrimination, the government still fails to enforce its domestic and international obligations to ensure Dalit Rights. In this backdrop the paper will bring out the dalit atrocities even though acts and regulations are in force. Further the paper will discuss India has made measurable progress in terms of the protections afforded to Dalits since Independence. Dalits still suffer invidious discrimination and mistreatment at the hands of upper caste members and law enforcement officials. Such mistreatment is inexcusable under the India's domestic Laws and its obligations under international laws. Although the Indian government denies the problem of mistreatment of Dalits and points to extensive legal protections evidencing compliance with international Standards, the numerous reports of violence and discrimination indicate that Dalits remain India's "Broken People." Finally the paper will conclude policies and programmes to stop the atrocity menace and evaluate the measures taken by the government and social organisations at state and national level.

Keywords: Dalit's, Atrocities, Policies & Acts, Rights Protection, UNO

Ref: 041/LKA/25

Development of Unified Framework for Innovative Information Technology Tools Diffusion towards Flood Risk Communication in Sri Lanka

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Abstract

Devastating floods have emerged as one of the most common and ruthless natural disasters all over the world. Even though the impact of the flood cannot be alleviated completely, the severity of the disruptions could be meritoriously optimized through efficient monitoring systems and effective risk communication. In recent times, risk communication has gained incremental research attention to the most effective and efficient tools for reducing the overwhelming impacts of hazards on innocent lives and property. In this essence, operative emergency management mechanisms are entirely based on proficient communication, sustainable collaborations and effective coordination processes by diversified levels government and individual personal intervention through different risk communication tools. Sri Lanka being a tropical country with the direct influence of two torrential monsoons is highly susceptible to flooding. However, the recent floods highlighted substantial anomalies in acceptance of flood risk communication tools by citizens which prompted the fundamental inception for this study.

This study assesses the influential factors for adoption of innovative Information Technology (IT) tools for flood risk communication in Sri Lanka by developing a unified framework based on three prominent theories in terms of "Diffusion of Innovation Theory", "Protection Motivation Theory" and the "Theory of Planed Behavior". In furtherance, the research evaluates the persuasive factors for adoption of the IT innovations in flood risk communication in Sri Lanka. A quantitative methodology with a survey approach for primary data collection is implemented with emphasis on technical aspects such as usefulness, compatibility and the complexity of IT tools. Moreover, behavioral aspects such as attitude perceived behavioral control and motivation capacity along with several physiological aspects like experience to threat, vulnerability, preparedness behavior and perceived response cost to use IT tools for flood risk communication are taken into consideration. The empirical research deploys a quantitative analysis for validating the proposed framework. Primary data collection was implemented by a survey where flood affected community in Colombo Metropolitan, Sri Lanka was the focus group. "Descriptive statistical analysis" was performed to ensure the data normality by using SPSS 21. "Structural Equation Modeling" (SEM) statistical technique was applied using "Analysis of Moment Structures" (AMOS) software version (AMOS 21) on the collected data for testing hypotheses. Interesting results were derived through the analysis which reveals usefulness, compatibility, motivation to use innovations and past experience and preparedness behaviour are the most influential determinant of behavioral intention in the proposed model. Moreover, age, income and experience to use IT tools, has the influence to adopt innovative tools for flood risk communication. Initially, "Diffusion of innovation theory", the "Theory of planed behavior and Protection motivation theory were amalgamated to determine the perception of IT tools introduced by the government for flood risk communication.

Further, as a theoretical contribution, this study reformed some determinants to synchronize with risk communication theory. For instance, the term subjective norms were replaced with motivation capacity while threat and coping appraisal were replaced with direct experience to flood threat and preparedness behaviour. It was also observed that the investigation effect of social media, government website and mobile apps like "DEWN" for flood risk communication and its adoption by flood affected community is poor in Sri Lankan context. In addition, the study highlights that although mobile phone and social media penetration is relatively high in Sri Lanka, the utilization of these technologies for governmental administrative functions particularly in the context of emergency management remains significantly limited. A notable finding is the marked reluctance among the elderly population to adopt such

innovations for routine use, primarily due to limited digital literacy and a higher perceived response cost compared to younger generations. The innovative framework proposed in this study offers governmental agencies a structured and contextually relevant approach for evaluating the factors influencing flood risk communication, thereby enhancing the effectiveness of public service delivery. In conclusion, the study makes a dual contribution by advancing theoretical understanding and providing practical implications for the operational enhancement of flood emergency management from an administrative perspective.

Ref: 042/LKA/25

Green Banking and Sustainable Development: A Systematic Review of Global Practices and Policy Trends

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Abstract
This paper systematically reviews global green banking practices and their role in promoting sustainable development. Using conceptual lenses such as the Triple Bottom Line, Stakeholder Theory, and Institutional Theory, the review explores how banks integrate environmental, social, and governance (ESG) criteria into operations. Case examples from developed (EU, USA, UK) and emerging economies (India, China, Brazil) highlight regulatory frameworks, policy trends, and institutional initiatives such as green bonds, climate risk assessment, and ESG disclosures. The study outlines key benefits including brand trust, climate risk mitigation, and access to green capital. It also discusses challenges such as greenwashing, lack of standardization, and limited technical capacity. Future directions recommend global taxonomies, capacity-building initiatives, fintech integration, and regulatory incentives. The review underscores the strategic importance of green banking in advancing the global sustainability agenda.

Keywords: ESG, environmental sustainability, Green banking, policy review, sustainable finance, sustainable development, SDGs.

Ref: 043/LKA/25

Towards Green Recycling: Legal Imperatives for TSDF Compliance in Bangladesh's Ship Recycling industry

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Abstract
The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (HKC) entered into force on 26 June 2025, creating legally binding obligations for ship recycling states, including Bangladesh. Despite being an early ratifier and having enacted the Ship Recycling Act 2018 and the Ship Breaking and Recycling Rules 2011 to align with HKC provisions, Bangladesh's implementation—particularly regarding hazardous waste management through Treatment, Storage, and Disposal Facilities (TSDFs)—remains severely deficient. While the law mandated the establishment of TSDFs by 2021, most ship recycling yards in Chattogram continue to operate without functional or compliant facilities. No centralized or common TSDF has yet been established, and individual yards rely on makeshift, informal, or offsite disposal methods that lack regulatory oversight. These deficiencies pose critical environmental risks and may breach international obligations under both the HKC and the Basel Convention, especially regarding transboundary movement of hazardous waste. Moreover, legal ambiguities persist. The key terms—such as "hazardous waste," "downstream disposal," and "temporary storage"—are either undefined or inconsistently interpreted under Bangladeshi law. Hazardous waste manifests such as asbestos, heavy metals, oil sludge, and PCBs are often stored haphazardly or transferred to unauthorized handlers. Weaknesses in institutional coordination, recordkeeping, and tracking systems across relevant authorities exacerbate the problem. A 2023 High Court order further highlighted non-compliance, demanding that the Government enforce the TSDF requirement, particularly in light of environmental harm to adjacent coastal and marine ecosystems. In this context, the study undertakes a comparative legal analysis of India's approach to TSDF regulation under its Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016. India's model offers clear statutory definitions, robust authorization and tracking mechanisms, a network of licensed common TSDFs, and a clearer delineation of institutional responsibilities. The research argues that Bangladesh must urgently reform its legal framework by adopting similarly precise standards, strengthening regulatory capacity, ensuring site-level infrastructure compliance, and fostering industry-government cooperation. The paper concludes that the failure to develop HKC-compliant TSDFs not only jeopardizes environmental and occupational safety but also threatens Bangladesh's credibility as a responsible ship recycling nation. Legal reforms inspired by India's model, coupled with enforcement strategies and investment incentives, are necessary to bridge the compliance gap. Only by doing so can Bangladesh fully operationalize the HKC, mitigate environmental damage, and secure access to EU and global markets for green ship recycling.

Keywords: Comparative Legal Analysis, Environmental Compliance, Hong Kong Convention (HKC), Ship Recycling, Treatment, Storage, and Disposal Facilities (TSDFs);

Ref: 044/LKA/25

The Grand Deception? Western Democracy and the Promise of Development in Africa

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Abstract
This paper examines the confusion between political independence and socio-economic development in post-political independent Africa. The motivation for this paper came out of a realisation that when African states received their political independence, there was a widespread hope that political independence would usher the newly politically independent African states to rapid development if they accepted democracy. However, this hope has become bleak as the newly politically independent African states continue to grapple with underdevelopment, poverty, and systemic inequality. When one looks at the current state of Africa it appears that the issue of democracy and development was a grand deception. This paper criticises this by arguing that while African states attained political independence, they remained economically dependent and structurally disadvantaged within the global system. This is supported by the fact that more than three decades after the attainment of political independence, many African countries are in deep economic crisis which is marked by rising debt, structural adjustment programmes, and weakened state institutions. Using historical methods, postcolonial critique, neo-colonialism and discourse analysis, this paper discusses how colonial democratic models as advocated by Western countries often fail to address Africa's historical realities and developmental needs. A conclusion drawn by this paper is that there is a need for a critical re-examination of externally imposed democratic ideals. The paper calls for an alternative model that is context-driven and that upholds African agency.

Keywords: Africa, colonialism, democracy, development, postcolonial critique

Emotional Intelligence and Sustainable Workplaces: A Study on Employee Well-being and Behavioral Outcomes

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Abstract

In the evolving landscape of organizational sustainability, emotional intelligence (EI) has emerged as a critical determinant of both employee well-being and behavioural outcomes. This study investigates the influence of EI on fostering sustainable workplaces, focusing particularly on its impact on employee well-being and pro-organizational behaviours. Drawing from Goleman's five-component model of EI - self-awareness, self-regulation, motivation, empathy, and social skills—the research examines how emotionally intelligent employees contribute to a positive and enduring work environment.

Using a structured questionnaire, data were collected from 200 employees across diverse sectors in Karnataka, India. The study employed Structural Equation Modeling (SEM) to analyse relationships among EI, well-being, and behavioural outcomes such as collaboration, adaptability, and sustainability-aligned engagement. Findings reveal a strong positive association between EI and employee well-being, which in turn significantly influences sustainable behavioural outcomes. The conceptual model confirms that emotional intelligence fosters psychological safety and workplace harmony, thereby contributing to the achievement of Sustainable Development Goals (SDGs) within organizations.

The study provides practical insights for HR managers and policymakers on designing EI-focused training and well-being initiatives to promote long-term sustainability. It also lays a foundation for future research in linking psychological constructs with environmental and social sustainability outcomes in organizational settings.

Keywords: Emotional Intelligence; Employee Well-being; Sustainable Workplace; Behavioral Outcomes; SEM; Organizational Sustainability.

A Study of Role Played by Public Sector Banks in the Priority Sector Lending

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Abstract
Priority sector lending has long has been used by developed as well as developing nations as an instruments to channelize credit at preferential rates to specified sectors of the economy that may not get timely and adequate credit in the absence of such special dispensation. In India It is an important role given by reserve bank of India to the banks in order to synchronize the lending activities with national importance and priorities. The present study examines and comprehend priority sector lending by selected public sector banks with special reference to shivamogga district. Primary data and secondary data has been used for this study. The collected data are presented by using various tables and analysis was done by using percentage analysis, growth factor and in order to test hypothesis, statistical tool like X^2 test has been used.

Keywords: Inclusive growth, Priority Sectors, Non-performing assets etc.

The Contribution of Sustainable Agricultural Innovations to Inclusive Development: An Examination of Indian Farming Communities

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Abstract
Agriculture remains the backbone of rural livelihoods and socio-economic progress in India, yet persistent income disparities, unequal access to resources, and limited institutional participation continue to impede inclusive growth, particularly for smallholders, women, and marginalised communities. This study critically examines the contribution of sustainable agricultural innovations (SAIs) to inclusive development among farming communities in Punjab, Maharashtra, and Karnataka, employing a mixed-methods approach. The research is carried out on primary data from 360 farmers, focus group discussions, key informant interviews, secondary reports and field observations. The analysis focuses on how the adoption of SAIs, including bio-inputs, precision irrigation, digital advisory platforms, and community-based models such as Self-Help Groups (SHGs) and Farmer Producer Organisations (FPOs), influences income equality, institutional inclusion, access to agricultural services, and empowerment.

Findings reveal that farmers who adopt multiple innovations experience significantly have higher incomes, improved access to credit and extension services, and enhanced participation in local institutions. Community-driven models, particularly SHGs and FPOs, play a pivotal role in facilitating the diffusion of innovations and fostering collective bargaining power, especially among women and marginalised groups. However, the study also identifies persistent barriers to widespread adoption, including limited awareness, insecure land tenure, lack of technical knowledge, and social exclusion, which affect the adoption significantly. These barriers underscore the importance of context-specific strategies and supportive policy frameworks to ensure equitable access and participation.

The research further highlights that the success of SAIs is highly context-dependent, shaped by local socio-economic conditions, institutional structures, and the adaptability of innovations to diverse agro-ecological settings. While technological advancements such as digital platforms and solar-powered irrigation have demonstrated potential to bridge information and resource gaps, their impact is maximised when integrated with participatory, community-led approaches. The study concludes that sustainable agricultural innovations hold substantial commitment for advancing inclusive development. However, their transformative potential can only be fully realised through targeted capacity-building, robust grassroots institutions, and enabling policy environments that prioritise the needs of marginalised farmers.

These insights provide guidance for policymakers, development practitioners, and researchers seeking to design and implement equitable agricultural innovation systems. By foregrounding both the opportunities and challenges inherent in the adoption of SAIs, this study contributes to the ongoing discourse on sustainable and inclusive rural transformation in India, emphasising the need for holistic, locally tailored interventions to achieve lasting social and economic equity in the agricultural sector.

Keywords: Agricultural service access, inclusive development, innovation adoption barriers, regional disparities. Sustainable agricultural innovations,

Critical Review on Analysis of Sustainability in Employee Psychological Contract: Machine Learning Approach to Predict Policy on Job Satisfaction

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Abstract
Machine learning predicts Sustainability in Employee Psychological Contract fulfillment and work satisfaction in this research. Data-driven qualitative employee feedback analysis uses tokenization, stop-word elimination, and lemmatization to analyze text. Recursive Feature Elimination (RFE) picks key traits to increase model performance and minimize complexity. The Naive Bayes model classifies work satisfaction probabilistically because it handles categorical data well and is interpretable. Certain Sustainability in Employee Psychological Contract fulfillment criteria influence job satisfaction, says RFE. This research highlights how machine learning may help HR strategy by revealing employee perceptions and satisfaction factors. Future forecast accuracy and model robustness may increase with diverse methodologies. Machine learning predicts Sustainability in Employee Psychological Contract fulfillment and work satisfaction in this research. Data-driven qualitative employee feedback analysis uses tokenization, stop-word elimination, and lemmatization to analyze text. Recursive Feature Elimination (RFE) picks key traits to increase model performance and minimize complexity. The Naive Bayes model classifies work satisfaction probabilistically because it handles categorical data well and is interpretable. Certain Sustainability in Employee Psychological Contract fulfillment criteria influence job satisfaction, says RFE. This research highlights how machine learning may help HR strategy by revealing employee perceptions and satisfaction factors. Future forecast accuracy and model robustness may increase with diverse methodologies.

Keywords - Machine Learning, Sustainability in Employee Psychological Contract Fulfillment, Policy on Job Satisfaction Prediction, Text Preprocessing, Recursive Feature Elimination, Naive Bayes Classification, Employee Engagement Analytics.

Ref: 049/LKA/25

Domestic challenges in South Africa are affecting regional integration

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Abstract

South Africa has made significant contributions to global integration, particularly in light of the adoption of the 2030 Agenda and the Sustainable Development Goals in Paris in 2015. The goals of SADC focused on promoting development and economic growth, reducing poverty, and improving living standards. However, the increase in xenophobic cases has continued to generate enduring fear in security and threaten the lives and livelihoods of foreign nationals. Multiple crises have emerged in South Africa in the wake of the COVID-19 pandemic. General well-being is in severe danger from the immediate effects of the virus and the longer-term impact of hunger due to a growing economic crisis. Whilst the President is aware of the challenges facing the country and the prospective policy intervention, the government faces a mammoth task in dealing with domestic challenges in the face of the need for regional integration. With an increase in incidents of rampant looting, murder, and violence in the country, the safety of the movements of goods, services, and people is not guaranteed. South Africa has framed policies and strategies for regional integration in support of economic growth and development. The rising unemployment and the contraction of the economy mean that a lot of people have lost their jobs and livelihoods, which puts pressure on South Africa's preferences and priorities of regional integration. Today, regional integration is also expected to break or eliminate economic barriers to the exchange of goods, services, capital, and people between two or more countries. The increase in vigilantism has serious implications for South Africa's sovereignty, investment flows, allocation of resources, income distribution, and economic growth. Gender based violence (GBV) has been institutionalized and normalized; those arrested for gender-based violence are given paltry sentences that do not discourage them from engaging in gender base violence (GBV). The paper concludes that the failure to identify domestic challenges will continue to threaten peace, security, and regional integration.

Keywords: South Africa, domestic, poverty, xenophobia, unemployment, regional integration

Experience of forgiving in Indian marriages: A Qualitative Inquiry

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Abstract
The lack of knowledge about forgiveness in Indian marriages in South Africa creates a difficulty in understanding the implications and cultural sensitivity regarding forgiveness between spouses. There is a need to explore the experiences of forgiveness in Indian marital relationships by providing a thorough understanding of the aspects that influence the process of forgiveness to better enhance the knowledge of health promotion interventions and understanding of cultural sensitivity in marriage counselling. This article discusses the understanding of forgiveness in marriages, participant's life experiences, psychosocial and cultural influences of forgiveness and explores ways on how to promote forgiveness in Indian marriages. It presents 8 participants, 4 married men and 4 married women from middle socioeconomic areas in Durban, KwaZulu Natal. The ecological systems theory was utilised as a framework for the study and data collected was evaluated, organised and analysed through thematic analysis. Through focusing on the participants understanding of forgiveness in their marriage, their lived experiences of forgiveness, the psychosocial and cultural influences and how to promote forgiveness in their marriage. The study found that participants experienced forgiveness more positively, allowing trust and harmony to be recreated in both their spousal and/or family systems. Reconciliation in Indian marriages plays a crucial role and affects participants' family system, spousal system, their psychological health and well-being. The study also found that Personality, cultural and theological influences were the leading motivators of forgiving in Indian marriages. Participants promoted marital counselling and face-to-face conversations about transgressions in their spousal system to assist marital forgiveness in Indian marriages.

Ref: 051/LKA/25

Traversing LGBTQ+ developments in Karnataka: A sector analysis of Education, Health and Employment

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Abstract
This report analyses LGBTQ+ development in state of Karnataka, India. It focuses on developmental impact on education, health, and employment in the queer community. The 2014 NALSA Judgment by the Supreme Court of India, recognised transgender persons as a 'third gender,' and laid the foundation for the Transgender Persons (Protection of Rights) Act, 2019.

Karnataka has shown remarkable initiative, enacting its Karnataka Transgender Policy in 2017 before the national Act. This was reinforced by the Karnataka Transgender Persons (Protection of Rights) Rules, 2021, which operationalized the national Act at the state level. A significant step for economic inclusion is the Karnataka Employment Policy 2022-2025, mandating a 1% reservation for transgender persons in government jobs, a groundbreaking affirmative action.

In education, clear anti-discrimination laws are in place, yet 50% of transgender individuals report facing bullying or discrimination. Challenges include a lack of inclusive infrastructure, insensitivity among educators, and subsequent high rates of mental health issues and dropouts.In the health sector, 16% of LGBTQ individuals report discrimination by doctors, leading 39% to avoid seeking necessary care. High rates of anxiety and depression among LGBTQ+ youth, and a 12% suicide attempt rate, underscore the critical need for sensitive healthcare.

In employment, despite the 1% job reservation and explicit policy inclusion, unemployment and underemployment remain high for transgender individuals, with only 6% formally employed. This often forces many into precarious livelihoods like begging or sex work, perpetuating marginalisation.

Keywords: Gender Affirmation; Karnataka; LGBTQ+; Protection of Rights; Reservation

Beyond Delayed Gratification: Towards a Theory of Mental Conditioning for Sustainable Poverty Reduction

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Abstract
The theory of delayed gratification is widely recognized for its explanatory power in predicting individual and societal success. It posits that the ability to defer immediate desires in favor of greater future rewards is crucial for achieving long-term goals. In the context of poverty reduction, this theory suggests that the ability of individuals living in poverty to delay immediate gratification is crucial for escaping poverty. Those who can delay gratification are more likely to break free from poverty, while those who cannot tend to remain trapped in it. This paper highlights the limitations of the delayed gratification theory in explaining why poverty reduction achieved through this approach often fails to reduce inequality and ensure sustainability. It seeks to move beyond the theory by presenting an alternative theoretical framework that better explains the persistence of poverty and the shortcomings of delayed gratification in addressing inequality and unsustainability. The study draws on three sources of data: (1) a comprehensive literature review, (2) introspective insights and non-judgmental observation of thoughts and emotions by the second and third authors, and (3) a field survey conducted in the *Kobeigane Grama Sevaka* (GS) Division of the *Kurunegala* District in Sri Lanka, involving interviews with 35 individuals from both wealthy and poor families. Our findings confirm that, as the theory suggests, individuals in poverty who possess the ability to delay gratification are more likely to escape it. However, their success often reinforces the very desires they once delayed. As a result, these reinforced desires—along with the associated aversions, sense of self, and self-centeredness—have diminished their capacity to act in harmony with themselves, others, and nature in ways that promote equality and sustainability. This limitation stems from the theory's underlying materialistic paradigm, which implicitly assumes that desires are fixed and permanent traits of human nature. In contrast, our findings reveal that desires are not fixed and permanent but conditioned mental constructs that can be dissolved by freeing the mind from its conditioning. Based on this insight, the paper proposes an alternative theory of mental conditioning. This theory suggests that sustainable poverty reduction, along with reduced inequality and enhanced sustainability, depends not merely on delaying desires but on transcending them altogether. It argues that the perpetuation of poverty is driven not only by external material conditions but also by internal factors—namely, mental conditioning that constrains individuals' capacity to escape poverty and foster equality and sustainability. While acknowledging the importance of addressing structural and external factors, the proposed theory emphasizes the transformative potential of freeing the mind from conditioning. A mind thus freed acts naturally and spontaneously for the well-being of the whole—self, others, and nature. Such inner transformation, in both wealthy and poor individuals, leads to poverty and inequality reduction that is both effective and sustainable. Drawing on this theoretical framework, the paper outlines practical strategies for integrating mind-liberating practices into poverty reduction programs through local religious centers, educational institutions, and voluntary groups.

Keywords: Beyond Gratification Theory, Mental Conditioning, Poverty Alleviation, Spirituality, Sustainability

Optimizing Passive Design Strategies in Warm-Humid Climates: A Holistic Framework for Green Building Rating Systems

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Abstract
Green Building Rating Tools (GBRTs) like LEED, BREEAM, GRIHA, and WELL assess building sustainability, but often overlook a standardized framework for evaluating passive design strategies, critical for energy efficiency and thermal comfort in warm-humid climates. This study proposes a holistic framework for optimizing passive strategies by integrating qualitative expert insights with quantitative data across rating systems. Using PCA, MCDA, and regression modelling, a weighted scoring system is developed to compare strategies. Analysis shows combined passive strategies improve sustainability performance significantly. Home Performance Index (24.72) and ARZ (23.06) score highest in passive design emphasis, while LEED (10.91) and GRIHA (9.96) reveal improvement potential. The proposed AHP framework focuses on envelope optimization, natural ventilation, insulation, and material selection to enhance climate responsiveness. Case studies demonstrate passive measures like shading, ventilation, and insulation reduce cooling loads by 59%, lower indoor temperatures by 2.5–3°C, and boost energy savings up to 29%, reinforcing their value in warm-humid climate contexts.

 Keywords: GBRTs, Passive design strategies, Sustainability performance, Warm-humid climate, Weighted scoring model.

The role of traditional knowledge in sustainable food systems: A temporal and thematic analysis

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Abstract
Traditional knowledge encompasses the skills, knowledge, practices, beliefs and insights passed through generations by the traditional or local communities. These knowledge systems are crucial for enhancing food security and preserving the cultural practice. This study aims to provide a comprehensive knowledge mapping and portray the publication trends in the use of traditional knowledge (TK) for sustainable food systems and food security. The Vosviewer tool was used for visualizing the data obtained through the Scopus database. A total of 989 documents published in English within the period of 1992-2024 were considered for the analysis (Date acquisition: 30th July 2025). The analysis was conducted across three time spans of 11-year intervals (1992-2002, 2003-2013, 2014-2024). The period between 1992-2002 displays relatively limited keyword diversity and less interconnection between clusters, indicating the initial stage of attention towards TK and food security. Apart from the interconnected clusters, an outlier cluster was also visible in this period and the research during this phase was foundational. During the second phase (2003-2013) "food security" is highlighted as the core theme, while other topics clustered around climate adaptation, agricultural innovation and spatial geographic expansion. The period between 2014-2024 marks high complexity of themes, indicating the field has evolved significantly in multi-dimensional aspects. Food security, TK and Climate change are tightly interconnected, while attention to sub-themes like health, policy and technology has evolved significantly. Overlay visualization of the key themes highlights the areas of high research concentration and emerging interest, enabling researchers to engage with trending topics and contribute to the ongoing development of the domain. Overall, the study provides valuable insights into the evolving research landscape, highlighting that TK has become an essential part of advancing sustainable food systems and human health, including community resilience.

Keywords: Bibliometric analysis; Food security; Indigenous knowledge; Sustainable food; Traditional knowledge.

Integrating AI into Eco-Tourism: A Conceptual Framework for Sustainable Travel Planning

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Abstract
This study proposes a conceptual framework to explore the adoption of Artificial Intelligence (AI) technologies in the tourism sector, emphasizing factors influencing adoption and their impact on sustainable tourism development. Drawing from the Technology Acceptance Model (TAM) and the Expectancy-Disconfirmation Theory (EDT), the framework incorporates constructs such as Perceived Usefulness (PU), Perceived Ease of Use (PEU), Technological Anxiety (TXN), Perceived Trust (PTR), Anthropomorphism (ANM), Perceived Intelligence (PNT), Infrastructure Readiness (IR), Tourist Engagement (TE), and Sustainable Initiatives (SI). The framework highlights the critical role of AI in enhancing operational efficiency, personalization, and sustainability in tourism. It provides a foundation for understanding the psychological, technological, and infrastructural factors driving AI adoption, offering actionable insights for researchers and practitioners to advance AI-driven sustainable tourism development.

Keywords: Artificial Intelligence (AI), Tourism Adoption Sustainable, Tourism Development, Perceived Usefulness (PU), Perceived Ease of Use (PEU), Technological Anxiety (TXN), Perceived Trust (PTR), Infrastructure Readiness (IR)

Ref: 056/LKA/25

An Integrated Geospatial Assessment to Evaluate Factors Affecting Sustainability of Ecosystem Services of Urban Wetlands Due to Fragmentation: A Case study of Bellanwila-Attidiya wetland in Sri Lanka

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Abstract

Urban wetlands are crucial ecosystems that offer a wide range of ecosystem services, including flood mitigation, biodiversity support, and climate regulation. However, in rapidly urbanizing areas, the sustainability of these services is increasingly compromised by land fragmentation. The objective of this research was to identify ecosystems services provide by the Bellanwila-Attidiya Wetland and to analyse spatial and temporal changes of wetland fragmentation and to evaluate the drivers of loss of ecosystem services provided by the Bellanwila-Attidiya Wetland due to wetland fragmentation. A geospatial assessment was carried out using Landsat satellite images acquired in 1995, 2011 and 2024 to assess spatial and temporal changes of fragmentation. Fragmentation parameters such as the Number of Patches, Patch Density, Mean Patch Area, Edge Density were estimated using QGIS to assess wetland fragmentation that affects the sustainability of ecosystem services. Then factors affecting the loss of ecosystem services due to fragmentation was assessed. The data were collected through key informant interviews with experts and focus group discussions with local residents of the wetland. The results indicated that the Bellanwila-Attidiya Wetland provides vital ecosystem services including flood regulation, biodiversity conservation, water purification, air pollution control recreational opportunities and health benefits for residents and people living in surrounding region. Spatial analysis from 1995 to 2024 reveals a significant reduction in wetland cover from 60% to 38% accompanied by increased fragmentation, with the number of wetland patches rising from 16 in 1995 to 141 in 2024. Household surveys and interviews revealed that unregulated housing expansion (70%), inadequate enforcement of environmental laws (68%), and infrastructure development (65%) as the primary factors of wetland fragmentation that have affected the sustainability of ecosystem services in Bellanwila-Attidiya Wetland. The survey data revealed that 67% of respondents have observed a noticeable decline in water quality over the past decade. Biodiversity indicators, including bird and amphibian presence, were reported to have decreased by 45% since 2000, based on observational and community-reported data. The findings of the research highlight the need for stronger conservation efforts. Implementing clear land-use policies, restoration programs, and better enforcement can be recommended to sustain the Bellanwila-Attidiya Wetland's ecosystem services.

Keywords: Ecosystem services, Environmental sustainability, Fragmentation, Geospatial analysis, Urban wetlands

Public Policy, Democratic Governance, and Sustainable Development in Karnataka:
A Critical Study on Poverty Alleviation

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Abstract
This research paper examines the complex relationship between poverty, Sustainable Development, public policy, and the democratic framework in Karnataka, India. The United Nations set out the Sustainable Development Goals (SDGs) in 2015, which are 17 global goals that apply to all countries around the world. Achieving these goals by 2030 is a priority for all countries. They cover a range of social, environmental and economic issues, including poverty, hunger, health, education, climate change, gender equality, water and sanitation, energy, urbanization, and social justice. Despite India's federal structure, state governments play a critical role in implementing welfare policies. Karnataka, with its history of progressive reforms, has been a forerunner in experimenting with poverty alleviation programmes rooted in participatory governance. It aims to analyze the current poverty landscape in the state, evaluate the effectiveness of policy measures designed to alleviate poverty, assess the democratic structures involved in the formulation and implementation of these policies, and identify key opportunities and challenges for enhancing public participation in policy making. The paper also evaluates the effectiveness of policies such as rural employment schemes, food security measures, housing programmes, and women-focused interventions, while critically examining how democratic processes like Gram Sabhas and participatory budgeting shape their outcomes and sustainable development. The study is grounded in an analysis of government reports, surveys, academic literature, and official policy documents. It emphasizes the critical role of democratic governance in addressing poverty and argues that inclusive and participatory processes are essential for the success of poverty alleviation efforts. The findings highlight the need for future policies to strengthen civic engagement and address the deep-rooted socio-economic disparities that continue to hinder equitable development in Karnataka. Special attention should be given to developing region-specific strategies focused on sustainable development and capacity building, particularly in areas with persistently high poverty levels. Future policies ought to give civic involvement top priority and deal with the socio-economic inequalities that still have an impact on the state's progress. Develop targeted interventions for regions with high poverty rates, focusing on sustainable development and capacity building.

Keywords: Democratic; Karnataka; Poverty Alleviation; Public Policy; Sustainable Development

Ref: 058/LKA/25

The Role of Functional Strategies for Sustainable Development of Small Business Retails in Achieving Economic Objectives

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Abstract

This paper explores and investigates how functional strategies specifically marketing, operations, finance, and human resource contribute to the sustainable development of small retail businesses and their alignment with broader critical economic objectives. Small business retailers play a vital role in the economy, contributing to employment, innovation, and community development. However, they face numerous challenges in achieving sustainable development and economic objectives. This study explores the role of functional strategies in enabling small business retailers to achieve sustainable development and economic objectives. Using a mixed-methods approach, this research examines the impact of marketing, operational, financial, and human resource strategies on the sustainable development of small business retailers. The findings highlight the importance of integrating functional strategies to achieve economic objectives, enhance customer experience, and promote environmental and social sustainability. This study provides insights for small business retailers, policymakers, and stakeholders on the development of effective functional strategies for sustainable development and economic growth. Through a qualitative multiple case study approach and drawing on established literature based approach, the study identifies key strategic practices that enhance resilience, profitability, and social impact in the retail sector. the research highlights strategic interventions that enhance competitiveness, resilience, and community engagement. The findings emphasize the need for strategic adaptability, digital integration, and inclusive management to optimize long-term economic and social outcomes.The study also identifies how strategically implemented practices enable elasticity, innovation, and alignment with broader economic goals and Objectives.

Small retailers can serve as community hubs, fostering social connections and a sense of community. Supporting local livelihoods small retailers contribute to the livelihoods of local farmers, artisans, and small-scale producers through social impact by creating a community hub. However, sustainability challenges ranging from resource constraints to market volatility require strategic responses, limited access to finance often face challenges in accessing finance, limiting their ability to invest in growth and development, may face intense competition from larger retailers, which can threaten their viability from large competitive retailers. Small retailers can leverage digital technologies to enhance their operations, reach new customers, and improve competitiveness and Governments can provide support to small retailers through initiatives such as training programs, access to finance, and favorable policies as a part of digitalisation and government support. In summary small retailers play a crucial role in emerging economies, contributing to employment, local economic development, access to goods and services, innovation, and social impact. This paper investigates how functional strategies can be leveraged to ensure long-term viability and economic contribution. Small business retailers play a pivotal role in regional economies by fostering employment, innovation, and local engagement. However, sustainability challenge such as resource scarcity, market volatility, and technological shift have made strategic management essential. This paper explores how targeted functional strategies help these enterprises align with national and global economic objectives.

Keywords: Economic objectives, Functional strategies, Mixed- Methods, Sustainability, Small Business Retail, Strategic management)

Corporate Governance in the Age of Gen AI: A Sectoral Analysis of Financial Services

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Abstract

Corporate governance is crucial for financial services sector because it ensures transparency, accountability, and ethical conduct, leading to increased investor confidence, financial stability, andsustainable growth. GEN AI is transforming corporate governance by reshaping the industry by enhancing customer service, decision-making, and risk management, ultimately enhancing corporate success. This study aims to fill a gap in the literature on corporate governance in the age of GEN AI in the financial services sector. The objective of the study is to examine the role of GEN AI in enhancing corporate governance and the challenges faced by financial sector professionals i.e., portfolio managers, credit analysts, fintech product managers, and risk analysts while using GEN AI platforms in the financial services sector. The study reveals that GEN AI impacts Corporate Governance in the Financial Services Sector by offering benefits like transparency, explainability, user focused governance, fraud detection, and identity security. However, challenges faced by financial sector professionals like data quality, privacy, security, bias, fairness, explainability, and security. Additionally, challenges include infrastructure, cost, and technical complexity. These technological challenges also pose a significant threat to the financial sector& corporate governance.

Keywords: Corporate Governance, GEN AI, Financial Services Sector, Financial Services Professionals.

Counselling For Employability Skills Acquisition Among Adolescents In Enugu State, Nigeria

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Abstract
Youth unemployment remains one of the most critical socio-economic challenges confronting Nigeria, with recent statistics indicating that over 50% of young people are either unemployed or underemployed. Despite the country's growing youth population, many adolescents leave secondary school without the essential skills needed to compete in the labour market or transition successfully into tertiary education or vocational training. A major factor contributing to this gap is the insufficient acquisition of employability skills that are integrated into one's career pursuit. The skills include communication, teamwork, problem-solving, critical thinking, adaptability, networking, leadership and technical proficiency. They are the competencies that employers consistently identify as prerequisites for effective job performance.

The growing mismatch between the skills Nigerian youths possess and the expectations of the job market raises concerns for national development, economic stability, and youth wellbeing. While various policy efforts have attempted to address the unemployment crisis, many interventions fail to begin early enough or to leverage the existing structures within the school system particularly the counselling units where adolescents could be meaningfully engaged in career development and skill-building. This study was therefore undertaken to explore the counselling approaches that can enhance employability skills acquisition among adolescents in Enugu State, Nigeria, with a view to contributing to evidence-based practice in school counselling and youth empowerment initiatives.

Employability skills are broadly classified into two main categories: technical skills, which include job-specific or vocational abilities, and soft skills, which are transferable skills such as communication, leadership, emotional intelligence, and teamwork. Within the school context, guidance counsellors play a critical role in nurturing these skills by providing structured career guidance, psychosocial support, mentoring, and skills development programmes personalized to students' needs and aspirations. However, the extent to which these counselling strategies are being effectively deployed to support adolescents' employability, especially in resource-constrained settings, remains under-examined.

This study adopted a qualitative research design to gain in-depth insights from practising school counsellors. A total of 20 experienced counsellors were purposively selected from secondary schools across rural and urban areas of Enugu State. Data were collected through semi-structured interviews and focus group discussions, allowing for the exploration of diverse experiences, perceptions, and practical challenges in implementing employability-oriented counselling. The data were analysed using thematic analysis, guided by Braun and Clarke's six-phase framework.

The findings revealed that three primary counselling approaches were consistently reported as effective in promoting employability skills acquisition among adolescents: career guidance, skill development activities, and mentorship. Career guidance included one-on-one sessions, group career talks, career days, and job shadowing experiences that exposed students to a range of career options and helped them align their academic goals with labour market realities. Skill development activities, such as workshops on communication, CV writing, entrepreneurship, digital literacy, and public speaking, were also highlighted as vital tools that empower students with practical skills. Mentorship programmes, emerged as a particularly powerful strategy in boosting self-efficacy, confidence, and motivation.

Despite the evident benefits of these counselling approaches, several structural and contextual barriers were identified. Counsellors reported a lack of adequate funding, insufficient training opportunities, and limited access to modern tools and materials, such as computers and internet connectivity. These challenges were particularly acute in rural schools, where infrastructure deficits and social norms often hinder the effectiveness of counselling interventions. Cultural beliefs and gender stereotypes were also cited as barriers, with some parents discouraging girls from pursuing certain career paths or undervaluing non-academic skills. Moreover, the study found that parental involvement in adolescents' career development was generally low, thereby limiting the impact of counselling efforts.

The study highlights the critical need to integrate employability-focused counselling more systematically into the secondary school curriculum. This requires a multi-stakeholder approach involving policymakers, school administrators, teacher training institutions, parents, and community leaders. Schools should be supported to establish dedicated career counselling units equipped with relevant resources, and counsellors should be provided with continuous professional development to keep pace with evolving labour market demands. Additionally, digital tools and platforms should be leveraged to enhance access to career information and virtual mentoring, particularly in underserved areas.

In conclusion, the study contributes valuable insights into how counselling can serve as a strategic tool for addressing youth unemployment through early intervention and skills development. It highlights the transformative potential of career guidance, mentorship, and life skills training when adequately supported and contextually adapted. By prioritising employability within the education system and removing the structural and cultural barriers that limit its delivery, Nigeria can empower its adolescents with the capabilities needed to thrive in an increasingly complex and competitive world. The findings have significant implications for education policy, practice, and future research on youth development in low-resource settings.

Unravelling Socio-Spatial Dimensions of Appropriation of Urban Spaces for Street Vending in Hyderabad

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Abstract
Street vending constitutes a vital part of the informal urban economy in Indian cities, offering affordable goods and services while providing livelihoods to a significant portion of the urban population. Despite its critical role in shaping the everyday functioning of cities, street vending remains largely underrepresented in formal urban planning and policy frameworks. This study investigates the spatial appropriation and negotiation of public spaces by street vendors in Hyderabad, with a focused examination of three distinct and strategically selected case areas: Ameerpet, Sultan Bazaar, and Gudimalkapur.

Drawing from comprehensive fieldwork, spatial mapping, semi-structured interviews, questionnaire-based surveys, and regression analysis, the research explores how spatial patterns, economic outcomes, and socio-political contexts influence street vending practices. The findings indicate that although vendors are highly visible in the urban landscape, their presence is far from secure. They engage in constant negotiations and informal arrangements, often with shop owners or by using mobile vending setups, to retain access to prime vending locations. These adaptive strategies are innovative but inherently fragile due to the lack of legal protection and structured urban support.
The study critically evaluates the limited success of urban authorities in Hyderabad in implementing inclusive planning measures for street vendors. Specifically, efforts to allocate designated vending zones or fixed spaces have remained inadequate. As a result, vendors continue to face challenges such as insecure tenure, overcrowded conditions, poor sanitation, and heightened vulnerability to eviction. Regression analysis further reveals strong correlations between vendor income levels and spatial-environmental variables such as pedestrian footfall, proximity to basic infrastructure, and clarity of legal rights over vending space.

This research argues for the urgent need for spatial interventions and institutional reforms that formally integrate street vending into the urban planning framework. Such reforms should include the creation of inclusive design guidelines, participatory governance mechanisms, and targeted infrastructure improvements that respond to the spatial logic and daily needs of informal traders. Recognizing the spatial appropriation of public areas by vendors not as encroachment but as a functional adaptation can lead to more inclusive and human-centric design of public spaces.
The findings contribute meaningfully to ongoing discourses on urban informality, spatial justice, and sustainable urban development, particularly in the context of the Global South. They highlight the need for planning approaches that embrace economic diversity and promote equitable use of public space.

Keywords: Informality; Livelihood; Street Vending; Spatial Appropriation

Anthropological Perspectives on Goiter Awareness: Towards Inclusive Health Development for Middle-aged Women

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Abstract
Non-communicable diseases (NCDs) remain as a major global health challenge, particularly in low- and middle-income countries, where health education is unevenly distributed. Goiter, a thyroid disorder linked to iodine deficiency, identified by the World Health Organization as a NCD, normally affects women over 40. Beyond its biomedical dimensions, goiter embodies broader issues of social exclusion, gender vulnerability and unequal access to health information.

This research sought to answer two key questions: what is the level of awareness regarding risk factors, symptoms and preventive measures for goiter? And how do socio-cultural practices influence women's health behaviors? The main objective of this anthropological study is to examine knowledge, awareness and cultural practices related to goiter among middle-aged women (35–55 years) in the Dediyawala Grama Niladhari Division of Kalutara District, Sri Lanka. Purposive and random sampling methods were employed to select the study sample. The sample comprised 100 women, of whom 10% were diagnosed with goiter and 90% were non-patients residing in the same community. Primary data were collected through structured interviews focusing on personal health histories, awareness of goiter and iodine intake, socio-cultural and preventive practices, while secondary data provided epidemiological reports and research papers. The analysis emphasized both biomedical understanding and socio-cultural determinants of health. Key findings highlight that 75% of non-patients did not have a basic awareness of signs and symptoms of goiter and goiter risk factors including hormonal changes. They do not have any idea about the pituitary gland and its help to the normal body metabolism. Thyroid patients also did not have an idea on pituitary gland and its function previously. Most of the housewives (80%) had an idea about the iodized salt, but they are not aware of its relationship between iodine and thyroid. Most of non-diseased participants (80%) add salt to the curries in the initial stage of cooking and they are not aware of denaturing of iodine with temperature. However, 20% of respondents have an awareness on salt addition, but they don't like to change their socio-cultural practice of salt addition when cooking and highlight the taste difference. Only 06% of thyroid patients are practicing salt addition after cooking as they were medically instructed to do so and others don't like to change their inherent practice.

Delayed detection and treatment of 06% of thyroid patients have led to complications and surgical treatments. They have sought medical advice only after the symptoms became severe. They have used herbal beverages and practiced magical treatments for long periods to get relief from the initial symptoms. This delay leads to an unnecessary burden on them as well for the health sector. The study further revealed significant gendered vulnerabilities. Hormonal fluctuations associated with life stages like pregnancy and menopause were evidenced as contributing factors to heighten the risk.

In conclusion, the findings emphasize that addressing non-communicable diseases like goiter requires multidimensional approaches that integrate cultural competence, gender sensitivity and equitable access to preventive education. Developing inclusive health promotion strategies that align with socio-cultural realities can empower women and contribute meaningfully to national and global sustainable development goals. Social media, identified by participants as an accessible and trusted information channel, offers a promising platform to bridge knowledge gaps and enhance health literacy.

Keywords: Anthropology, Cultural practices, Goiter awareness, Inclusive Health Development

Integration of Machine Learning and Logistic Analytics: A Critical Review and Evaluation on Sustainable Employee Psychological Contract and Predict their Workforce Retention

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Abstract

In the high impacting and tier-1 organisations, the attrition rate of the employees has become a very critical component towards the efficacy of the organisation, thus resembling the requirement from the management aspect. As this factor merely affects the value driven, productiveness and sustainability, thus employee attrition is worried. The bonding with the employer and employee expectations, their psychological contract and retention rate is tested and analysed in this research article, as well as the mediating influence of employee attrition. Then to resolve this problem, the research is focused on the creating a prediction model to predict and understand the next employee to take a leave off the company through machine learning technology inclusive of logistic regression, XGBoost and clarified AI. In this research article, HR policies about the job descriptions, measurement of performance, demographical representation and workplace conditions were observed from the easily accessible portal called as Kaggle. XGBoost was very well considered as it has an accuracy level of 90.4%. The significant features which are very important gave aa substantial impact on the stock options, their marital status and high attrition rate was underscored. Monetary incentives, employee work life balance and their well-being are few of the various other important components. This research article gives us the solid insight on the prediction level of employee attrition in practical way at organisations for generating the interventions which enhances the work place efficacy and stability in their productivity.

Keywords: Machine learning, Employee Psychological contract, Logistic analytics, Workforce Retention, Attrition.

Navigating Academic Entrepreneurship- A Case Study

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Purpose:
This paper aims to explore the relationship between academic entrepreneurship, new venture creation, and innovation, using a case study of a leading engineering college in Karnataka, India.

Design:
The study employs a case study methodology to examine how the engineering college in a Tier 2 city in Karnataka has fostered academic entrepreneurship despite facing unique challenges.

Findings:
The case study reveals that SIT the college undertaken for study has established a supportive environment for academic entrepreneurship by going beyond traditional support for research. It provides infrastructure, mentorship, and financial aid to faculty members and others, without claiming ownership in the resulting ventures. Within three years of establishing its own incubation center, the college successfully converted two research ideas into ventures, with additional ventures in progress.

Implications:
The findings of this study have both theoretical and practical implications. Theoretically, it contributes to understanding the process of enhancing academic entrepreneurship. Practically, it provides insights into creating an ecosystem that can be replicated by other colleges seeking to foster academic entrepreneurship.

Contribution:
This paper contributes to the literature by offering a detailed exploration of the relationship between academic entrepreneurship, new venture creation, and innovation within the context of SIT. It highlights the importance of providing comprehensive support to faculty members and others involved in academic entrepreneurship and offers a potential model for other colleges to emulate.

Keywords: *Academic Entrepreneurship, Entrepreneurship, Ecosystem in HEIs*

From Ideas to Impact: Enhancing Startup Productivity through Intellectual Property Management

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Abstract
This research study examines the critical role of intellectual property (IP) management in improving the productivity of startups in the Indian entrepreneurial ecosystem. Based on a thorough literature review and empirical data gathered from 398 professionals working in various startups, the study uses exploratory and confirmatory factor analysis, followed by partial least squares-structural equation modeling (PLS-SEM) using SmartPLS 4.0 software. The study identifies five essential constructs-integration of IP strategy, knowledge management, resource limitations, non-patent IP valorization, and digitalization of IP management-and tests their impact on startup productivity. Results indicate that startups which actively incorporate IP strategy and strong knowledge management practices into their strategy record much greater productivity and scalability. Digitalization of IP management comes out as the most critical factor, making processes easier and providing democratized access to IP expertise. On the other hand, resource limitations are demonstrated to impede efficient IP management and constrain productivity increases. The research also identifies the significance of non-patent IP assets, including know-how and trade secrets, especially in industries where patenting is less viable. These findings stress the necessity of policy interventions specifically designed, greater IP education, and higher uptake of digital instruments to facilitate innovation-led growth. The study provides actionable advice for entrepreneurs, investors, and policymakers and maps out future scholarship directions in IP management and startup creation.

Keywords: Digitalization, Intellectual Property Management, Knowledge Management, Startup Productivity

Ref: 066/LKA/25

Bridging the Skills Gap: VET Centres as Catalysts for Sustainable Economic Growth

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Abstract
Vocational Education and Training (VET) centres play a critical role in equipping youth and marginalized communities with practical skills that foster economic growth, social inclusion, and environmental sustainability. This paper examines the potential of VET centres to advance the United Nations Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education), SDG 8 (Decent Work and Economic Growth), and SDG 9 (Industry, Innovation and Infrastructure). Drawing on global and Indian experiences, the study evaluates VET centres' effectiveness in training delivery, employability, gender inclusion, and the integration of green skills. Findings highlight the significant contributions of VET to reduce youth unemployment and promoting local entrepreneurship, especially in rural and semi-urban areas. The paper concludes with policy recommendations to enhance the role of VET centres as key drivers of sustainable human capital development.

Keywords: Vocational Education and Training centres; Sustainable Development Growth; Economic Growth; Social Inclusion; Environmental Sustainability.

AI-Driven Work Environments for Sustainable Retention of Indian Employees: A Critical Review on the Role of Psychological Contracts and Job Satisfaction Policies

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Abstract: In light of the rapid digital revolution taking place in the modern workplace, this article examines and discusses the evolving nature of the employee-employer relationship from an Indian perspective, paying special attention to how artificial intelligence (AI) is affecting workers' job happiness and the psychological relationship they carry with their employer. The data is retrieved from 321 Indian employees through a digital survey, and then statistical analysis is carried out to understand the psychological basis and impacts of their behaviour in relation to integrating AI at work. Therefore, the evidence suggests that AI adoption is positively correlated with job satisfaction levels; however, when transformational leadership tendencies are connected with psychological contracts, this positive correlation is diminished.

Keywords: Digital transformation, AI, job satisfaction, psychological contract

Legal Analysis of Custody Rights and Their Impact on Gender Equality in Sri Lankan Family Courts

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This article explores the theme of the conference on "Gender studies" through the question of whether Sri Lanka's decision on custody evidence influences societal views of parental roles, despite the existence of statutory law nominally embracing joint parental responsibility. Overwhelmingly, primary custody has nevertheless still been awarded to mothers by Sri Lanka's family courts, which raises substantial empirical as well as theoretical reservations about whether norms of law that should be founded on a principle of gender neutrality actually translate into substantive equality, or whether, on the contrary, they exhibit increased stereotypes of women as child nurturers and men as distant providers.

Empirical work from other jurisdictions has demonstrated an international trend supporting joint models of parenting as the best approach for children's well-being. Reforms of laws, however, remain at the implementation level for the South Asian setting, as judicial officers resort to customary cultural scripts rather than designed tests of parental ability. Descriptive overviews of the laws of custody are found in Sri Lankan scholarship, as well as episodic case studies, but a systematised discussion of patterns of gendered cognition within the judiciary has remained absent thus far. In contradistinction to international scholarship about joint custody, and setting Sri Lanka's family practices aside, the study sheds light, on the one hand, on the promise of legislative neutrality of the sexes, as well as, on the other, on the peril of unexamined judicial freedom.

Our study intermingles doctrine-oriented analysis of principles, applied through comparative case-law scholarship, with qualitative empirical scholarship. We initially examined fifty reported family court decisions from 2015 to 2022, coding them based on decisions of sole mother, sole father, joint, or split custody, as well as on salient uses of gendered assumptions in reasoning. We later conducted semi-structured interviews with twelve family-court judges, eight family-law practitioners, and six social welfare officers responsible for writing standard reports on child welfare. These interviews focused on the interpretation of statutory criteria, the influence of social welfare assessments on judges' decision-making, and the wider cultural norms that shape courtroom discourse.

Our comparative questionnaire identifies four overriding trends in case-law norms and interview testimonials. First, contrary to Sri Lanka's Guardianship of Minors Ordinance and complementary acts allowing for joint care, 84 per cent of sampled verdicts awarded sole custody to mothers—a significant difference between the law and actual practice. Secondly, judges' opinions often refer to presumptions of inherent motherly caring roles and fathers' economic burdens—rhetorics of prevailing societal stereotypes—contrasted with verdicts based on the best interests of the child. Thirdly, social welfare literature, which serves as primary evidentiary input, rarely evaluates fathers' caring capabilities, thus institutionalising the trend of judicial officers appropriating maternal custody decisions as a right. Finally, interview respondents indicated that judges, despite lacking specialised knowledge in family law, used traditional cultural discourses to avoid confrontation, often to the detriment of fathers' rights and children's holistic interests.

In conclusion, we demonstrate that Sri Lanka's family courts, under the cover of a nominally gender-neutral statute, systematically institutionalize gender inequity through gendered arguments as well as institutional momentum. To realize substantive gender equality, we propose four significant reforms: mandatory training of judges on gender-inclusive decision-making and international best practices on joint parenting; legislative reforms to implement presumptive joint custody, including express grounds for exception; standardized procedures for the evaluation of social welfare assessing the caregiving ability of both parents symmetrically; and public education programs that question patriarchal customary norms on parenting. These reforms have applications beyond Sri Lanka, offering a template for jurisdictions that wish to translate statutes that are nominally gender-neutral into balanced decisions from the bench on joint parenting. By placing evidence-based best practices on shared parenting centre stage, courts around the world can balance the rights and obligations of mothers and fathers more effectively, ultimately serving the best interests of children in diverse, culture-specific settings.

Ref: 069/LKA/25

Assessing the Impact of Risky Trees on the Sustainable Management of Urban Green Spaces Using Geospatial Technology: Special Reference to Colombo Municipal Area in Sri Lanka

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Abstract
Urban green spaces are vital for many reasons, such as to improve environmental quality, to foster biodiversity, and to enhance the social and economic lifestyles of urban citizens. In highly populated cities like Colombo, Sri Lanka, urban trees are an important part of these green spaces and provide numerous ecosystem services such as: climate regulation, air purification, shade, stormwater control and esthetics. While it is apparent that urban trees can increase human health, it is also evident that risky trees that are likely to fail, either structurally, through disease or other types of failure, cause significant challenges in successful urban green space management and stewardship. Risky trees present a risk to citizens. The risks are elevated when urban trees fail due to falling branches or uprooting. These risks can reflect injury to citizens as well as property damage disrupting urban mobility systems, particularly with exceptional weather events. In addition, the Colombo Municipal Area lacks systematic, technology-based risk assessment and tree risk management strategies that inform the maintenance of urban trees and the surprises many reactive maintenance practices create increase the safety risk and inefficient use of resources.

This study will evaluate how trees with risk affect the sustainable management of urban green areas by introducing spatial technology into the risk assessment process. Specific objectives are to identify the spatial distribution of urban risky trees in urban green spaces of the Colombo Municipal Area using geospatial technologies, evaluate the risk levels and factors contributing to urban tree risk and provide recommendations for urban tree risk management to enhance the sustainable planning of urban green spaces. The method is a combination of field assessments and spatial analysis using Geographic Information Systems (GIS), Remote Sensing (RS), and Light Detection and Ranging (LiDAR). Key variables comprise tree characteristics (height, age, diameter at breast height [DBH], canopy spread, critical root radius [CRR]), tree defects, environmental variables (rainfall intensity, wind exposure, soil condition), and location-specific characteristics (distance to nearest road edge and buildings).

Field data was gathered at predetermined locations located along principal thoroughfares inside the GNDs of Kurunduwatta and Thimbirigasyaya, selected due to their prominent tree density and urban activities. A Global Positioning System (GPS)-enabled device was utilized to identify the precise geolocation of the sampling opportunity associated with field data collection. For canopy data and height geolocation characteristics, LiDAR scan data and high-resolution imagery were obtained from the same time period. The data were described using a Multi-Criteria Decision Analysis (MCDA) framework that accounted for the weighting of overlay methods, and spatial tools including buffer analysis, kernel density mapping, and hotspot analysis. To recommend action according to online data and empower statistics, correlation and regression statistics were used to quantify relationships between the variables and concisely represented are information and rating levels of risk for trees overall or specific trees.

Results show the majority of urban trees are found near roads and buildings, which increases hazards across frequently used public spaces. Collectively, the study found 75 trees to exhibit high risk, 29 moderate risk and 19 low risks. Most high-risk trees were found to be tall, mature trees that had wide canopies with limited root stability. Structural defects, including poor branch unions, rot, and dead limbs greatly increased tree vulnerability, while environmental influences, including significant rain, turbulent winds, and poor soil conditions, increased the chances of failure. Statistical analysis confirmed that there are strong positive associations between examined variables and risk area scores. The spatial hotspot assessment showed there are important clusters of high-risk trees that require urgent action.

This study highlights that current tree risk management in Colombo is largely reactive, focusing almost exclusively on tree removal or tree pruning only after an incident has occurred. This reactive management of tree cover ultimately undermines sustainable management of green space and results in providing more reactive maintenance services, thereby increasing emergency costs, and reducing longevity of trees, whilst compromising the health and safety of the public. Transitional management using geospatial technologies allows for proper and proactive management of risky trees, while optimizing resource and public safety, which ultimately contributes to sustainable management of urban green spaces.

The recommendations include establishing a centralized geospatial urban tree inventory system, implement a regular tree risk assessment program, urban forestry resources be allocated strategically, urban tree risk management be fully integrated into urban planning and disaster risk reduction frameworks, active participation of the public should be encouraged in urban tree monitoring, strengthen coordination among key stakeholders and build institutional capacity and improving data availability and investing in long-term research.

Keywords: Colombo Municipal Area, Geospatial technology, Sustainable city planning, Tree risk assessment, Urban safety

Ref: 070/LKA/25

An Empirical Analysis of Sustainable volatility spillovers and Network Dynamics in the Indian Equity Market

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Abstract
This paper explores the sustainable volatility spillovers and the systemic risk structure in the Indian equity market. It uses a high-frequency multifaceted approach. We utilize 5-minute intraday data from 2015 to 2024 for the NIFTY 50, India VIX, and five key sectoral indices to calculate daily Realized Volatility for building a very accurate risk measure that is free from models. Next, the authors use the Diebold-Yilmaz (2012) spillover index in a rolling-window VAR framework to measure the time-varying intensity and direction of risk flow in the market system. The study is deepened with several contemporary methods to depict the market scene. They visualize the market's dynamic network to follow the contagion paths, produce a new Spillover Vulnerability Index (SVI) as a which they use to assess the sectors' risk, and, finally, they switch to GARCH-in-Mean models that allow them to empirically test the risk-return tradeoff for each sector. Our results tell us that systemic risk is very volatile and its highest point can be observed during the times of market frictions such as the COVID-19 pandemic. In that period, the market's risk architecture changes from a loosely interconnected to a densely interconnected network, with the NIFTY Bank index as the major net transmitter of shocks all the time. Besides, the global risk sentiment, represented by CBOE VIX, as well as the domestic monetary policy are mentioned to be the important sources of these spillovers. The paper also illustrates a careful out-of-sample forecasting test that compares traditional econometric models with modern machine learning (XGBoost) and deep learning (LSTM) approaches. The authors argue that even the highest models do not keep outperforming a simple Random Walk benchmark. The authors interpret this result as a great support for the Efficient Market Hypothesis, indicating that the spillover system is very fast in the absorption of information, which leads the future path to be quite an open question. This study offers a granular toolkit for investors and policymakers to monitor and manage financial stability in a key emerging market.

Keywords: High-Frequency Data; Indian Equity Market; Machine Learning Forecasting; Systemic Risk; Sustainable Volatility Spillover

Assessing the Efficiency and Effectiveness of E-Governance Services: An Empirical Study.

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Abstract: E-governance has been hailed as a pillar of public sector reform with the aim of improving service delivery efficiency, transparency, and citizen satisfaction, using digital technology. This article empirically examines the efficiency and efficacy of e-governance services based on secondary data collected through published work, government publications, and international databases. The paper examines critical performance measures like pace of service delivery, user satisfaction, transparent and cost-effective service delivery, and does so through comparative and case study evidence in India and other developing countries. Findings indicate that, across the board, while e-government programmes create opportunities for efficiency and effectiveness, results are contingent on institutional, technological, and socio-cultural contexts. The paper ends with a call for policy measures to overcome these challenges and to extract the best value of e-governance.

Affectionate Gesture–Speech Integration in Caregiver Communication: A LUVORA Model Intervention for Language Development, Resilience, and Lifelong Well-Being

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Abstract
Early childhood is a critical window in human development, during which the foundations for language, cognition, socio-emotional resilience, and long-term mental health are established. In this period, the quality and nature of caregiver–child interaction play a decisive role in shaping developmental trajectories. While much research has focused on the verbal dimension of communication, growing evidence suggests that speech alone does not capture the full complexity of human interaction. Instead, language learning occurs within a multimodal communicative environment, where verbal expression is integrated with nonverbal cues such as gaze, gesture, facial expression, and touch. This integration becomes most developmentally potent when it is infused with affection, generating what we term affectionate gesture–speech integration. Affectionate gesture–speech integration refers to the synchronised use of verbal language with emotionally warm, nonverbal signals, such as loving tone, expressive facial cues, rhythmic hand movements, and gentle touch, that are delivered responsively to the child's cues. This combination not only captures the child's attention but also enhances memory consolidation, emotional regulation, and the sense of relational security. The developmental significance of this phenomenon is supported by attachment theory neurocognitive models of multisensory integration), and positive psychology's emphasis on the role of love and compassion in human flourishing. In an era where digital devices increasingly compete with face-to-face communication, sustaining emotionally rich, embodied interaction becomes both a public health and educational priority. While technology can supplement learning, it cannot replicate the nuanced synchrony of touch, gaze, tone, and gesture that forms the bedrock of secure attachment and socio-linguistic development. This urgency motivates the need for structured, culturally adaptable frameworks that help caregivers, educators, and health professionals intentionally embed affectionate gestures and speech into everyday practice.

This paper presents the LUVORA Model, a practical, evidence-informed framework designed to translate the science of affectionate communication into six actionable principles: Love (express unconditional care through tone, touch, and gaze), Uniformity (maintain consistency in emotional availability and communication style), Virtue (model kindness, patience, and empathy), Openness (encourage two-way communication and responsiveness to the child's cues), Resilience (support adaptive coping with affirmations and encouragement), and Acceptance (validate the child's emotions and unique pace of learning). The model synthesises insights from developmental psychology, cognitive neuroscience, speech-language pathology, and cross-cultural communication to offer a scalable, low-cost intervention adaptable to varied socio-economic contexts. Methodologically, this study adopts a narrative analysis of 18 peer-reviewed studies spanning longitudinal, experimental, observational, and ethnographic designs. The analysis identifies recurring mechanisms, such as the role of affectionate tone in sustaining joint attention, the scaffolded role of gesture in word–referent mapping, and the stress-buffering effects of compassionate communication, that together point to the developmental potency of synchronised gesture–speech enriched with emotional warmth. Cross-cultural data demonstrate the universality of this function, with Italian caregivers often using melodic contour shifts, Japanese caregivers elongating vowel sounds for emphasis, and African caregivers employing rhythmic call-and-response, all serving the same purpose of emotional attunement and attentional focus. Findings indicate that affectionate gesture–speech accelerates vocabulary acquisition, strengthens neural pathways associated with language and emotion, reduces physiological stress markers, and promotes prosocial behaviors.

Notably, the quality of communication, its warmth, contingency, and synchrony, proved more predictive of developmental outcomes than sheer quantity of verbal input. This insight has profound implications for policy and practice, challenging models that overemphasise word count benchmarks without equal attention to emotional and multimodal richness. The practical applications of the LUVORA Model are diverse. Parenting programs offer a clear framework for training caregivers, especially those with limited formal education, in synchronising speech and gesture with emotional warmth, supported by tools such as video modelling, live coaching, and feedback loops. In early education, it guides teacher–student interaction in multilingual classrooms, bridging linguistic gaps while fostering

trust and engagement. In clinical speech-language therapy, it enables practitioners to combine therapeutic objectives with emotional attunement, particularly benefiting children with developmental delays, autism spectrum conditions, or trauma histories. From a policy perspective, integrating LUVORA into national early childhood frameworks aligns with the UN Sustainable Development Goals, specifically, SDG 3 (Good Health and Well-Being) and SDG 4 (Quality Education). Public health campaigns, parental leave programs, and teacher accreditation systems can embed LUVORA principles to ensure consistent exposure to high-quality, affectionate communication from birth.

In the Sri Lankan context, the model offers an opportunity for a national reawakening of early childhood health and education policy, drawing on cultural traditions of family closeness, oral storytelling, and community caregiving to position Sri Lanka as a global exemplar. In conclusion, affectionate gesture–speech integration is not merely a preferred style of interaction; it is a developmental intervention with measurable and lasting impacts on language growth, mental health, and resilience. The LUVORA Model operationalises these behaviours into teachable, culturally adaptable practices that can be scaled globally without sacrificing the irreplaceable human warmth that underpins them. By bridging research and real-world application, LUVORA has the potential to transform how societies invest in their youngest citizens, ensuring that every child enters life's journey surrounded by the synchrony of word and love.

Ref: 073/LKA/25

Sustainable E-Marketing and the Path to SDGs: Evidence from Consumer Perceptions and Behaviour

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Abstract
This study investigates the impact of sustainable e-marketing practices on consumer perceptions and purchasing behaviours among Indian online shoppers of eco-friendly products, within the framework of the United Nations Sustainable Development Goal 12 (responsible consumption and production). Using a cross-sectional survey of 160 respondents, the research examines key factors including green awareness, perceived usefulness, and trust in e-commerce platforms, and their influence on purchase intention and actual sustainable buying behaviour. The findings reveal that all three factors significantly and positively affect purchase intention, which in turn strongly predicts sustainable buying behaviour. Additionally, trust in platforms exhibits both direct and indirect effects on sustainable purchases, highlighting its pivotal role in bridging the intention–behaviour gap. The study underscores the importance of transparent, trustworthy, and informative sustainable e-marketing strategies to effectively encourage eco-friendly consumption in the growing Indian digital marketplace. Practical implications for marketers, e-commerce platforms, and policymakers are discussed to promote responsible consumption and advance sustainable development.

Keywords: Sustainable e-marketing; SDGs; green awareness; purchase intention; online shoppers; consumer behaviour.

Ref: 074/LKA/25

Intellectual Property Rights Can Be a Game Changer for MSMEs - A Study

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Abstract: This study has initiated to analyze the perception of students about the connection between IPR and MSMEs in the present situation. Admits the threat of natural calamities, political, international intricacies create hot pan of problems. Country like India has shown the hopes to the world with all constraints, economic progress can be achievable. But to meet the holistic growth innovation, research, protection and rights plays vital role. Future India is hold by young minds and hands and the Indian economy is getting ready to become an Innovation. The economy rebuilding by inclusion and initiation from Government of India through special provisions made for MSMEs sector. The initiatives and schemes by government of India encourage young minds to develop entrepreneurship skills and increase the employment opportunities and utilization of talents, to boast up MSMEs. Indian MSMEs should focus to Intellectual Property Rights (IPR) for economic sustainability and holistic development. The perception and elevation of IP status can eradicate growth of unemployment, scarcity of job market, financial glitches, and underutilization of talents. The study based on primary as well as secondary data. In this paper we made an effort to know the prospects of Intellectual Property Rights (IPR) towards the growth of MSMEs to gear-up the innovation into reality.

Keywords: Intellectual Property Rights (IPR), MSMEs

Seeing Differently: A Qualitative Exploration of Screen-Induced Visual Autism-Like Behaviours in Children in Southern Sri Lanka

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Abstract
This qualitative study explores the emergent of autism-like social and visual behaviours noticed in children as a result of caregivers, teachers, and social workers observing children in conditions of prolonged and unfettered screen exposure. The study focuses on two semi-urban communities in Southern Sri Lanka and uses a sociological perspective that moves beyond biomedical diagnostic categories to explore how behaviours such as prolonged visual fixation, eye contact, social withdrawal, and sensory engagement, are seen, managed and situated in local caregiving and schooling practices, and fit with the Sustainable Development Goals (SDG) 3 (Good Health and Well-being) and SDG 10 (Reduced Inequalities), noting that inclusive community-based approaches are needed. The study involved collecting data in a purposive sample of caregivers (n=6), teachers (n=3), special educators (n=3), and a social worker (n=2), through purposeful sampling using participatory observations and photo elicitation, with four children aged 5-8 years, semi-structured interviews were conducted to explore questions relating to how the children were observed to exhibit changes in behaviour, decisions towards caregiving, and how they interpreted behaviours. Data collection was completed in April to May 2025. The thematic analysis revealed prominent patterns: (1) participants noted how behavioural change was commonly related to sustained exposure to digital media; (2) educators were challenged in classrooms when the sensory attention paid to stimuli, like screens, with most learning stimuli compared to screens; and (3) caregivers indicated screen overuse first with COVID-19 lockdowns then with concerns of habitualisation and dependence. The findings suggest the stigma of developmental-related worries about screen use and digital media caused delaying discussion or engagement with helpful support/intervention. Some of the educators demonstrated adaptability (e.g. facilitated sensory breaks, educators replaced digital media with visual story aids, reduced use of screens in classrooms), but overall, these practices did not appear to be common. The research also draws attention to the overarching socio-cultural shifts in child-rearing practices since digital media, like phones and tablets, are mediating care, learning, and leisure for many children, which might unduly shape developmental pathways. The study aligns with developing literature on "virtual autism", as some behaviours that resemble autism-like behaviours coming from excessive exposure to digital media are temporary and could revert back through environmental/societal modifications. In the analysis, behaviours will not be reframed as a static pathology, but conceived through the interrelation of social, technological, and care continuums. The recommendations will include a community-based digital literacy program with caregivers (similar to the suggestions of Harman, 2020), to develop culturally relevant sensory-friendly pedagogies, promote screen-free collective experiences, as well as informal networks of support for caregivers. These acts might enhance sustainable development for children, reduce inequity about accessing authentic information and intervention, and support inclusive social contexts that can meaningfully respond to digitally mediated childhoods.

Keywords: Autism Spectrum; Children; Neurodiversity; Screen Time; Sensory Processing

Adoption Of Sustainable Digital Technologies in the Real Estate Sector: A Critical Review

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Abstract
Sustainable digital technologies in real estate can greatly help in bringing down the carbon footprint and simultaneously improve transparency, efficiency, and profitability. This paper presents a systematic literature review of peer-reviewed journal articles and conference proceedings focused on the digitisation of the real estate sector and the role of emerging technologies in enabling sustainable practices. The 25 most relevant research articles from the extant literature were reviewed; and the technology adoption related papers were classified into four categories based on year of publication, country, methodology, and technology. Also, the driving forces that lead to the adoption of digital technologies in Industry 4.0 era and the challenges to the same were identified. Further, the applications of the digital tools in the case sector were discussed. The paper also provides insights into how the real estate sector can go about implementing digital solutions to fall in line with the principles of Industry 4.0.

Ref: 077/LKA/25

Geospatial assessment to evaluate the factors affecting land use changes on the sustainability of agriculture in peri-urban areas: Special reference to Paddy lands in Gampaha district in Sri Lanka

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Abstract
Food security is a global concern in the 21st century under the increasing climate change scenarios. Sri Lanka, as an agriculturally predominant nation, experiences increasing population and urbanization, leading to land use changes apart from the climate change impacts. Maintaining agricultural sustainability under dynamic environmental and market changes is a great challenge in the country. Moreover, paddy cultivation is critically important for food security in Sri Lanka, as rice is the staple food and a primary source of calories and protein for the population. It also provides livelihoods for a large portion of the rural population. Concerning the literature, very limited researches were conducted in agricultural land cover in peri-urban settings where favourable environmental conditions exist. Accordingly, this study aims to investigate land cover changes and the factors influencing the agricultural land use changes in the Dompe Divisional Secretariat Division in Gampaha district, Sri Lanka, one of the peri-urban areas in Sri Lanka located close to Colombo, Gampaha and Katunayake cities. The study employed an integrated approach. Land use changes were assessed using geospatial technologies such as GIS & Remote Sensing to identify and quantify the land use changes. Images acquired in 1956, 2000, 2014, and 2022 were used for the geospatial assessment. Change detection was carried out using ArcPro software. A semi-structured questionnaire survey was conducted using a purposive sampling technique, utilizing 30 respondents to identify the factors for land cover changes. Identified factors were ranked according to a priority index that was developed based on the responses from the semi-structured survey. The feedbacks were obtained from the farmers, landowners, and paddy coordinating government officers. The identified factors were addressed through suggesting sustainable solutions with a bottom-up approach while coordinating the top-down approach to maintain the sustainable livelihood of the farmer community.

According to the results, paddy, coconut, rubber, and home gardens were identified as four major agricultural land covers. Paddy cultivation indicated a slight decreasing trend from 1956 to 2000; however, it was indicated that further catalysation of the decreasing trend from 2000 to 2022 caused risks to paddy production. Between 1956 and 2000, there was a -0.42 decrease. However, between 2000 and 2014, the paddy lands declined at a comparatively high rate of -4.84. Further change was increased by -5.64, alarming the future possible decline of the paddy production. Reasons were identified and ranked for the declining pattern of agricultural land use. Results revealed that, high total cost (labour and input costs), physical barriers in the field, changes of the weather pattern, labour shortage, price fluctuations, high demand for land from non-agricultural sectors, improvement of education status of the younger generation (age between 25 to 35), legal issues related to paddy lands and animal threats were the key factors for declining paddy agriculture land extents and abandoning the paddy agriculture lands. Solutions were classified as autonomous and nonautonomous solutions. Accordingly sustainable solutions were identified from the farmers and as well as from the literature, such as maintaining a proper land use plan, promotion of mechanization, implement shared machinery banks, rehabilitation of irrigation schemes, popularizing climate resilient paddy varieties and adaptation strategies, stabilizing the market prices through minimum guaranteed price schemes, enhance youth engagement in agri-entrepreneurships and implementing community based human wildlife conflict mitigation measures. These strategies should be coordinated through both bottom-up and top-down approaches, and that would safeguard the peri-urban paddy cultivation, farmers' livelihood, long-term food security and eventually agricultural sustainability.

Keywords: Agriculture sustainability, Geospatial assessment, Land use changes, Paddy lands, Peri-urban agriculture

Ref: 078/LKA/25

Servitisation Innovation as a Catalyst to Sustainability and Circular Transitions:
A Review and Future Research

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Abstract
Servitization is a business transformation that allows organizations to transition from being product providers to offering integrated service solutions. Recent developments shows that it is necessary to incorporate the concepts like circular economy and servitisation, which evolved from the idea of integrating product service systems that proposes sustainable solutions to companies, conforming to the ESG (environmental, social and governance) and CSR (corporate social responsibility) directions. This transition is facilitated by digitalization, AI, and Industry 5.0 technologies, which are used to manage real-time customer data, predict downtimes, and prevent disruptions to ensure seamless service delivery. Also, servitization supports sustainability by encouraging resource efficiency, reducing waste, and extending product lifecycles through predictive maintenance and circular economy principles. This also involves adopting innovative business models, organizational structures, and workforce capabilities to align with the service-based model. Successful servitization requires co-creating value propositions with customers through efficient service integration. In this evolving landscape, it is crucial to examine the role of AI and advanced technologies in shaping the future of sustainable servitization, ensuring both business growth and environmental responsibility. Therefore, the primary objective of this research paper is to investigate the concept of servitization and its significance in the context of net zero emissions and green transitions, and to also study its impact on sustainable business practices and circularity. A systematic literature review approach using VOS viewer and Biblioshiny was used in this study. Building on these, further research can highlight the potential of servitization to contribute to more holistic and sustainable business practices.

Sustainability transitions are increasingly thought to impact 'Prosumption' (production and consumption) of goods and services (Q. Zhou et.al, 2024) and servitisation can be considered as a type of such transition at the logistic level. Servitization evolved from the idea of integrating product service systems that offer sustainable solutions, adhering to the ESG (environmental, social and governance) and CSR (corporate social responsibility) viewpoints. The concept gained popularity in manufacturing and services as sustainable product-service systems focused towards dematerialization and refers to the process of manufacturing firms reallocating their business models from selling products to providing services that include the products. Alternatively, it involves a transformation of the traditional manufacturing-based business model into a service-oriented one. A linear approach to manufacturing is extremely resource intensive and unsustainable and poses a threat to humanity's sustenance. Further, recent research by Kohtamaki et al.(2024), focuses on the significant role of servitisation in capturing financial value and thereby remains motivated in sustainability related issues. Heiskanen and Jalas (2003), initiated linking the concept of servitisation and sustainability and argued that in comparison to manufacturing, service businesses have better ecological performance.

The relevance of servitization in accelerating the journey towards achievement of SDGs (Sustainable Development Goals) and global climate change targets is significant. The shift towards servitization can help address some of the key challenges posed by climate change and help achieve the SDGs. Manufacturing companies can reduce waste and emissions and contribute to more sustainable business practices by providing services that enable customers to optimize the use of products. Additionally, servitization can lead to increased resource efficiency, lesser environmental impacts, and greater circularity in business models.
Previous studies reveal that companies that embrace servitization can contribute to a more sustainable future and stay competitive in an increasingly globalized economy. The findings obtained from this study will be of immense significance to researchers, policymakers and scholars who are dedicated to promoting sustainable economic development.

Despite previous research, the following research questions remain unresolved which are the main focus of the study:
RQ1: What are the evolving trends and key discussions in the literature related to servitization, innovation, and technologies (SIT)?

RQ2: Which research publications related to SIT have highest number of citations?
RQ3: Who are the important contributors to SIT research in terms of authors, countries, institutions, and source titles?
RQ4: What are the most significant phrases or concepts found in SIT -related research articles?
RQ5: How is the current knowledge structure of SIT characterized, particularly regarding collaboration, networks, and shared events?
RQ6: What are the dominant themes in the field of SIT research?
RQ7: What role have servitisation played in promoting circular economy and sustainable business practices?

A bibiliometric analysis was conducted to get answers to above mentioned research questions. Bibliometric analysis uses software to create clusters and themes of related subject areas. Bibliometric tools enable the identification of prominent authors, important publications, and citation patterns through scientific mapping and network analysis. Bibliometric analysis allowed researchers to understand research trends and patterns surrounding the SIT by analyzing cross-national collaborations. These insights will certainly help future researchers in advancing current knowledge in the area of SIT. Also, the study's findings will help shape future research agendas by addressing the most contentious topics in SIT literature.

Keywords: Circular economy, digital AI, environmental social governance, servitisation, sustainable business practices

Strengthening Documentation and Field Implementation of Dam Safety Guidelines in Sri Lanka

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Abstract: The extensive dam network in Sri Lanka plays a pivotal role in water resource management in the country. Despite substantial socio-economic benefits offered by dams, the failures around the world have caused disastrous consequences, stressing the importance of dam safety management as a global concern. Having identified the significance, the Irrigation Department of Sri Lanka as the primary custodian of dams afety management in the country, has drafted local dam safety guidelines. Acknowledging the efforts to enhance safety practices in the country, the present study was carried out to assess the status of drafted local dam safety guidelines against the international standards, focusing on the level of documentation and the field implementation. The study utilized an expert questionnaire survey that targeted two audiences: 1) experts involved in dam safety guidelines and 2) on site-field engineers, to assess six technical aspects related to dam safety namely, geotechnical, structural, hydro technical, seismic considerations, risk assessment and management, and public involvement and emergency management. The expert questionnaire survey was developed referring to the "Maturity matrix method" for institutional benchmarking in dam safety. The results of the survey revealed that documentation of the majority of aspects performs well compared with the international guidelines, whereas seismic considerations demonstrate a notable deficiency. Notably, the overall maturity levels obtained for the aspects during field implementation indicated clear room for further improvement, reflecting the need not only to maintain robust documentation of dam safety guidelines, but also to effectively translate the same into field implementation. Additionally, "Key informant interviews" were conducted to obtain insights from the field engineers which revealed crucial concerns and challenges to the field implementation of local dam safety guidelines such as, gaps in accessibility at the bottom level, ambiguity of dam ownership, concentrated responsibility and oversight, lack of records of the historical performance and dam surveillance data etc. Furthermore, the responses from the field engineers emphasized that dam safety regulation through a designated, legally empowered body, lifecycle-based dam safety guidelines, multidisciplinary organizational collaboration, sustained capacity building, and the involvement of downstream community as pivotal in enhancing the field implementation of dam safety guidelines. Overall, a periodic benchmarking approach as utilized in the study is recognized as a sustainable tool for the dam owners and governing authorities to self-assess the performance and effectiveness of their dam safety program, which ultimately contributes to strengthening documentation and field implementation of the local dam safety guidelines in Sri Lanka.

Keywords: Dam safety guidelines; Documentation; Expert survey; Implementation; Sri Lanka

Ref: 080/LKA/25

Evaluating the Role of ESG Scores in Shaping Financial Performance of Listed Companies in India

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Abstract

The aim of this study is to decide, whether a company's return on assets (ROA), or profitability, is significantly correlated with its ESG (environmental, social, and governance) ratings. It seeks to ascertain the nature of this correlation—whether positive, negative, or neutral. As part of the research methodology, companies included on the BSE 500 index were examined, 2021 ESG ratings were analysed. The final dataset, which came from the CRISIL database, had 34 companies in the year 2021. The association between ROA (the dependent variable) and ESG ratings (the independent variable) was examined using regression analysis. At a 5% significance level, the data showed a negative correlation between business performance as measured by ROA and ESG ratings. There could be a number of reasons for the inverse relationship between company performance (ROA) and ESG scores. Businesses that support ESG initiatives frequently have to more attention to things like employee welfare and environmental compliance, which is temporarily lower their profitability. Furthermore, term investments will take time to pay off may be made by ESG-aware businesses, which could influence short-term ROA. Strict ESG guidelines could also discourage specific investors or clients, which would reduce revenue. On the other hand, robust ESG initiative have the potential to increase performance and reduce risk over time by enhancing sustainability and resilience.

Keywords: ESG, PAT, Listed Companies.

Waste Not, Want Not: Promoting Responsible Consumption through Safe and Sustainable Disposal of Household Medicines

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Abstract

According to the WHO, "pharmaceutical waste is one type of health care waste that is generated at various sources including pharmaceutical production and research sites, health care facilities, veterinary clinics, animal farms, pharmacies, and households." It has been observed that the COVID-19 pandemic has increased self-medication practices, leading to greater availability of household medicines. Although there are several regulations to manage pharmaceutical waste, regulations on the disposal of household medicines are scarce. This study finds that it can significantly affect the ecosystem, public health, and economic stability. This narrative review was conducted to identify worldwide home medication disposal practices and suggest necessary actions for the safe disposal of medicines. A total of 41 full-text research articles published since 2022 were selected for the study. The author observed the presence of unused and expired medicines in most households. Improving health conditions, changes in medication treatment, overprescribing, and side effects were the main reasons for such availability. The most common types of medicines identified were NSAIDS, analgesics, antibiotics, and antipyretics. Most participants stored unused medicines until they expired or gave them to friends or relatives, while some discarded them as domestic waste or flushed them down the sink or toilet. The most frequent disposal method for expired medicines was disposal as household waste, followed by flushing through the toilet or sink, and burning. Returning unused or expired medicines was not a common practice in many countries, though a significant number of households reported doing so. Multiple studies highlight that participants demonstrated good knowledge about accidental consumption related to storing unused medicines, but lacked awareness of environmental impacts. Nearly all studies showed a positive attitude toward implementing proper disposal procedures, while emphasizing that improper disposal practices are significantly linked to factors such as education, gender, age, occupation, and lack of awareness. This review emphasizes the need to raise public awareness about the adverse effects of improper disposal on human health and the environment, and advocates for country-specific regulations for drug take-back programs aligned with Sustainable Development Goal 12 (Responsible Consumption and Production).

Keywords: Disposal Procedure, Household, Pharmaceutical Waste, Practice, Sustainable Development

The Effect of Risk on Capital Structure, Profitability, and Firm Value with Sustainability Report as a Moderating Variable

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Abstract
This study investigates the moderating effect of sustainability reports on the relationships between risk and firm value, as well as profitability and firm value, within Indonesia's mining sector from 2013 to 2020. The mining industry faces unique challenges including environmental pressures, climate change impacts, geopolitical tensions, and technological disruptions, making it an ideal context for examining risk-value relationships. Despite growing emphasis on sustainable development and ESG reporting, the role of sustainability disclosure in moderating financial relationships remains understudied, particularly in emerging markets. The research employs a comprehensive theoretical framework integrating Pecking Order Theory, Modigliani-Miller Theory, Signaling Theory, and Energy Economic Theory to examine five key variables: risk, capital structure, profitability, firm value, and sustainability reporting. Using purposive sampling, the study analyzes 160 observations from 20 publicly listed mining companies on the Indonesia Stock Exchange. The methodology utilizes Structural Equation Modeling with Partial Least Squares (SEM-PLS) and Multi-Group Analysis (MGA) to test both direct and moderating effects. The findings reveal significant direct relationships among variables. Risk demonstrates a positive effect on firm value (coefficient: 0.146, p-value: 0.029), supporting the risk-return paradigm. Conversely, risk negatively affects both profitability (coefficient: -0.191, p-value: 0.007) and capital structure (coefficient: -0.158, p-value: 0.020). Capital structure shows a negative relationship with profitability (coefficient: -0.161, p-value: 0.018), while profitability positively influences firm value (coefficient: 0.250, p-value: <0.001). The moderation analysis yields mixed results. Surprisingly, sustainability reports do not moderate the risk-firm value relationship (p-value: 0.189), suggesting that investors in Indonesia's emerging market may not yet fully incorporate sustainability information when evaluating risk-adjusted returns. This finding may reflect the novelty of sustainability reporting, voluntary disclosure nature, and short-term investment horizons. However, sustainability reports significantly moderate the profitability-firm value relationship (p-value: <0.001), strengthening this positive association. This supports signaling theory, indicating that sustainability disclosure amplifies the value-enhancing effect of profitability by demonstrating corporate commitment to long-term viability. The study contributes to literature by providing empirical evidence from an emerging market where sustainability practices are evolving. It extends research by examining sustainability reports as moderating variables rather than direct determinants. The findings have important implications for corporate managers, investors, and policymakers. Mining companies should recognize that while sustainability reporting may not immediately alter risk perceptions, it enhances profitability's value impact. Policymakers might consider transitioning from voluntary to mandatory sustainability reporting to improve market efficiency. Future research should examine cross-industry comparisons, sustainability report quality metrics, and longer-term effects of sustainability disclosure on value creation.

Keywords: Capital Structure, ESG, Firm Value, Risk, Sustainability Report

Investigation of Monitoring and Post-Auditing in Environmental Impact Assessment (EIA) in Sri Lanka

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Abstract: An effective monitoring and post-auditing process is crucial for sustainability after an Environmental Impact Assessment (EIA) is approved, as it helps determine the EIA's effectiveness. The concept of post-implementation, including monitoring and post-auditing, is widely recognized and valued; however is not consistently applied in practice. Though there are many international investigations on the EIA post-implementation, there are no such investigations in Sri Lanka, except a few investigations related to the EIA process. In order to address this research gap, this study aimed to enhance the current procedure of EIA monitoring and post-auditing by developing a conceptual framework incorporating emerging international best practices. The objectives were to investigate the current procedures and the status of the EIA post-implementation process in Sri Lanka and identify the drawbacks of the current system to develop a conceptual framework. It revealed that Sri Lanka is at the preliminary stage in monitoring and post-auditing in EIA, with the key challenges due to a lack of capital, dedicated staff, and a standard framework. The conceptual framework developed for EIA monitoring and post-auditing in Sri Lanka incorporates international best practices. The primary stakeholders in this framework are EIA regulators, the project proponent, and the community participants. The cyber e-auditing systems are a special feature that shows how the framework has adapted to current technological advancements. With these other newly added features, the developed conceptual framework will be able to provide guidance to enhance the current EIA post-implementation practices in Sri Lanka.

Keywords: Environmental Impact Assessment ; monitoring ; post-auditing ; Sri Lanka

Ref: 084/LKA/25

India's E-Mobility Transformation: A Synthesis of Consumer Perceptions and Policy Realities

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Abstract

This report synthesizes primary consumer survey data with extensive secondary research to provide a comprehensive analysis of the Indian electric two-wheeler (E-2W) market. It examines the key drivers and formidable barriers influencing consumer adoption, set against the backdrop of India's ambitious clean mobility targets. The findings reveal that while government incentives and rising environmental consciousness are strong market propellers, the high initial purchase price, pervasive range anxiety, and inadequate charging infrastructure remain significant deterrents. The primary data highlights a critical divergence between consumer perceptions and the macro-level policy narrative. The analysis also identifies a recent shift in the competitive landscape, with legacy automakers leveraging their established networks to challenge pure-play EV firms. The report concludes with strategic recommendations for policymakers and industry stakeholders to bridge the gap between consumer intent and market reality, accelerating India's transition to sustainable two-wheeled mobility.

Keywords: Charging Infrastructure, Consumer Perception, Electric Two-Wheeler, EV Adoption, FAME India Scheme

Economic Sustainability in Agricultural Commodity Markets:
A Study of Trends, Patterns, and Market Resilience

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Abstract
This paper examines the economic sustainability of some critical agricultural commodities in India (Guar Seeds, Guar Gum, Castor Seeds) during the period between 2015 and 2025. The study analyzes the pattern of prices, structural stability, volatility behavior, and market interactions using daily price data with a view to evaluating market resilience and efficiency. First, stationarity of the series of returns is established through the Augmented Dickey-Fuller (ADF) test, which controls the appropriateness of time series models. The Bai-Perron multiple break test shows structural breaks, and the CUSUM test ensures that segments of stability exist in the data. In the tests, these periods are identified as showing a dramatic change in market behavior and are included in the modeling that follows.

Their studies are done in the form of trends and autocorrelation of the movements of prices of all commodities. The GARCH (1, 1) model has been employed in the study to capture both volatility clustering and persistence. It has been demonstrated that the effects of shocks on market volatility are likely to recur, indicating that markets are somewhat resilient against these shocks.

Moreover, Granger causality between futures and spot market returns is performed for each commodity, and it can be shown that there is a bidirectional causation in the majority of the commodities. This shows that the two markets are efficient in the discovery of price and the existence of a good flow of information between them.
In general, the results great significance on the necessity to take structural breaks and the persistence of volatility in the analysis of commodity markets. The findings are beneficial to policymakers, traders, and farmers in informing them on how they can enhance risk management practices and assist in the sustainable growth of the market. Such detailed analysis leads to a better understanding of the dynamic behavior of agricultural commodity markets in India over ten years.

Keywords: Economic Sustainability, Agricultural Commodity Markets, Market Trends, Price Patterns, Market Resilience

Diagnosing the systemic GAPs in Customer Experience Management: A three-dimensional assesment model from the Georgian insurance sector

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Abstract
As insurance markets mature and product offerings become increasingly commoditized, Customer Experience (CX) has emerged as a key strategic differentiator. Yet, in many organizations - particularly within developing markets - CX remains managed through fragmented initiatives rather than structured, system-level approaches. This study develops and applies a three-dimensional CX diagnostic model to evaluate alignment between employee perceptions, the maturity of internal CX systems and actual customer experiences in Georgia's insurance sector. The model was piloted within a leading insurance company and validated through broader industry research involving multiple insurers, employees, and customers.
The three dimensions of the model are:
1. **Customer Centricity Perception Index (CCPI)** - gauging employee perceptions of the organization's customer orientation.
2. **Customer Centricity Diagnostic Index (CCDI)** - assessing the maturity and coherence of CX systems across ten organizational pillars.
3. **Customer Perspective Index** - capturing customers' direct evaluations of these same pillars to enable internal-external comparison.

Methodologically, the research integrates **mixed methods**. Qualitative data were gathered through in-depth interviews with 26 department heads and three focus groups involving over 30 employees, uncovering cultural enablers and barriers to CX. Quantitative surveys were then administered to 187 employees of the pilot company and later to 245 employees from two additional insurers. Parallel customer surveys (n = 100) provided the external perspective. The ten CX pillars assessed included Service Mission, Service Leadership, CX Onboarding, Service Empowerment, Customer Understanding, CX in Motivation Systems, Competitive Advantage, Customer Pain Point Management and Internal CX.

Findings revealed a significant perception-to-reality gap. In the pilot company, CCPI scored 71%, while CCDI reached only 45%, producing a -26 percentage point gap. Sector-wide results were similar, with CCPI at 64% and CCDI at 47%. The lowest-performing pillars - CX in Motivation Systems, Service Empowerment, CX Onboarding and Customer Pain Point Management - indicate that while employees believe their organizations value customers, operational systems do not sufficiently support empowered, customer-focused service delivery.

Customer perspectives were markedly more critical. Only 5% of customers perceived their insurer as genuinely customer-centric, compared to 67% of employees. Across most pillars, customers rated performance significantly lower, with the largest gaps in Competitive Advantage (-24%), CX in Motivation System (-22%) and Customer Understanding (-11%). This misalignment signals that internal optimism is not translating into externally visible, trust-building experiences.

The research confirms the diagnostic model's robustness in identifying CX maturity gaps and provides actionable insights for industry-wide improvement. Key recommendations include: embedding CX into performance management and incentives; strengthening onboarding with a focus on service culture; empowering employees with decision-making authority; and treating customer feedback as a strategic driver, not merely a problem-resolution tool.

The study also emphasizes the influence of Generation Z's emerging consumer expectations, characterized by demands for speed, transparency, personalization, and ethical engagement. For insurers, meeting these demands requires not only process improvement but also cultural and systemic transformation.

This work contributes both theoretically and practically by offering a validated, scalable diagnostic framework for CX maturity assessment that can be applied beyond the insurance sector to other service industries. Future research directions include cross-sector applications, longitudinal studies to measure progress over time, and exploration of digital and AI tools in closing CX perception gaps.

Keywords: Customer Experience, Diagnostic Model, Employee Perception, Georgia, Insurance

Ref: 087/LKA/25

Sustainable Project Management for Remote Construction: A Case Study of Dual-Scope Delivery in Puttalam, Sri Lanka

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Abstract

This case study presents the planning and execution of two simultaneous construction projects in Puttalam, Sri Lanka, undertaken by a single contractor under the client's stringent occupational health and safety (OH&S) requirements. The client, a leading manufacturing organization, maintained a zero-compromise approach to workplace safety, enforcing rigorous protocols throughout the construction timeline. The projects comprised: (a) construction of a reinforced concrete retaining wall associated with raw material storage infrastructure for the manufacturing process, and (b) rehabilitation of officers' residential quarters, including re-tiling, painting, and bathroom repairs. While both projects were executed in parallel, they differed substantially in scope, technical complexity, and the range of labour skills required.

Puttalam's location approximately 150 km from Colombo posed significant logistical challenges, particularly in mobilizing skilled personnel, transporting equipment, and maintaining supply chain efficiency. The workforce strategy involved sourcing skilled tradespersons from outstation locations who typically worked in extended cycles before returning home, supplemented by unskilled local labour recruited from the host village for supporting activities. To ensure close supervision, two dedicated site engineers were deployed one per project supported by formwork carpenters, concrete vibrator operators, tilers, painters, masons, and a dedicated safety officer.

Daily toolbox meetings were conducted at each site, with safety responsibilities assigned to every team member, thereby fostering accountability and a shared culture of safety. Senior company management reinforced this culture through regular "walk-and-talk" sessions, engaging directly with workers on safety matters.
Project delivery adopted the Just-in-Time (JIT) project management principle, ensuring that tools, equipment, and materials arrived precisely when needed. This approach reduced on-site congestion, minimized idle time, optimized resource use, and maintained workflow continuity despite the remote location and dual-scope nature of the work.
Both projects were completed within the agreed timelines, meeting quality, safety, and compliance benchmarks. Key lessons learned include: (a) The value of integrating JIT principles with traditional construction management to address logistical constraints in provincial projects. (b) The importance of blending skilled and local unskilled labour to balance quality requirements with community engagement. (c) The effectiveness of daily safety engagement and visible management presence in maintaining compliance. (d) The adaptability required to manage multiple, technically distinct projects under a single governance framework.

This case study offers practical insights for construction managers, policy makers, and industry stakeholders seeking sustainable, safe, and efficient delivery of multi-scope projects in geographically dispersed locations, particularly in developing country contexts.

Keywords: Sustainable construction management; Just-in-Time (JIT) project delivery; Occupational health and safety (OH&S; Remote construction logistics; Sri Lanka case study

Ref: 088/LKA/25

Beyond Financial Literacy:
Behavioral Finance Mechanisms Driving Micro Enterprise Performance in Emerging Market Tourism

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Abstract
While enhanced Financial Literacy theoretically correlates with improved micro-business outcomes, empirical evidence reveals inconsistent findings across diverse contexts and regional markets. This contradiction exemplifies the knowledge-implementation gap within behavioral finance literature, where theoretical understanding fails to automatically translate into superior operational performance. This study examines the complex relationships between Financial Literacy and business effectiveness among micro-tourism operators through three critical mediating mechanisms: Financial Experience, Credit Access, and Financing Decisions within emerging economy contexts.
Data were collected from 383 micro-tourism business owners across the Greater Malang region, Indonesia, using a two-stage stratified proportional random sampling approach. The study employed a comprehensive quantitative explanatory design with cross-sectional survey methodology. Statistical analysis utilized Partial Least Squares Structural Equation Modeling via SmartPLS 4.0, integrating four fundamental behavioral finance theoretical frameworks: Expected Utility Theory establishing rational choice foundations, Prospect Theory explaining cognitive biases and decision-making limitations, Signaling Theory addressing information asymmetries between micro-businesses and financial institutions, and Pecking Order Theory illuminating financing preference hierarchies within capital-constrained environments.

The findings demonstrate that Financial Literacy does not directly influence Financial Performance ($\beta = 0.019$, p = 0.769), but rather operates through sequential mediation pathways involving Financial Experience, Credit Access, and Financing Decisions. Credit Access emerges as the strongest mediating pathway ($\beta = 0.113$, $p < 0.001$), followed by Financial Experience ($\beta = 0.112$, $p < 0.01$) and Financing Decisions ($\beta = 0.068$, $p < 0.01$). The comprehensive model explains 54.2% of Financial Performance variance with substantial predictive validity, providing robust empirical support for behavioral finance applications in micro-enterprise contexts.

The results suggest that MSME development initiatives require holistic ecosystem strategies that transcend conventional financial education approaches, incorporating enhanced Credit Access mechanisms, structured Financial Experience programs, and comprehensive decision-support systems. This research contributes to behavioral finance scholarship by elucidating the complex transformation processes through which Financial Literacy translates into Financial Performance within emerging market tourism contexts.

Keywords: Credit Access, Financing Decisions; Financial Experience, Financial Literacy, Financial Performance

From crisis to opportunity: A path to quality and affordable healthcare in the South African Healthcare System

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Abstract
The South African healthcare system has been plagued by challenges that impede access to affordable and quality healthcare. To count the few, the racial fragmentation imposed by apartheid policies, the two-tier healthcare system which exacerbates inequality between the affluent and the underprivileged, and most recently, COVID-19, which exposed the vulnerability of citizens under the current system.

This paper aims to provide a comprehensive critique of the South African National Health Insurance Act of 2023 and assess its feasibility in delivering affordable and quality healthcare. The issue of access to quality healthcare has been highly contentious and has sparked debates across all sectors of society. The Medical Aid schemes want further clarity on the implementation of the National Health Insurance Act. Whereas the poor aspire to access such quality and affordable healthcare. Wherefore, the paper aims to provide clarity on several crucial issues such as the constitutionality of the Act, the pooling of funds, and the convincing roadmap towards the implementation of the NHI scheme. By addressing these aspects, the paper seeks to contribute to a comprehensive understanding of the NHI's impact on society at large.

This paper employs the theories of social exclusion and social justice to show that there is unequal treatment of citizens regarding access to healthcare, and to further advocate for the inclusion of the downtrodden masses into the flourishing healthcare system. It is argued that access to healthcare is a right and not a privilege, regardless of one's financial status. In the current two-tier system, it is an injustice for South Africa to witness such inequality. It is submitted that the National Health Insurance Act presents a marvelous opportunity to improve the quality of life and to free the potential of each person.

The study finds that the introduction of the National Health Insurance Act seeks to achieve the aspirations of the Constitution, and therefore, it should be supported across the spectrum. Moreover, the Act seeks to achieve the United Nations Sustainable Development Goals (SDG), particularly goal 3,8 which envisages Universal Health Coverage. This paper finds that there is disconcerting conduct from the medical aid schemes, which tend to contest the eligibility of the NHI Act.

It is submitted that there is an urgent need for the spirit of cooperation. It becomes the collective responsibility of both the government and the private healthcare sector to collaborate and foster the implementation of the NHI scheme to achieve universal health coverage. Internal resistance and court battles delay the implementation of the NHI Act and continue to inhibit access to quality healthcare.

Ref: 090/LKA/25

Protecting children from cyberbullying: A South African perspective

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Abstract

The use of technology has rapidly increased and has become integral part of everyday life in all corners of the world. In the same vein, digital literacy has become a centre of much importance for children, young people and adults. The benefits that the internet provides specifically for children cannot be ignored. Children enjoy game applications, cross cultural interactions, educational and social support. However, these benefits cannot hide the fact that there are several risks associated with technology. The internet has resulted in a new criminal phenomenon such as cyberbullying, defamation, hate speech, racist connotations and many other illegal activities. Cyberbullying is prevalent on social media platforms such as Facebook, Twitter, Instagram, TikTok and other gamification platforms.

This paper focuses on cyberbullying which is an online abuse that also affect children. It is submitted that in South Africa bullying of young children has drastically increased. They receive upsetting messages and posting of unflattering messages. In as much as these activities can be seen as aspects of childhood, it is important to note their negative effect, especially in violating fundamental constitutional rights. Cyberbullying can be described as the use of technologies (internet, mobile phones or online games) by an individual or a group of people to deliberately or repeatedly spite someone else. This cyberbullying phenomenon has a negative impact on children as it leads to depression, low self-esteem, social anxiety and suicidal tendencies which is a form of abuse. Looking at these devastating consequences there is a need for legal think tank to pile up an effective solution dealing with cyberbullying in South Africa.

This paper argues that preventing children from cyberbullying does not only lie on the implementation of specific legislation but also an application of anti-cyberbullying guidelines for the conditions in which children find themselves.

The research will be desktop based that will have considered primary and secondary sources of law. In embarking on this study, the research intends to contribute to curbing child online abuse. The findings will be beneficial to academics, policy makers, legislatures and professionals in the realm of cyberbullying.

Amongst others, the study recommends the infusion of anti-bullying education into basic education curriculum. The launch of public awareness campaigns aimed at preventing cyberbullying. There is also a need to provide mental health support to the victims to deal with victimisation, pain and suffering. Additionally, there is a need for collaboration policy makers and the generators of social media platforms to work hand in glove to handle, report and block cyber content before dissemination.

Keywords: Anti-bullying, cyberbullying anxiety, children, social media, suicide

A Study on the Impact of Shareholder Activism on ESG Performance in India's Banking Sector

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ABSTRACT
Recent years witnessed shareholder activism being instrumental in shaping corporations' sustainability adoption along with ethics and productivity improvement. The global climate change phenomenon necessitates firms to focus on sustainable business management practices which inturn helps firms to address environmental, social and governance issues. This study examines how shareholder activism influences ESG performance in Indian banks between 2020 and 2024. Using a stakeholder engagement framework, it explores how institutional investor proposals, proxy voting outcomes, and regulatory pressures impact sustainability efforts across governance, environmental, and social dimensions. Data was collected through ESG score databases, SEBI and RBI disclosures, and a qualitative review of annual and sustainability reports from major Indian banks. Analysis using panel data regression and thematic content analysis reveals that higher institutional engagement and favourable voting outcomes are associated with stronger ESG practices, particularly in governance and social responsibility. The findings offer investors, regulators, and banks strategic insights to align shareholder influence with sustainability goals in India's evolving ESG and regulatory landscape.

Keywords: Shareholder Activism, Post Ballot Voting, ESG Performance, Indian Banks, Institutional Investors, Governance

Mediating Role of Organizational Commitment in the Nexus of Perceived Support, Distributive Justice, and Citizenship Behavior

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Abstract

The research evaluates how organizational commitment functions as a mediator to connect perceived support factors with distributive justice mechanisms toward generating organizational citizenship behavior (OCB). The study examines these connections because it seeks to identify how employee assessments of fairness and support practices affect their voluntary work efforts that extend past official duties.

The researchers collected survey responses from employees working in different industries to investigate their topic through quantitative research. SEM analysis evaluated direct relationships and indirect pathways between support perception and distributive justice while using organizational commitment as a mediating variable for predicting OCB

The research results show that worker-perceived support and distributive justice favorably affect organizational commitment which leads to better employee pro-social practices. Organization commitment presents a crucial means that strengthens the relationships between antecedents and OCB through direct mediation.

The study connects perceived support to distributive justice and OCB through organizational commitment as a mediator. The research delivers an exhaustive analysis of employee conduct through its system of understanding how impartiality and assistance promotes voluntary work contributions.

The examination concentrates on particular business sectors and particular areas that create restrictions for wider application.

To enhance OCB organizations must create fair systems and offer support and sustain organizational commitment while implementing justice-oriented policies.

The implementation of fair supportive practices leads organizations to engage their workforce and establish workplace success through harmony and productivity.

Keywords: Distributive Justice, Employee Engagement, Organizational Citizenship Behavior (OCB), Organizational Commitment, Perceived Support, Structural Equation Modeling (SEM)

Ref: 093/LKA/25

Sustainable bridge management strategy through modern smart phones

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Abstract

Bridge infrastructure is aging rapidly across the globe, faces increasing challenges due to fatigue, dynamic loads, and environmental deterioration, which pose risks to the structural safety and long-term sustainability. While traditional Structural Health Monitoring (SHM) systems are more reliable, they often require expensive equipment, skilled technicians, and can cause traffic disruptions during installation. This paper presents an alternative approach to bridge management that is sustainable, non- destructive, and cost-effective which uses modern smartphones as SHM tools. Modern smartphones are now equipped with highly sensitive accelerometers and gyroscopes and can collect vibration and movement data from bridges with surprising accuracy during normal train operations. In this study, commercially available smartphones were directly mounted on bridge elements and data was collected using the "Phyphox" mobile application during live train passages. The acceleration data along three orthogonal directions was processed to extract key dynamic characteristics such as natural frequencies, velocity and mode shapes, which are critical indicators of structural integrity. The findings indicate that smartphone sensors are capable of capturing meaningful structural vibrations suitable for condition assessment, especially for preliminary diagnostics and routine inspections. The methodology was tested on a case study steel railway bridge in the Sri Lanka Railways network. Results confirm the adaptability, practicality, and accuracy of smartphone-based monitoring in real-world conditions. This approach allows for more frequent, scalable, and inclusive monitoring, especially in remote or resource-constrained environments, promoting sustainability through reduced costs, minimized carbon footprint, and enhanced community involvement. By enabling proactive maintenance, this strategy contributes to safer, more resilient infrastructure in line with sustainable development goals.

Keywords: smartphone sensor, steel railway bridge, structural health monitoring, sustainability in infrastructure, vibration analysis

Sustainable Urban Development Challenges: Land Use and Land Cover Change and Its Implications for Land Surface Temperature in Ratnapura, Sri Lanka

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Abstract

Rapid and often unplanned urban growth has emerged as a major challenge for sustainable development, particularly in tropical regions where climate regulation is closely linked to land cover patterns. Changes in land use and land cover (LULC) significantly influence local climate conditions, with urbanization altering surface energy balances and contributing to the urban heat island (UHI) effect. Ratnapura, the capital of Sabaragamuwa Province of Sri Lanka, has undergone rapid urban expansion in recent decades, yet little is known about the extent to which these changes have affected land surface temperature (LST). This study investigates the spatio-temporal dynamics of LULC change in Ratnapura from 2006 to 2024 and evaluates their relationship with LST trends, with an emphasis on implications for sustainable urban planning. Freely available medium-resolution Landsat imagery was used, including Landsat 5 TM (2006) and Landsat 8/9 OLI/TIRS (2013, 2018, 2024). LULC classification was performed using a pixel-based supervised classification approach with the maximum likelihood algorithm, enabling the identification of key categories such as built-up areas, forest cover, agricultural land, and other land uses. LST was retrieved from thermal bands following established radiometric calibration and atmospheric correction procedures.

The Normalized Difference Vegetation Index (NDVI) and Normalized Difference Built-up Index (NDBI) were calculated to quantify vegetation cover and impervious surface distribution, respectively, and to assess their correlation with LST patterns. Over the 18-year period, Ratnapura experienced significant land transformation. Built-up areas increased by 103.3%, largely replacing vegetated and agricultural areas. Forest cover declined by 27.19%, agricultural land by 24.37%, and other land uses by 77.20%. The spatial pattern of built-up expansion was most pronounced in the city center, progressively extending to the north, northwest, east, and south. LST analysis revealed that built-up areas consistently exhibited the highest mean temperatures, increasing from 25.95 °C in 2006 to 27.81 °C in 2024. The overall mean LST for the Ratnapura Municipal Council area rose from 25.31 °C to 27.93 °C, marking a 2.62 °C increase. Spatial mapping demonstrated the intensification and outward spread of heat-concentrated zones, aligning with areas of high impervious surface density. Correlation analysis confirmed a strong negative relationship between NDVI and LST, emphasizing the cooling role of vegetation. Conversely, a strong positive relationship between NDBI and LST reflected the heat-retention capacity of impervious surfaces such as concrete and asphalt.

These findings suggest that anthropogenic activities, particularly the replacement of natural vegetation with built-up infrastructure, are major drivers of LST increases in Ratnapura. From a sustainability perspective, the observed trends highlight the urgent need for climate-sensitive urban planning. Rising temperatures can have profound implications for human health, energy demand, biodiversity, and the overall livability of urban environments. The reduction in forest and agricultural lands not only intensifies heat conditions but also diminishes ecosystem services such as carbon sequestration, stormwater regulation, and air purification. Sustainable urban development strategies should prioritize the integration of green infrastructure, preservation of remaining forested areas, expansion of urban tree canopies, and promotion of peri-urban agriculture to mitigate heat stress and improve urban resilience. Additionally, incorporating heat-mitigating design principles such as reflective roofing, permeable pavements, and strategic green space allocation could help offset the adverse impacts of urban expansion on LST.

This study provides valuable empirical evidence on the linkages between LULC change and LST in a mid-sized tropical city and underscores the importance of geospatial analysis in guiding urban sustainability policies. By documenting nearly two decades of change, it offers a baseline for monitoring future trends and assessing the effectiveness of urban climate adaptation measures. The methodology, combining time-series LULC mapping, LST retrieval, and vegetation–built-up indices, can be replicated in other urban contexts facing similar challenges. Ultimately, the results serve as a call to action for policymakers, urban planners, and environmental managers in Sri Lanka to adopt integrated land-use planning frameworks that balance urban growth with environmental protection. As cities in tropical regions continue to expand, aligning development trajectories with climate resilience objectives will be essential to ensure sustainable, livable urban futures.

Keywords: Land Surface Temperature (LST), Land Use and Land Cover (LULC), Sustainable Urban Development, Urban Heat Island (UHI)

Nanotechnology in Product Innovation and Commercialization

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Abstract
Nanotechnology, defined as the manipulation of matter at dimensions between approximately 1 and 100 nanometers, represents one of the most transformative scientific and technological advancements of the 21st century. At this scale, materials often exhibit unique physical, chemical, mechanical, and optical properties that differ significantly from their bulk counterparts. These nanoscale phenomena have catalyzed innovation across multiple industries, including healthcare, electronics, energy, environmental science, and materials engineering. This paper investigates the pivotal role of nanotechnology in fostering product innovation and commercialization, with a particular focus on how nanoscale engineering is enabling the creation of entirely new products as well as enhancing the performance, efficiency, and functionality of existing ones.

In healthcare, nanotechnology has facilitated revolutionary developments such as targeted drug delivery systems, nanoscale imaging agents, regenerative medicine scaffolds, and early disease detection techniques, thereby improving patient outcomes while reducing side effects. In electronics, it has enabled the production of faster, smaller, and more energy-efficient components, fueling the advancement of next-generation computing, flexible displays, and high-capacity storage devices. Within the energy sector, nanomaterials are being harnessed to enhance the efficiency of solar cells, energy storage systems, and fuel cells, contributing to the global push for sustainable and renewable energy solutions. In materials science, the incorporation of nanomaterials into polymers, coatings, and composites has resulted in stronger, lighter, and more durable products with diverse industrial applications.

Beyond its technical capabilities, the commercialization of nanotechnology-based products presents both significant opportunities and considerable challenges. The innovation pipeline—from research and development to market-ready products—requires strategic navigation of regulatory frameworks, which must ensure product safety without stifling innovation. Intellectual property (IP) protection is another critical consideration, given the high value and competitive advantage conferred by proprietary nanotechnologies. Furthermore, successful market adoption depends on clear communication of benefits to end-users, overcoming skepticism, and addressing concerns regarding the long-term environmental and health impacts of nanomaterials.

The societal implications of nanotechnology are equally important, encompassing issues of ethics, equity, and public trust. As the technology advances, questions arise about equitable access, workforce displacement due to automation, and the need for responsible innovation that anticipates unintended consequences. Policymakers, scientists, and industry leaders must work collaboratively to establish transparent governance, promote public engagement, and develop international standards that facilitate safe and equitable deployment of nanotechnology-enabled products.
By examining the interplay between scientific breakthroughs and commercialization strategies, this paper provides a comprehensive overview of how nanotechnology is reshaping industries and creating unprecedented economic opportunities. It also underscores the importance of integrating regulatory foresight, ethical considerations, and public awareness into the innovation process. The findings contribute to a deeper understanding of the transformative potential of nanotechnology, while offering insights into the pathways for translating nanoscale research into impactful, market-ready solutions.

Keywords: Commercialization, Nanotechnology, Product Innovation, Regulatory Frameworks, Societal Implications

Role of Sustainability Marketing in Shaping Consumer Intentions to Purchase Green Products

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Abstract
This paper examines the key role of sustainability marketing which is to influence the consumer purchase intentions to green products and the mediating role played by consumer trust on this. It evaluates central parameters like environmental concern, perceived green value, and sustainability advertising and the manner in which they generate the consumer behaviour. Testing hypothesized relationships using Structural Equation Modelling (SEM), the study comes up with the reliability that sustainability marketing produces a significant effect on consumer trust and purchasing intentions. The results can give meaningful ideas to the marketers in their need of promoting green products, as well as proposals on what can be done with reference to engaging more people in sustainable practices.

Keywords: Advertising., Consumer Trust., Environmental Concern., Perceived green value.
Sustainability.

Ordination in Buddhist Reclusive Life: A Socioeconomic, Psychoanalytic and Linguistic Reading of Wijenayake's Select Short Stories

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Abstract

Ordination is a significantly accepted tradition in any religion because it confirms the continuation of religious practices in any community, and it contributes to peace, harmony, and moral and spiritual growth in society, hence sustainability. While acknowledging this value, this paper explores the issues of child ordainment in Buddhist reclusive life, as depicted in two Anglophone short stories: "The Retreat" and "Monkeys" by a pioneering Sri Lankan female author Punyakante Wijenaike (1933-2023). Employing a three-fold theoretical framework – Marxist, Psychoanalytic and Linguistic lenses – the study examines three main, yet sparsely-studied facets related to child ordainment: (i) how economic adversity drives people from subaltern contexts to get their children ordained, (ii) how socio-cultural disgrace, especially about children born out of matrimony, plays a crucial role in such choices, with ordainment serving to safeguard social decency, and (iii) how children's linguistic identity undergoes drastic transformations, affecting their social positioning and power. Issues such as fear of abandonment, jealousy and hatred, the yearning for love, language identity and power, repression, and emotional displacement are identified which reveal how children's ordainment, albeit socially and spiritually valued, can also create profound personal complications. Hence, this study invites readers to consider these subtle dimensions often either passed by, or overlooked, in broader religious discourse. This paper opens space for reflection on how eventually child ordinations may negatively result in development and sustainability, either as a reaction to the unfulfilled emotional needs or struggle to reconcile their personal identity with the demands of monastic requirements and regulations.

Keywords: Class divisions; "Retreat"; "The Monkeys" ; Sri Lankan Literature in English; Subaltern

Impact of Gender Equality on Economic Growth: A Commerce Perspective

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Abstract

This research paper investigates the impact of gender equality on economic growth from a commerce perspective, focusing specifically on India during the period from 2020 to 2024. Gender equality is increasingly recognized as a critical factor influencing sustainable economic development, particularly in emerging economies like India, where women's participation in the workforce remains disproportionately low. Drawing upon both primary data collected through structured questionnaires from over 200 commerce professionals and relevant secondary literature, the study examines the role of gender diversity in enhancing business performance and overall economic indicators.

The findings of this research underscore the significant benefits of increased female participation in senior management roles. The data reveal that not only does this boost firm-level performance, but it also contributes substantially to national GDP growth. By analyzing the relationship between gender representation in leadership and various performance metrics, the study highlights the importance of gender-inclusive policies in driving economic progress. The research employs rigorous statistical methods, including chi-square tests and correlation analysis, to validate the proposed models and hypotheses.

Furthermore, the study identifies key challenges and opportunities for implementing gender-inclusive policies within Indian commerce firms. It discusses the barriers that women face in attaining leadership positions, such as societal norms, lack of mentorship, and inadequate support systems. The research also emphasizes the need for policymakers to create an enabling environment that promotes gender equality, thereby unlocking the full potential of the labor force.

This paper contributes to the existing body of literature by providing empirical evidence that supports the economic case for gender equality. It draws on various theoretical frameworks and empirical studies that link gender diversity with enhanced organizational performance, innovation, and overall economic output. For instance, previous research has shown that companies with higher female representation in leadership roles tend to outperform their peers in profitability and productivity metrics.

In addition to the quantitative analysis, the study incorporates qualitative insights from commerce professionals, offering a comprehensive view of the current state of gender diversity in the sector. The integration of primary and secondary data allows for a nuanced understanding of how gender-inclusive practices can be effectively implemented and the potential economic benefits that can arise from such initiatives.

Ultimately, this research provides valuable insights for policymakers, corporate leaders, and scholars alike. It advocates for the adoption of gender-inclusive strategies as not only a moral imperative but also a sound economic strategy. By fostering an equitable work environment, India can enhance its economic growth trajectory and achieve sustainable development goals. The outcomes of this study highlight the urgent need for concerted efforts to address gender disparities in the commerce sector, ensuring that the economic contributions of women are fully recognized and leveraged for national development.

Keywords: Commerce; Economic Growth; Gender Equality; India; Labor Force.

An Open-Source Geospatial Landslide Risk Assessment for Advancing Sustainable Development in Sri Lanka's Rathnapura DSD

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Abstract
Natural hazards are environmental processes or phenomena that pose potential threats to human societies and ecosystems. In Sri Lanka, landslides constitute one of the most significant natural hazards, with approximately 20,000 km² across ten districts identified as landslide-prone. Among these, the Rathnapura District has recorded a notably high frequency of landslide occurrences. Notably, the 2017 landslide event in this district resulted in substantial impacts, affecting 92,757 individuals and causing extensive damage to property. Therefore, effective identification of high-risk zones is essential for disaster mitigation, yet local and national institutions often face challenges due to the lack of cost-effective assessment tools. This study introduces an open-source geospatial methodology, utilizing freely available satellite data, open datasets, and Quantum Geographic Information System (QGIS) software as a sustainable alternative to commercial GIS solutions. Determinant parameters for landslide susceptibility— slope, elevation, topographic wetness, vegetation cover, annual average rainfall, drainage density, and drainage network were derived from literature and integrated through weighted overlay analysis. The analysis revealed that 70.37 km² of the Rathnapura District is classified as highly susceptible to landslides, with the Rathnapura Divisional Secretariat Division (DSD) exhibiting the greatest susceptibility, encompassing 18.41 km² across 46 Grama Niladhari Division (GND) boundaries. Landslide vulnerability was evaluated using physical features (road networks, building footprints from OpenStreetMap) and population census data. High and very high socio-economic vulnerability areas were concentrated within 10 Grama Niladari Divisions (GNDs), while very low and low vulnerability zones covered 76 GNDs out of total 90 GND boundaries. Combined susceptibility and vulnerability analysis revealed 10 GNDs as high-risk areas. This open-source geospatial approach directly contributes to Sustainable Development Goals (SDGs), particularly SDG 11 (Sustainable Cities and Communities), SDG 13 (Climate Action), and SDG 15 (Life on Land), by enabling cost-effective hazard mapping, strengthening local adaptive capacity, and supporting evidence-based land use planning. By promoting equitable access to spatial data and analytical tools, it empowers local authorities, planners, and communities to implement proactive disaster risk reduction strategies, optimize resource allocation, and ensure environmentally responsible development. The methodology promotes economic sustainability through reduced dependency on costly software, social sustainability by prioritizing at-risk populations, and environmental sustainability by guiding development away from ecologically sensitive areas. Findings provide a scientific basis for proactive, non-structural mitigation measures, fostering resilient, safe, and sustainable communities in landslide-prone regions as the initial step of disaster management cycle, which are prevention, preparedness and
response activities in order to achieve an advancing sustainable development in Sri Lanka's Rathnapura DSD.

Keywords: GIS, Open Source, Landslides, Sustainability, Risk

Evaluating microaggression in townships: A case study of the gender-based violence secondary victims in Soweto Township

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Abstract
Historically most communities in sub-Saharan countries conformed to cultures that promote patriarchy. Patriarchal norms and values socialised in close and extended families prolong the disparities between genders. Ideologies not only perpetuates inequality but are protected by believers. Women who strongly uphold patriarchal norms not only idolized women who conform to these values systems but also defend men who demonstrate dominance over their female counterparts, wives, siters and friends. Patriarchal women may be less likely to experience cognitive dissonance because of gender roles and social expectations but this does not make them immune to gender-based violence. They may become secondary victims of gender-based violence. A person is identified as a secondary victim of gender-based violence if she is exposed to or associated with a direct victim of gender-based violence who might be a family member, friend, neighbor. South African townships are residence to black ethnic Bantu speakers who were historically marginalised and excluded from socio-economic opportunities. The exclusion continue to manifest as under representation of women in various economic sectors, which makes many women dependent on males, which might be an intimate partner, spouse, or family member. This economic dependents on their male counterparts leave them vulnerable, exposed to threat of gendered violence. Gendered violence varies and the continuum ranges from verbal assaults to physical violence which are all traumatic events. This study contributes to discourse against violence but equally advocates gender equality. Victims' perceptions of violence has immensely contributed to policy development and various initiatives aimed at combatting gender-based violence. This study focused on microaggression to examined how it is perceived by secondary victims of gender-based violence residing in a South African township. Microaggression can manifest as microassaults, microinsults and microinvalidations directed at a person or social group to cause hurt. The objective often the study was to establish women's safety perceptions in the township. The methodology of the study was a qualitative case study. Snowballing was used to identify 40 female participants. An interview schedule was administered to participants during a thirty-minute face-to-face meeting that lasted. Participation criteria included age between 18 and 65 years, gender, race, residency in a township in the Gauteng province, and prior direct expose or close association with a victim of gender -based violence. Minors, unwilling participants and women who directly experienced gender-based violence with the last six months were excluded from the study. Formal consent was received from each participant, and no incentives were offered to participants. Anonymity was assured and withdrawal was acknowledged. Three dominant these were identified through thematic content analysis, and these are 'fear', gender and township. Most participants perceived that the type of microaggression they experienced was gendered violence, it was often experienced in public across the township context, and it contributed to their fear. The study provides insight on the role of microaggression in the fearfulness of female residence in townships. The findings cannot be generalized due to sample size. It was recommended that police visibility should include frequent foot patrols to address the fearfulness of secondary victims in the township.

Keywords: Equality, fear, gender, microaggression, prejudice,

Investigation of energy and water demand of different types of buildings in different climatic zones in Sri Lanka

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Abstract: Buildings consume substantial amounts of energy and water, with usage patterns influenced by building type, occupancy, design, and climatic conditions. There are three major climatic zones in Sri Lanka: they are wet, intermediate, and dry. There is a lack of region specific, comparative data on resource consumption across different building categories. This gap is interrupting the development of building designs and energy and water management strategies. The aim of this research is to investigate and compare the energy and water demands of residential, commercial, institutional, and hospitality buildings across the climatic zones in country. The study seeks to establish region specific benchmarks and recommend sustainable design strategies suited to each context. Representative buildings will be selected from each zone. Energy and water consumption data will be collected through utility records spanning at least one year to capture seasonal variability. Additional data on building characteristics and usage will be gathered through surveys and site visits. Data analysis includes statistical and comparative techniques to identify key demand drivers and patterns. Tools such as Microsoft Excel will be used for data processing and visualization. Baseline performance benchmarks will be established for each building type and zone. The research is feasible due to access to reliable data from national utility providers and meteorological sources. By focusing on local climatic and operational contexts, the study will provide valuable insights to support climate responsive policy development, improve building regulations, and enhance sustainable resource use in Sri Lanka's built environment. By focusing on local climatic and operational contexts, the study will provide valuable insights to support climate-responsive policy development, improve building regulations, and enhance sustainable resource use in built environment in Sri Lanka.

Keywords: Building types, climate zones, energy efficiency, water demand

Ref: 102/LKA/25

Investigating the feasibility of using Artificial Intelligence tools in the design of roof trusses

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Abstract: Artificial Intelligence (AI) is becoming an important tool in many fields, including structural engineering. This study aims to investigate the feasibility of using AI tools in the design and optimization of roof trusses. Roof trusses are critical components in building construction and using AI may help make their design more efficient and cost effective compared to traditional methods. The main aim of this study is to explore how AI techniques such as Artificial Neural Networks (ANN), Genetic Algorithms (GA) and other Machine Learning (ML) tools are being used in roof truss design and optimization. Special attention is given to how software like SAP2000 and PROKON can work together with AI algorithms to help improve the design process. To carry out this study, a Systematic Literature Review (SLR) method is used. This involves collecting and reviewing a wide range of past research papers and academic studies from reliable databases like Google Scholar, ResearchGate, ScienceDirect, IEEE Xplore and others. The process follows the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure a clear and organized review of the available knowledge. Each paper is carefully checked to find out which AI tools are used, how they are used and what benefits or problems were reported. The review focuses on how AI tools are applied in truss design, what types of software are used (such as SAP2000 and PROKON) and how these tools compare with traditional methods in terms of cost, time and efficiency. By organizing and summarizing existing research, this study hopes to provide useful information for students, engineers and researchers interested in the future of AI in structural design.

Keywords: Artificial Intelligence, Artificial Neural Networks, roof trusses, Systematic Literature Review

Experimental Investigation on Improving Fire Endurance of Aerated Concrete Blocks

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Abstract

Autoclaved Aerated Concrete (AAC) is a lightweight building material widely utilized in modern construction due to its reduced dead load, ease of handling, aesthetic versatility, and accelerated construction capabilities. Produced from cement, fly ash, lime, and aluminum powder, AAC achieves low density (~750 kg/m³) through air-entrainment via hydrogen gas evolution, followed by autoclaving under controlled steam, pressure, and temperature. While AAC offers advantages in installation efficiency and eco-friendliness, it exhibits inherent brittleness, high moisture absorption, and lower tensile strength. Fire resistance is a major concern, as mechanical integrity and thermal performance deteriorate at elevated temperatures, with compressive strength reductions and microcracking reported beyond 500°C. Thermal conductivity increases with density, compromising insulation, and the quality of fly ash significantly influences AAC's mechanical behavior. This study focuses on locally sourced fly ash from the Norochchole coal power plant in Sri Lanka and evaluates short-duration (30–90 minutes) fire exposure, aiming to assess residual mechanical properties, thermal conductivity, and the potential enhancement of fire endurance through alkali-resistant glass fiber incorporation.

An experimental methodology was adopted to evaluate AAC's mechanical and thermal performance under fire exposure. Standardized ASTM methods were employed, including ASTM E119 for fire resistance, ASTM C109 for compressive strength, and ASTM C496 for splitting tensile strength. The base AAC mix proportion used was Cement: Fly Ash: Lime: Aluminum Powder = 1:1:0.07:0.02, reflecting practical production standards. Cubic specimens (50 mm³) and cylindrical samples (150 mm × 300 mm) were prepared for compressive and splitting tensile strength tests, respectively. To study fiber reinforcement effects, 1% alkali-resistant glass fibers (by weight) were incorporated, followed by autoclaving and specimen preparation. Thermal conductivity tests were performed on specially prepared specimens with internal thermocouples, allowing precise monitoring of heat transfer during exposure in an electric furnace.

Fire resistance tests subjected AAC samples to temperatures ranging from 100°C to 900°C in increments of 200°C, with exposure durations of 30, 60, and 90 minutes. Compressive strength tests revealed progressive deterioration with both increasing temperature and exposure time. Unreinforced AAC lost significant mechanical capacity, with complete compressive strength loss observed at 900°C. Visual inspection showed color changes, cracking, and weight reduction correlating with thermal decomposition. Thermal conductivity measurements indicated that AAC maintains effective insulation up to 600°C. However, cracking beyond this temperature increased heat transfer, reducing thermal performance.

Incorporation of 1% alkali-resistant glass fiber demonstrated a measurable improvement in residual mechanical properties and fire endurance. Fiber-reinforced specimens exhibited slower degradation of compressive strength under elevated temperatures, maintaining structural integrity better than non-reinforced samples. The addition of fibers extended the 30-minute and 60-minute fire endurance temperatures by 120°C and 70°C, respectively, when compared to unreinforced AAC, indicating enhanced capability to retain minimum residual compressive strength (1.80 N/mm²) as recommended by the National Building Research Organization of Sri Lanka. Splitting tensile strength was also positively influenced. The fiber-reinforced AAC maintained the baseline tensile strength (0.7 N/mm², splitting tensile strength of AAC without glass fiber at 30°C) up to 500°C during a 30-minute exposure, mitigating crack propagation and improving durability under thermal stress.

The findings demonstrate that AAC's fire performance has a strong temperature and exposure-time dependance. While unreinforced AAC suffers severe strength loss and cracking at high temperatures, the strategic addition of alkali-resistant glass fibers significantly enhances residual strength, thermal resistance, and overall structural resilience. This research establishes the effectiveness of fiber reinforcement in extending fire endurance of locally produced AAC blocks, providing practical guidance for safer construction practices and optimizing material selection for fire-sensitive applications.

Keywords: Autoclaved Aerated Concrete, Alkali-Resistant Glass Fiber, Fire Resistance, Residual Strength, Thermal Conductivity

Ref: 104/LKA/25

Sustainable Alternatives to Clay Bricks: A Review on PET-Based Masonry Units for Green Construction

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Abstract

The rapid escalation of global plastic consumption, particularly polyethylene terephthalate (PET), has created severe environmental challenges, while the conventional clay brick industry continues to generate significant greenhouse gas emissions and deplete non-renewable resources. This paper reviews existing literature on two sustainable construction approaches aimed at addressing these dual issues: (i) the incorporation of melted PET in masonry blocks and (ii) the embedding of sand-filled PET bottles in masonry units. Findings indicate that melted PET-sand composite bricks, particularly at an optimal 1:3 plastic-to-sand ratio, exhibit superior performance compared to conventional clay bricks. These composites achieve compressive strength improvements of over 44% and reduce water absorption by up to 94.93%. They also demonstrate enhanced durability, with less than 2% strength loss under acid exposure, compared to over 15% in traditional bricks. Additionally, their production requires 79% less energy and reduces CO_2 emissions by a similar margin, underscoring their environmental advantages. The review also highlights the effectiveness of sand-filled PET bottles as structural masonry elements. Sand is a superior filler since it can hold up to 38.34 N/mm² of pressure, which is far more than bottles filled with dirt (8.99 N/mm²) or plastic bags (2.72 N/mm²). The review shows that both melted PET-sand bricks and sand-filled PET bottle masonry are good, eco-friendly substitutes for regular clay bricks. These methods have two benefits: they reduce plastic waste and encourage building techniques that are good for the environment. The results give an excellent justification to use PET-based masonry technologies as we shift toward building materials that are better for the environment.

Keywords: Compressive strength, Durability, Masonry, PET bottles, PET waste

Ref: 105/LKA/25

Assessing the Impact of Human Development: Research and Development on CO2 Emissions in Five Technologically Advanced Asian Economies

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Abstract

This study examines the factors influencing CO2 emissions in five technologically advanced Asian economies: South Korea, Singapore, Japan, Malaysia, and China, from 1996 to 2022. We analyze the impact of human development, information and communication technology (ICT), renewable energy, research and development (R&D), financial development, and gross domestic product (GDP) on CO2 emissions. Using secondary data from British Petroleum and the World Development Indicators, we employed a variety of econometric techniques. First, we conducted unit root tests to assess the stationarity of the variables. Next, panel cointegration tests were used to determine long-run relationships. Descriptive statistics provided a summary of the data, while four panel data estimation techniques (FMOLS, FE-OLS, DOLS, and MMQR) were employed to estimate the models. Finally, a heterogeneous panel causality test was conducted to investigate causal relationships between the variables. Our findings indicate that GDP and its squared term (representing the inverted U-shaped EKC hypothesis) significantly influence CO2 emissions. Higher levels of human development are associated with lower CO2 emissions, suggesting a positive environmental impact. Surprisingly, R&D exhibits a positive correlation with CO2 emissions, warranting further investigation. ICT, renewable energy, and financial development were found to have no significant impact on CO2 emissions in these countries during the study period. The complex relationship between economic growth, technological advancement, and environmental impact is evident in these findings. While economic growth and technological innovation can contribute to increased CO2 emissions, policies that promote sustainable development, energy efficiency, and clean technologies are crucial for mitigating climate change.

Keywords: Human development; information and communication technology; renewable energy; research and development; financial development

Language and the Environment in Education: An Ecolinguistic Study of Sri Lankan School English Textbooks

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Abstract: (400 – 800 words).

This study investigates the representation of environmental themes in Sri Lankan school English textbooks through the lens of ecolinguistics, an approach that examines the relationship between language and the natural world. The aim of the research is to determine whether the environmental content embedded in these textbooks contributes to fostering ecological awareness, sustainability-oriented values, and a respectful relationship with nature, or whether it inadvertently reproduces narratives that align with anthropocentrism and ecologically harmful ideologies. School textbooks play a central role in shaping learners' perceptions, values, and attitudes; therefore, an ecolinguistic analysis of their content is both timely and necessary in the current global context of escalating environmental crises.

The dataset for this research comprised English textbooks used from Grade 6 to Grade 13 in Sri Lankan schools. From an initial pool of 650 lexical items identified across lessons that included environmental references, 389 words and phrases were manually selected for their explicit or implicit relevance to ecological issues. To ensure accuracy and relevance, these items were cross-checked using EcoLexicon, a specialized terminological resource in the field of environmental discourse. This provided a reliable framework for categorizing the selected items according to their ecological significance.

A qualitative content analysis was then undertaken, informed by key concepts in ecolinguistics such as ecological metaphors, framings of environmental concerns, and the ideological underpinnings of sustainability discourse. Ecological metaphors were analyzed to reveal how language structures perception of nature, while the analysis of framings focused on the ways environmental problems were presented in terms of severity, causes, and consequences. Finally, the ideological analysis examined whether the texts encouraged sustainable worldviews or reinforced exploitative orientations toward nature.

The findings indicate that ecological metaphors in the textbooks often construct narratives around risk, vulnerability, and conflict. Nature is frequently depicted as fragile or endangered, requiring human intervention, while environmental degradation is framed in ways that highlight danger and personal risk. Such metaphors, though effective in raising awareness of ecological threats, also risk reinforcing a one-dimensional perception of nature as primarily a source of problems rather than as an interconnected system of which humans are a part.

Framings of environmental issues in the textbooks consistently emphasize the seriousness of ecological degradation by addressing its causes and consequences, ranging from pollution and deforestation to climate change and biodiversity loss. These framings underline human responsibility for ecological damage, thereby encouraging students to recognize their role in both causing and mitigating environmental problems. In terms of ideological positioning, the textbooks promote sustainability through discourses of conservation, reduced consumption, and long-term ecological balance. The overarching message conveys that environmental protection is not optional but a proactive responsibility tied to collective well-being.

However, a critical gap emerges when examining the pedagogical activities that accompany the environment-related lessons. While the content of the texts often reflects sustainability values, the tasks that follow are overwhelmingly focused on linguistic skills such as reading comprehension, grammar exercises, vocabulary building, and writing practice. Little emphasis is placed on cultivating ecological awareness, critical reflection, or value-based education that could meaningfully connect language learning to environmental action. This disconnect suggests that although the textbooks incorporate environmental discourse, they fall short of fully integrating sustainability education into English language teaching.

The study concludes that Sri Lankan school English textbooks contain valuable ecological content and demonstrate an awareness of sustainability-oriented discourses. Nevertheless, the pedagogical exploitation of this content remains limited. For English language teaching to contribute more effectively to environmental education, future textbook design should integrate ecopedagogical approaches that link linguistic development with ecological responsibility. Such integration would not only enhance students' language proficiency but also empower them to engage with urgent environmental challenges in informed and meaningful ways.

Keywords: eco-linguistic, environment, language, Sri Lankan, textbooks

Statistical modelling of sustainable digital consumerism: data-driven strategies for environmental and social impact in Indian markets

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Abstract

In an era where sustainability is both a corporate mandate and a societal imperative, digital marketing offers a transformative pathway for advancing environmentally responsible and socially inclusive consumer behavior. This research investigates how Indian businesses can strategically recalibrate their digital marketing approaches to embed sustainability principles at scale. Anchored in India's distinctive socio-economic and cultural landscape, the study contextualizes Sustainable Digital Consumerism through the lens of post-COVID-19 digital acceleration, heightened environmental consciousness, and evolving consumer expectations. A comprehensive mixed-methods design was adopted, integrating primary survey responses from 600 urban and peri-urban consumers with secondary e-commerce transaction data, product Life Cycle Assessment (LCA) metrics, and social media analytics. The Sustainable Consumerism Index (SCI) was developed using Exploratory Factor Analysis (KMO = 0.803, Cronbach's α = 0.87), yielding five robust dimensions: environmental concern, social responsibility, trust in sustainability claims, convenience, and affordability. Advanced analytics - including Bayesian hierarchical regression, Structural Equation Modelling (CFI = 0.961, RMSEA = 0.044), Propensity Score Matching, Difference-in-Differences, and Random Forest classification (AUC = 0.91) - demonstrate that a one standard deviation increase in SCI boosts purchase odds by 46%, while eco-label presence increases likelihood by 34%. Interventions produced a 16.5 percentage point net uplift in sustainable purchase rates, with scalability projections indicating potential annual reductions of 5.3 Mt CO_2e, 1.9 billion litres in water savings, and diversion of 260,000 tonnes of waste from landfills. Findings underscore that sustainable digital consumerism is not only feasible but essential in India's competitive digital economy. The proposed strategic framework - aligned with SDG-12 (Responsible Consumption and Production) and SDG-13 (Climate Action) - equips marketers, policymakers, and platform designers with evidence-based, statistically rigorous, and operationally scalable tools to drive responsible growth through innovation, transparency, and environmental stewardship.

Keywords: Bayesian Analytics, ESG Strategy, Green Digital Marketing, Sustainable Consumerism Index, Structural Equation Modelling, Sustainable Development Goals

AI-driven customer engagement in entrepreneurial platforms: a conceptual model for driving brand loyalty in the digital start-up era

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Abstract
With the evolution in the current digital age, the speed of development of Artificial Intelligence (AI) has started revolutionizing marketing practices beyond anyone's imagination. With the ability to automate tedious processes, make real-time and personalized interactions possible, AI technologies have altered the pattern of how brands engage with customers. Start-ups, especially, are likely to gain disproportionately from these advancements. Unlike larger, more resource-intensive corporations, digital start-ups can leverage AI's scalability and cost-efficiency to design agile, data-driven strategies that not only reach targeted audiences but also foster deeper, more meaningful engagement. This ability to operate at scale without corresponding increases in costs offers start-ups a unique pathway toward establishing a sustainable competitive advantage in an increasingly crowded marketplace.AI-powered marketing solutions—like customer service automation chatbots, recommendation engines for personalization, and predictive analytics for foretelling consumer needs—have already demonstrated their worth in improving customer experiences. While adoption rates of such solutions are climbing rapidly, there is yet to be conceptual clarity on their long-term contribution towards customer engagement and brand loyalty, particularly in entrepreneurial and start-up settings. Most of the available literature discusses the technical competency of AI or the short-term marketing performance results of AI, ignoring the lion's share of how these technologies drive long-lasting consumer-brand relationships.

This research fills that gap by formulating a conceptual model bringing AI marketing applications, customer engagement theory, and brand loyalty models together, in particular within the digital start-up environment. The model has its roots in service-dominant logic and relationship marketing theory and proposes that value is co-created by firms and customers over time and in a personalized manner. It argues that marketing tools powered by AI are facilitators of engagement activities like interactive communication, individualized offers, and proactive services, which then mediate the relationship between brand loyalty and AI adoption. In addition, the model adds the start-up context as a moderating element to acknowledge that entrepreneurial agility, scarce resources, and culture of innovation can intensify or limit the success of AI-facilitated engagement strategies. By envisioning both direct and indirect routes between AI-tool use and brand loyalty, the model is able to fit in various circumstances. The direct route explains situations where the adoption of AI itself directly affects loyalty through increased perceived innovativeness and brand distinction. The mediated channel sees that, in all but a few instances, AI has its effect on loyalty mainly through enhancing quality of engagement—defined by measures like emotional attachment, behavioral involvement, and advocacy. The moderating influence of the start-up environment takes into consideration that resource scarcity, founder-based decision-making, and positioning can influence the strength and kind of these relationships. Theoretically, this article integrates knowledge from AI marketing literature, customer engagement theory, and brand loyalty research to develop an integrated conceptual framework for application in the entrepreneurial field. It builds on previous contributions by placing AI applications within start-up operations' dynamics and by suggesting propositions that future empirical research can verify. Practically speaking, the research provides actionable insights for start-ups that want to integrate AI tools in a manner not only that increases the efficiency of marketing but also promotes inclusive and sustainable customer relationships. Specifically, it underscores how ethical strategies may be used to minimize the digital engagement gap so that diverse customer groups—whether or not technology-savvy—may enjoy tailor-made experiences.

Overall, this conceptual analysis adds to scholarship and practice by providing a rich appreciation of how marketing with AI can enable sustained brand loyalty in environments of resource scarcity and innovation. Through the identification of the most important mechanisms, contingencies, and strategic factors at play, it serves as a basis for subsequent research as well as practical application, that will enable start-ups to successfully navigate the promise as well as complexity of AI adoption towards sustainable expansion and customer-led innovation.

Keywords: Artificial Intelligence, Brand Loyalty, Customer Engagement, Conceptual Model, Digital Marketing Tools, Entrepreneurial Marketing, Start-ups

Women Leaders in Ancient India's Economy: A Historical Analysis of Economic Reforms, Trade, and Governance

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Abstract

Women in ancient India occupied complex and often underappreciated positions in the economic life of their societies, moving fluidly between roles as rulers, administrators, traders, patrons, and thought leaders. This paper offers a comprehensive historical analysis of women's economic leadership across four significant chronological and cultural contexts: the Vedic period, the Mauryan empire, the Gupta and Vakataka dynasties, and the Sangam era of southern India. Drawing on a range of sources including Vedic hymns, political treatises, royal edicts, copperplate inscriptions, archaeological evidence, and contemporary scholarly interpretations, the study examines both royal women (queens, regents, and court advisors) and non-royal women (guild patrons, merchants, landowners, administrators, and scholars) as agents of economic influence.

In the Vedic age, women are documented as property holders, participants in philosophical debates on the nature of wealth, and custodians of familial economic resources. While bound by ritual and kinship frameworks, some exercised independent control over land, livestock, and artisanal production, indicating a nuanced balance between patriarchal norms and female agency. The Mauryan period witnessed a more institutionalized form of economic involvement, with queens, royal consorts, and female advisors playing visible roles in governance, charitable distributions, and the administration of resources. The Arthashastra's prescriptions, while framed within a patriarchal statecraft, nonetheless acknowledge women's participation in managing revenue and overseeing welfare.

By the Gupta and Vakataka periods, royal women's roles in economic matters were formalized through land grant charters and religious endowments, often bearing their personal seals and titles. Queens such as Prabhavatigupta wielded authority as regents, influencing agrarian policy and temple-based economic networks. These instances suggest that women could act as economic stewards not merely in regency crises but as sustained policymakers. Meanwhile, the Sangam corpus from southern India presents a vivid picture of merchant women, poets, and advisors involved in trade regulation, guild sponsorship, and the adjudication of economic justice. These texts reveal a milieu in which women were not only producers and traders but also shaped market ethics and dispute resolution.

The paper situates these historical episodes within a broader framework of gendered economic thought. It contrasts the pragmatic economic agency observed in ancient contexts with contemporary debates on women's economic participation, noting that while structural patriarchy imposed real constraints, the historical record contains notable examples of economic leadership, innovation, and wealth redistribution led by women. These case studies challenge reductive narratives that position women as marginal to the economic sphere in premodern India, instead revealing a spectrum of influence that ranged from domestic financial control to kingdom-wide policy interventions.

Ultimately, the study argues that acknowledging the economic contributions of women in ancient India enriches our understanding of both economic history and the longue durée of gendered leadership. It reveals a deep historical lineage for current discussions on inclusive governance, economic justice, and gender parity, and underscores the need to integrate women's roles into mainstream economic historiography rather than treating them as peripheral exceptions.

Keywords: Economic leadership, Gender roles, Governance, Trade, Women in ancient India

**Sustainable Digital Branding as a Driver of Fashion Brand Resilience:
Case-Based Evidence from a VUCA Environment**

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Abstract
The research studies explore how fashion firms can improve their resilience in volatile, unpredictable, complex, and ambiguous (VUCA) contexts by implementing sustainable digital branding strategies. The study defines the four strategic dimensions that are considered to be resilience: volatility management, minimizing uncertainty, navigating complexity, and fixing- ambiguity. The two most significant dimensions are versatile marketing and crisis response. Advanced customer feedback and analytics systems are the third. Sustainable supply chain practices as well as the omni model approach are the fourth dimension. The findings indicate that there are few issues in measuring long-term efficacy, and although VUCA-informed strategies are becoming more prevalent, they still provide valuable insights. A few key insights drawn from the case analysis comprise enduring brand values, agile digital shift, craft and storytelling, community and collaboration, and results-driven sustainability. This research contributes to the theoretical knowledge of how sustainability imperatives and digital transformation interact with the fashion sector, therefore providing a framework for the academic research and practical guidance on how to establish resilient brands in digital space.

Keywords: Brand Resilience, Digital Branding, Digital Transformation, Fashion, Sustainability, VUCA

Ref: 111/LKA/25

Landslide Vulnerability and Risk Assessment of Matara District Using The Geospatial Technologies

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Abstract

Landslides can be identified as one of the major natural hazards to Sri Lanka. Nearly 20,000 km^2 encompassing ten districts are prone to landslides in Sri Lanka. According to the data from Disaster Management Centre, the highest number of landslides were occurred in Matara District in 2017. So, identifying landslide susceptibility zones are important to take prevention actions of landslides as the first step. GIS- multicriterial evaluation on slope, elevation, topographic wetness, year 2023 vegetation cover and 2013 – 2023 annual average rainfall of physical and environmental landslide susceptible factors using GIS based Weighted Overlay Process, the study has identified Kotapola and Pasgoda Divisional Secretariat Divisions are having more than 5 km^2 areas of landslide susceptibility than other fourteen Divisional Secretariat Divisions of Matara District. Assessing the vulnerability of the landslide is important to mitigate the impact and minimize the damage of the event. Therefore, this research study has identified socio-economic vulnerable zones using built-up areas, road network and population data. Then 13 Grama Niladhari Divisions were from 36 Divisional Secretariat Divisions of Kotapola Divisional Secretariat Division and 12 Grama Niladhari Divisions were from 43 Grama Niladhari Divisions of Pasgoda Divisional Secretariat Division were identified as high landslide vulnerable zones. More than 20 Grama Niladhari Divisions are having risk of landslide and it is occurring since those areas belong to at least one of the socio-economic vulnerability analysis factors. This geospatial approach enables effective sustainable natural resource management via the establishment of environmentally susceptible areas with the landslide susceptibility and risk mapping. Being the non-structural and structural mitigation methods, the geospatial analysis in this study is a core foundation for the implementation of structural mitigation. Determining landslide susceptibility zones as well as socio-economic vulnerability zones, this method enables the first step of the disaster management cycle such that more targeted and improved interventions could be made to prevent landslide hazards.

Keywords: Geo Spatial Approach, Landslide, Risk Assessment, Susceptibility, Weighted Overlay Process

Ref: 112/LKA/25

Competency Mapping in Small Businesses: A Pathway to
Sustainable Development and Employee Satisfaction

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Abstract
This study explores the multifaceted dimensions of competency mapping and examines how these elements influence employee satisfaction within the small manufacturing business sector. In particular, it highlights the integration of purpose-driven practices into organizational strategies as a pathway to sustainable development. While competency mapping has been widely discussed in larger corporate contexts, its application and outcomes in small business settings remain underexplored. This research addresses that gap by analyzing the relationship between key competency mapping factors and employee happiness, while also considering variations across demographic groups. Competency mapping serves as a structured process to identify, assess, and develop the skills and attributes necessary for optimal job performance. In the context of small manufacturing enterprises—where resources are often limited and employees frequently perform diverse roles—the alignment of competencies with organizational goals becomes critical. This study focuses on core skill domains such as personality, communication, behavioral, leadership, managerial, technical and aptitude, and strategic and creativity skills. The research posits that effectively identifying and enhancing these competencies not only improves individual performance but also fosters a supportive work environment that aligns with sustainable business practices. Data for this investigation were collected from 140 employees representing various small manufacturing businesses in the Mysuru industrial region. A structured questionnaire was employed as the primary data collection tool, using a simple random sampling approach to ensure representation across departments and functions. The statistical analysis encompassed multiple regression, correlation, and reliability testing to establish the robustness of the findings. Cronbach's Alpha values well above the acceptable threshold confirmed strong internal consistency across the measurement items, reinforcing the reliability of the study's results.

The analysis revealed that communication skills emerged as the most significant predictor of employee satisfaction, underscoring the importance of clear, effective information exchange in building positive workplace relationships and enhancing morale. Personality skills also demonstrated a strong positive association with satisfaction levels, suggesting that traits such as emotional intelligence, adaptability, and interpersonal sensitivity play a critical role in employee well-being. Interestingly, strategic and creativity skills were found to have a negative association with satisfaction, possibly reflecting the stress or additional workload that may accompany roles requiring constant innovation and long-term strategic planning without adequate support. Demographic analysis indicated that age-related differences significantly influenced personality and communication skills, implying that tailored training initiatives could help optimize these competencies across diverse workforce segments. Gender-specific training and programs tailored to various demographic groups emerged as vital recommendations, particularly in the pursuit of inclusive and equitable workplace development. For small manufacturing businesses aiming to contribute meaningfully to sustainable development, the study advocates for continuous refinement of competency mapping processes. This includes embedding feedback mechanisms into training programs, ensuring that skill development remains relevant and responsive to employee needs. By integrating sustainability principles into their core operational strategies and prioritizing employee satisfaction, small businesses can enhance their competitiveness while simultaneously advancing societal well-being. Ultimately, the findings reinforce the notion that competency mapping, when strategically applied, can serve as both a human resource development tool and a driver of sustainable growth. For policymakers, business leaders, and human resource professionals in the small business sector, this research offers actionable insights into building a skilled, satisfied, and committed workforce that can support long-term organizational success and contribute positively to broader sustainable development goals.

Keywords: Competency mapping, Employee satisfaction, Purpose driven practices, Sustainable development, Small manufacturing business,

A Comparative Analysis of the Cost of Education and Mode of Learning among University Students in Sri Lanka: A Focus on Physical and Online Learning

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Abstract
This paper addresses the economic implications of different modes of university education, aligning with conference themes on education, economics, and equity. The COVID-19 pandemic has accelerated the adoption of online education globally, including within Sri Lanka's higher education sector. While online learning offers flexibility, its cost-effectiveness compared to traditional, in-person education remains a subject of debate. University students face diverse cost components—both direct and indirect—that may vary significantly depending on whether they attend physical classes or participate in online learning. Understanding these differences is vital for policymakers, institutions, and students when designing equitable and affordable learning models. This study empirically examines and compares the private costs incurred by students under these two modes of learning in Sri Lanka.
Existing research in educational economics suggests that the total cost of education encompasses direct costs (such as tuition fees, accommodation, and learning materials) and indirect costs (including transportation, meals, and communication expenses). Studies by Psacharopoulos & Patrinos (2018) and OECD (2020) highlight that online education can reduce certain expenditure categories, but may introduce new costs, such as digital infrastructure and internet access. However, most prior studies are focused on developed countries, with limited empirical evidence from developing economies like Sri Lanka, where infrastructural and socio-economic contexts differ markedly. This research addresses that gap by quantifying and comparing cost components across both learning modes in a developing country context.

The study employed quantitative research design. A structured questionnaire was developed to capture expenditure data on various cost factors associated with university education. The survey targeted undergraduates from multiple faculties in Sri Lankan state universities, ensuring representation across academic disciplines and geographic locations. Cost categories included; Accommodation, Stationery, Photocopying, Library expenses, Travelling, Meal expenses, Entertainment, Network and communication. Data was analyzed using SPSS statistical software. Descriptive statistics were used to summarize cost distributions, and independent sample t-tests were employed to determine statistically significant differences in costs between physical and online learning modes.

The analysis revealed significant variation in cost structures between the two modes of learning. Physical learning was associated with higher expenses in accommodation, travel, meals, and entertainment. In contrast, online learning significantly reduced or eliminated these categories but increased costs related to network and communication. The findings reveal that accommodation costs were eliminated in most cases for online learners, while travel and meal expenses decreased by more than 60% compared to students in physical learning modes. Stationery and photocopying costs were also significantly lower for online learners, as a large proportion of learning resources were accessed digitally. However, network and communication expenses were substantially higher for those engaged in online learning, in some cases offsetting part of the savings from reduced physical attendance. Overall, the aggregate monthly private cost of education was considerably lower for online learning, with savings estimated to range from 25% to 40%, depending on the student's residential status.

The study concludes that online learning is, on average, a more cost-effective mode of education for Sri Lankan university students, primarily due to reduced accommodation, travel, and meal expenses. However, it also highlights that cost advantages depend on reliable internet access and adequate digital infrastructure, which may not be equally available to all students. For an international audience, the findings contribute to the broader discourse on educational equity and affordability in post-pandemic higher education systems. They provide evidence from a developing country context, demonstrating that while online learning offers substantial cost savings, its successful implementation requires addressing the digital divide.

The policy implications of this study suggest that universities should adopt blended learning models that integrate the flexibility of online education with the benefits of in-person engagement. Governments and higher education institutions are encouraged to invest in affordable internet access and digital literacy programs to ensure equitable participation across diverse student populations. Furthermore, distance education could be strategically expanded to reach underserved communities, particularly those in rural or economically disadvantaged areas. Overall, the findings highlight the importance of incorporating cost analysis into the design of inclusive and sustainable higher education policies, both in developing and developed contexts.

Integrating FinTech and ESG into Health Insurance: A Pathway to Financial Security and Sustainable Commerce in Emerging Economies – A Study from Davangere District

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Abstract
Health insurance is increasingly recognized as a critical component of financial security, especially in emerging economies where households are highly vulnerable to healthcare-related financial shocks. In recent years, the integration of Financial Technology (FinTech) and Environmental, Social, and Governance (ESG) principles has gained prominence in reshaping the insurance sector by driving innovation, inclusivity, and sustainability. This study explores the intersection of FinTech and ESG in the context of health insurance in Davangere District, Karnataka, with the objective of understanding how these elements can collectively promote financial security and sustainable commerce.

The adoption of FinTech in health insurance offers multiple advantages, including digital platforms for seamless policy issuance, premium payments through mobile wallets and UPI, AI-driven claim processing, and telemedicine support. These technological advancements not only enhance efficiency and reduce operational costs for insurers but also improve accessibility and affordability for policyholders. At the same time, embedding ESG principles ensures that insurance products are not only economically viable but also socially responsible and environmentally sustainable. By prioritizing responsible investments, fair pricing, data privacy, gender equity in policy design, and climate resilience in healthcare coverage, insurers can contribute to long-term social and economic development.
This research is based on a mixed-methods approach, combining survey data from health insurance policyholders in Davangere District with interviews from local insurance professionals and healthcare providers. The findings reveal that FinTech-driven solutions have significantly increased awareness and adoption of health insurance among younger and rural populations, bridging gaps in traditional distribution models. Moreover, ESG integration has enhanced trust and customer loyalty, as policyholders perceive insurers as ethical and community-oriented. However, challenges remain in terms of digital literacy, regulatory gaps, infrastructure limitations, and resistance to ESG adoption among smaller insurers.

The study concludes that integrating FinTech and ESG into health insurance can act as a transformative pathway for strengthening financial security while simultaneously aligning with global sustainability goals. For emerging economies like India, this integration holds the potential to reduce healthcare inequities, stimulate inclusive growth, and create resilient financial ecosystems. Specific recommendations are provided for policymakers, insurers, and technology providers to build collaborative frameworks that advance innovation, ethical responsibility, and equitable access to health insurance. Ultimately, the research underscores that financial security and sustainable commerce are not mutually exclusive but are mutually reinforcing pillars in building a healthier, more equitable society.

Ref: 115/LKA/25

Benefit Analysis Of Usage Of Ceramic And Porcelain Waste Powder As Supplementary Cementous Materials In Interlocking Paving Block Production

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Abstract: Concrete interlocking paving blocks are popular paving material for parking areas, walkways, gardens and rural roads. Due to its pervious nature and aesthetically pleasing appearance, popularity of using of concrete interlocking paving blocks as a paving material has increased during past few decades, both local & global contexts. However, escalation of cement prices, and unsustainable outcomes caused by excessive usage of cement has become a concern in concrete interlocking paving block production industry as well. The excessive CO_2 emission associated with cement production and considerably large embodied energy stored in cement during the production are two main factors that would lead to classify cement as an environmental unfriendly material in sustainable perspective . Hence, the introduction of partial replacement of cement by supplementary Cementous materials in this type of product is becoming a timely need. This study was focused on partial replacement of cement by ceramic and porcelain waste powder as a Supplementary Cementous material and assessment positive impact of it on production cost and sustainability. According to the test results, it was found that cement can be replaced upto 15% (by weight) by waste ceramic & porcelain powder. Also a percentage production cost reduction of 2.5% can be observed with this approach . The Embodied Energy reduction and Embodied Carbon reduction of proposed optimum alternative mix (mix having 15% partial replacement of cement by waste ceramic and porcelain powder) are 11.8% and 18.9%, respectively compared with conventional mix..

Keywords: Concrete Interlocking paving blocks, Supplementary Cementous Materials, Sustainability, Embodied

Determinants of Customer Preference for Cardless Technology Over the Card for Cash Withdrawals in Sri Lanka

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Abstract
It may seem contradictory that someone who avoids using a debit card still wants to get cash and is willing to use their mobile device at an ATM. The purpose of this study is to determine the factors influencing customer preference of cardless technology over the card for cash withdrawals in Sri Lanka. The study has been conducted using a quantitative-deductive approach and data was collected from 186 cardless technology users through structured questionnaires. Convenience sampling was employed in this research study. The research employs the Technology Acceptance Model (TAM) as a theoretical foundation, evaluating Perceived Ease of Use, Perceived Usefulness, Perceived Security and Customer Trust as independent variables in this study, with Customer Preference as the dependent variable. Reliability, descriptive, correlation, multiple regression analysis and comparative study were used to analyze the data using the SPSS software. According to the study's findings, all four factors significantly affect customer preference, with perceived usefulness and customer trust emerging as the most impactful variables. Independent variables are less correlated with each other, as per the results of the inter correlation matrix, tolerance values, VIF and Cronbach alpha values demonstrate the data are more reliable. The analysis also highlights the comparative adoption rates between two major banks, People's Bank and Sampath Bank, providing insights into their customers' perceptions. The study concluded that cardless technology not only enhances customer perceptions of security and ease of access but also holds the potential to revolutionize cash withdrawal practices by eliminating the need for physical cards. Although banking technology in Sri Lanka is advanced and trust issues appear minimal, banks must continue to communicate and educate customers on the benefits of adopting cardless services. The findings of this study highlight the potential for banks to leverage cardless technology as a secure, convenient and cost-effective solution to meet the evolving needs of customers. This study is subjected to several limitations. First, the sample was limited to a small group of Sri Lankan banks. Second, reliance on self-reported data may have bias responses. For a detailed analysis of the banking sector as a whole, it is essential for future research to focus on receiving money through this cardless technology, which is also provided by other banks. This can be extended to additional markets, i.e., similar consumer preferences in other regions or different countries, especially in developing economies with growing mobile and digital banking services, can be investigated. Furthermore, future studies can include a broader range of banks and examine the potential environmental benefits of reduced plastic card usage, as well as how sustainability factors may influence consumer adoption of such technology.

Keywords: Cardless Cash; Customer Preference; Customer Trust; Perceived Ease of Use; Technology Acceptance Model (TAM)

Innovative Models for Sustainable Urban Development: Balancing Economic Growth and Environmental Conservation in Indian Cities

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Abstract: This research paper investigates innovative models for sustainable urban development in India, focusing on the critical challenge of balancing economic growth with environmental conservation. As Indian cities continue to expand at an unprecedented rate, the need for integrated and sustainable development frameworks has become paramount. This study employs a descriptive research design, synthesizing insights from a comprehensive review of existing literature and primary data collected from a survey of 100 urban development experts, including planners, policymakers, and environmental consultants across India. The analysis reveals a significant policy-practice gap, with 40% of experts identifying 'Fragmented Governance and Lack of Political Will' as the primary obstacle to sustainable development. While 'Smart Cities Mission' is seen as a step forward, only 25% of respondents deem it 'Highly Effective' in achieving holistic sustainability. The findings highlight the potential of innovative models like the Water-Energy-Food (WEF) nexus, circular economy principles, and green financing mechanisms. The paper concludes with strategic recommendations for creating a more sustainable urban future, emphasizing the need for integrated metropolitan planning authorities, robust sustainability assessment tools, and scalable public-private partnership models.

Keywords: Environmental Conservation, Economic Growth, Green Infrastructure, Indian Cities, Smart Cities, Sustainable Urban Development, Urban Planning

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