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UNIVERSITY OF KELANIYA

Faculty of Graduate Studies

23rd International Postgraduate Research Conference (IPRC) 2023

"Enrichment Of Academic Strength Through Research"

Organized by

FACULTY OF GRADUATE STUDIES
UNIVERSITY OF KELANIYA, SRI LANKA

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ABSTRACT VOLUME

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"Enrichment of academic strength through research"

Abstracts

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Message from the Vice-Chancellor

It is with great pleasure that I welcome you to the International Postgraduate Research Conference 2023, organized by the Faculty of Graduate Studies, University of Kelaniya. The University of Kelaniya takes great pride in hosting our flagship research conference, as it is a forum for researchers and scholars to share knowledge, information, exchange experiences, to present innovative concepts and research related to all areas of Commerce and Management, Science, Medical Sciences, Humanities, Social Sciences, Computing and Technology, Multi-disciplinary Studies, and Digital Learning.

The theme of IPRC 2023, Enrichment of academic strength through research, is particularly apt given that this year, the University of Kelaniya entered the 2024 rankings of the Times Higher Education World University Rankings for research intensive universities. The skill of critical thinking and analysis that is fostered in students by engaging them in research; the generation of new knowledge through research; the dissemination of such knowledge; and the application of research findings in our lives, whether it is through changes in policy and practice; or through commercialization of new products that emerge from research: these are all ways in which the research conducted in our universities enrich not just academia but society as a whole.

I would like to thank and congratulate the Dean of the Faculty of Graduate Studies, Snr. Prof. Kapila Seneviratne, the Deputy Registrar / FGS Mr. Lakmal Wijeratne, and the Assistant Bursar / FGS Ms. Sathishka Gonapeenuwala, and the conference Organizing Committee, for all the hard work that they have put into organizing this event. I would also like to thank the researchers, reviewers, editors and other academics who contributed to sustaining the core values of quality and innovation throughout this conference.

I wish all conference participants very fruitful deliberations.

Senior Prof. Nilanthi Renuka de Silva
Vice-Chancellor
University of Kelaniya
Sri Lanka

Message from the Dean, Faculty of Graduate Studies

Research is the driving force behind the progression of society. Research provides solutions to the challenges faced by the progressing community. The new knowledge created through research flows through many channels and finally ends up in the classroom, where new knowledge is transferred to new learners. Academics play a significant role in generating new, acceptable and beneficial knowledge to society. Universities are unique academic environments where knowledge is created and transferred. However, the developed new knowledge needs to be reviewed and validated before transferring to the new learners. Therefore, the researchers need to publish their findings after proper peer review. However, peer review alone may not guarantee the quality of new knowledge. How the new knowledge is applied or used by the other academics is a good index for the acceptable new knowledge ready to be transferred to the new learners. Therefore, the new knowledge generated in the laboratory, field or any academic environment should end up as publications, which are helpful to the academic community in conducting further research. The present conference's theme, 'The Enrichment of Academic Strength through Research', highlights the importance of developing new knowledge applicable and acceptable to academics and society.

Wishing you a fruitful day,

Senior Prof. N. A. K. P. J. Seneviratne
Conference Chair and
Dean of the Faculty of Graduate Studies
University of Kelaniya
Sri Lanka

Profile of the Keynote Speaker – Prof. Padmanabhan Balaram

National Centre for Biological Sciences (NCBS)
Bengaluru, India

Prof. Padmanabhan Balaram is an eminent Indian biochemist in the scientific community worldwide. For nearly a decade, he was the Director of the Indian Institute of Science (IISc) in Bangalore, India, which was ranked first in India in both the overall and academic categories of the 2023 Nature Index Annual Tables. Prof. Balaram obtained his bachelor's degree in chemistry from Pune University, followed by a master's degree from the Indian Institute of Technology (IIT) Kanpur. He earned his Ph.D. from Carnegie-Mellon University, Pittsburgh and underwent post-doctoral training at the Department of Chemistry, Harvard University, U.S.A, under Nobel laureate Robert Burns Woodward. At the age of 24, he joined the Molecular Biophysics Unit (MBU) faculty at IISc, Bangalore, established by Prof. G.N. Ramachandran. Prof. Balaram's early research focused on the membrane-active peptide alamethicin, which led to a long-standing interest in the conformational limitations on backbone folding induced by the unique residue alpha aminoisobutyric acid (Aib). He has also made significant contributions to the design and synthesis of disulphide-containing model peptides, which has permitted the construction of bioorganic models for redox proteins with active disulphide loops. His outstanding contributions include studies on the structure, conformation and biological activity of designed and natural peptides, the use of NMR, crystallography and mass spectrometry for proteins and peptides, studies on Plasmodium falciparum triosephosphate isomerase (TIM) and computational analysis of protein structures. His outstanding research contribution is evidenced by an h-index of 77 and over 23,000 citations from nearly 500 scientific papers. He has also served on the editorial boards of several reputed journals and been conferred honorary doctorates from several universities. In recognition of his far-ranging contributions and services, he was awarded the Indian civilian honours Padma Shri in 2002 and Padma Bhushan in 2014. Other significant awards and recognitions include Shanti Swaroop Bhatnagar award (1986), The World Academy of Science (TWAS) Prize (1994), the G.D.Birla Award (1994), The Distinguished Alumnus Award from IIT Kanpur (2000) and recently, the R. Bruce Merrifield Award (2021) of the American Peptide Society.

Profile of the Guest of Honor - Prof. Hemalatha Balaram

Molecular Biology and Genetics Unit, Jawaharlal Nehru Centre for Advanced Scientific Research
Bengaluru, India

Prof. Hemalatha Balaram is a renowned Indian biochemist. She was a professor at the Jawaharlal Nehru Center for Advanced Scientific Research (JNCASR) in Bangalore, India, which is ranked among the top ten academic institutions in India according to the Nature Index Annual Tables 2023. Prof. Hemalatha Balaram received her doctorate from the Indian Institute of Science (IISc) and did postdoctoral research at the University of California, San Francisco, USA. After a short stint at the ASTRA Research Center India, she joined JNCASR as a Faculty Fellow in 1996 and has been a professor since 2008. She was Dean of Academic Affairs from 2008 to 2011 and has been Dean of Faculty Affairs since 2015. Prof. Hemalatha has several years of experience in the areas of molecular parasitology, metabolism in parasitic protozoa, molecular enzymology and protein structure-functional analysis. The focus of research in her laboratory is on understanding biochemical pathways and metabolism in the malaria parasite Plasmodium, as well as protein structure-functional analysis of enzymes involved in purine nucleotide synthesis and fumarate metabolism in the parasite. She is also the author and co-author of more than 100 peer-reviewed journal and conference papers with an H-index of 26 and over 1,800 citations.

Abstract of the Plenary Session One - Translating research into organizational change: Leadership and institutional work

Prof. Stephen Marshall - Director of the Centre for Academic Development at the Victoria University of Wellington, New Zealand

The translation of research into change in large organizations is a challenging and frequently frustrating process. The history of innovation has shown that important research and significant ideas struggle to gain traction and often have to be reframed and repeatedly engaged with before they are recognized for their value and enacted at scale. Distinct from the identification of new ideas through research is the necessity to present them in ways that help others understand their potential and how that might be realized. This process is called sense-making. This framing of an idea is necessary as often the initial encounter with an idea can be remarkably resistant to further change. It is a common mistake to believe that research and the products of it such as technology have a single purpose or conception. Rather any powerful idea will have some aspects that immediately apparent, but also many others that may require further experience or development to become apparent to most users. The adoption of new technologies within any organizational context is a complex mix of processes that translate new ideas into organizational systems and services. This process has been described as Institutional work "the purposive action of individuals and organizations aimed at creating, maintaining and disrupting institutions". Institutional work in the university context has been modelled as a three phase process with new ideas coming into being, ideas then translated into changes in how the university enacts itself organizationally, concluding with an altered sense by the institution of how work is done. The release of ChatGPT and DALL-E, sparked a dramatic reaction worldwide and a massive surge of development from the initial foundation to a vast and rapidly growing range of tools. The engagement with this new idea and the research driving our understanding and expectations for AI as an important new capability for educational institutions will be described using the Spies framework, along with a discussion of how researchers and leaders can help organizations gain the greatest possible benefits of new ideas as AI.

Abstract of the Plenary Session Two - The Vernacular in the Contemporary: Folk Arts and the Art World in India

Prof. Roma Chatterji - Department of Sociology, Delhi School of Economics, Delhi University, India

What is the significance of the art world in constituting folk art practices? Do art exhibitions, workshops and craft melas serve as contact zones where different 'cultures' meet and interact as equals or is there a hierarchical relationship whereby the values of the art world serve to legitimize a pre-existing canon according to which the folk arts are evaluated and judged as art?

The philosopher Arthur Danto coined the term 'art world' to capture the theories of art that shape exhibition practices, institutions and discourses that help identify and even define a work as art. Historically art worlds come into being when art acquires an autonomous status separate from religion or any other social institution. In terms of this perspective then it becomes important for a sociologist to ask which of the folk arts in India can actually be defined as 'art' – those which allow themselves to be detached from the wider social context in which they were performed perhaps? I will address these questions through an examination of the Pardhan-Gond style of painting.

Abstract of the Plenary Session Three – Malaria: a still unconquered infectious disease

Prof. Hemalatha Balaram - Molecular Biology and Genetics Unit, Jawaharlal Nehru Centre for Advanced Scientific Research, Bengaluru, India

Malaria is a mosquito-borne disease caused by the protozoan parasite, Plasmodium. Today, malaria continues to be prevalent in tropical and subtropical countries, and uncommon in temperate climates. In the year 2020, at least 241 million cases of malaria occurred worldwide and 627,000 people died, mostly children in sub-Saharan Africa. I will trace the history of this disease, major discoveries made and the current status of disease prevention, cure and vector (mosquito) control.

Abstract of the Plenary Session Four - *Artificial Intelligence Driven Discovery of Novel Anticancer Peptides*

Prof. Shirley W. I. Siu - Centre for Artificial Intelligence Driven Drug Discovery, Macao Polytechnic University, Macao

Anticancer peptides (ACPs) hold immense therapeutic potential, yet their experimental discovery is hindered by time-consuming and costly processes. To expedite the discovery process, we recently developed a screening workflow comprising of multiple AI prediction models to rapidly filter and prioritize ACP sequences based on predicted class probability, antitumor activity, and toxicity. As a proof-of-principle, this workflow was applied to identify new ACPs against colorectal cancer from the genome sequences of Candida albicans. Biological experiments with the candidates in vitro and in vivo confirmed the activity of the peptides. In particular, the top two candidates PCa1 and PCa2 showed high efficacy in a colon xenograft nude mouse model without significant toxicity. Residue decomposition analysis of the peptide-membrane interaction in molecular dynamic simulations confirmed the amino acids in the sequence that contributed most to the interaction thus provide hints for further rational design of the peptides.

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Table of Content

Science, Technology, Mathematics and Medicine

Humanities, and Social Sciences

Accounting, Business and Management

Abstract No: ABM 01 Accounting, Business and Management

Case study of the liquidity management practices of ABC Pvt. limited in ensuring sustainable growth during uncertain economy

P. S. N. Perera[1*] and P. D. C. Perera[2]

[1]Faculty of Business and Law, University of Northampton, United Kingdom
[2]Department of Commerce and Financial Management, Faculty of Graduate Studies, University of Kelaniya, Sri Lanka

ABC Private Limited (ABC) has been able to maintain a stable liquidity position throughout the past years. However, the pilot study conducted by interviewing five executives on current financial issues revealed that the liquidity management practices relating to cash holding management, corporate bank operations and trade credit management need to be relooked at to ensure sustainable growth as the company is currently rebuilding its operations after recent economic turmoil in Sri Lanka. The study aimed to critically examine the impact of these practices on ABC's sustainable growth during uncertain economic conditions. Qualitative data was collected by conducting interviews with eleven finance team members and management to gather in-depth insight and practical observations relating to cash holding management, corporate bank operations and trade credit management while ensuring confidentiality ethics. Data was then analyzed and summarized using key categories and common themes accentuated during interviews. The results indicated that ABC could face potential threats to sustainable growth due to the issues identified with the lack of knowledge about liquidity management process and its importance, corporate cash holdings. However, the company shows a stable position in relation to bank account operations and trade credit management which can be further improved. The study highlights the importance of studying liquidity management practices in non-banking sectors and offers valuable insights to the corporate financing decision makers in developing strategies emphasized on these areas to strengthen sustainable growth. This addresses the limited availability of Sri Lankan literature on liquidity management practices for small and medium enterprises (SME) and the research gap in international publications due to the lack of sufficient resources on non-finance sector. Further, the management of ABC will be benefited by the findings and recommendations of this report in strategic decision making. The future researchers can expand the study into different sectors, adding quantitative techniques and different variables to enrich literature.

Keywords: Cash holdings, Corporate banking, Crisis, Liquidity management, Sustainability

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Abstract No: ABM 02 Accounting, Business and Management

Relationship between access to trade finance and performance: moderated by internal structural weaknesses in small and medium enterprises in Sri Lanka

A. J. R. Jayaweera[1,*], C. J. Liyanage[2] and A. Bhaumik [3]

[1]Department of Business and Accounting, Lincoln University College, Malaysia
[2]Department of Accounting, Faculty of Finance, University of Kelaniya, Sri Lanka
[3]Department of Business and Accounting, Lincoln University College, Malaysia

Inadequate access to trade finance is considered as a liability of newness of an enterprise. The inability to obtain adequate access to finance from the formal banking sector is a key constraint for the growth and development of Small and Medium Enterprises (SME) carrying out international trade exports in Sri Lanka. The problems faced by them in accessing adequate trade finance remain unaddressed, hindering their growth, market performance and development. The effect of specific underlying factors on accessing adequate trade finance, by these niche SMEs are largely unknown, creating a considerable gap in the existing knowledge. Systematic review of literature indicates that internal structural weaknesses was a factor affecting financial access by SMEs. This research study therefore, is aimed at conducting comprehensive field research exploring the relationship between access to trade finance and SME export performance with the moderating effect of the internal structural weaknesses of the SMEs themselves. The research method used was survey by Google Form questionnaire. The study sample included 100 owners/ managers from the Sri Lankan export oriented Small and Medium Enterprises (SME). Upon descriptive analysis of data, it was found that 97 percent of the SME exporters considered the impact of inadequate access to trade finance had a notable or major impact on their export performance. Correlational analysis confirmed a significant positive relationship existed between access to trade finance and SME export performance. However, moderated regression analysis revealed that internal structural weaknesses of the SMEs had a significant moderating effect on the relationship between access to trade finance and the export performance of the SMEs in Sri Lanka. It is recommended that urgent steps be taken in reducing such intrinsic weaknesses to help the export-oriented SMEs in Sri Lanka gain better access to finance thereby enhancing their exports performance in international markets.

Keywords: Export, Small and medium enterprises, Trade finance

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Abstract No: ABM 03 Accounting, Business and Management

Market research on factors affecting for the introduction of an *ayurvedic* powder-based shampoo in Sri Lanka

G. G. N. K. Siriwardana[1*]

[1]Business School, Canterbury Christ Church University, United Kingdom

Consumers' behavioral changes in terms of health orientation and ethical purchasing practices have urged the business organizations to come up with novel products that promote sustainable business practices. In particular, as a solution to the water crisis, this study will analyze the viability of the introduction of an ayurvedic powder-based or a water-less shampoo to the Sri Lankan market. The use of virgin coconut oil, aloe vera and neroli oil would promote the health benefits with their associated emollient characteristics. Accordingly, this research intends to analyze the impact of four variables, namely consumers' income, age, knowledge and type of the lifestyle on purchasing an ayurvedic powder-based shampoo. In an attempt to gain more insights to address the above-mentioned objectives, both qualitative and quantitative data were collected following the mixed method. The sample of the study consisted of 108 respondents and as the sampling techniques, convenience sampling and purposive sampling techniques were used to determine the samples for quantitative and qualitative studies respectively. Moreover, the data was collected by conducting eight semi-structured interviews and by distributing a questionnaire among hundred respondents. The quantitative data was analyzed using statistical tools and the qualitative data-set was analyzed by using the thematic analysis technique. As per the study findings, the income level affects the purchasing intention of the consumers which shows the price sensitivity of Sri Lankans. Therefore, it is suggested to set prices after a careful analysis since this may have an adverse impact on the profitability especially during the crisis situation. However, there is no association between consumers' age and lifestyle with the purchase of green products. Hence, future researchers can address this literature gap to find out what exactly influences Sri Lankans to purchase green products.

Keywords: Powder-based, Shampoo, Sustainability, Water crisis

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Abstract No: ABM 04 Accounting, Business and Management

Impact of information search on purchase intention: moderating effect of perceived price on personal care products in Sri Lanka

V. V. K. Senevirathne[1*] and U. Mirando[2]

[1]Department of Industrial Management, University of Kelaniya, Sri Lanka
[2]Department of Marketing Management, University of Kelaniya, Sri Lanka

The personal care market in Sri Lanka has seen substantial expansion in recent years, driven by heightened consumer awareness of appearance, beauty, and product preferences. And today, consumers increasingly engage in information search activities before engaging with product selections and purchasing. Nevertheless, there is a limited understanding of how information search behavior and perceived price jointly influence consumer purchase intention of personal care products. Subsequently, perceived price plays a pivotal role in consumer decision-making. Therefore, it becomes crucial to explore how information search influences the intention to purchase personal care products with perceived prices. Thus, this study aims to examine the impact of information search on purchase intention while considering the moderating effect of perceived price for personal care products in Sri Lanka. A quantitative approach was employed to accomplish these research objectives, utilizing a structured questionnaire as the primary data collection instrument. The population of interest comprises consumers of personal care products in Sri Lanka. The sample size consisted of 384 respondents selected through convenience sampling which came under non-probability sampling. Data analysis technique was Structural Equation Modelling (SEM) through SPSS 25.0 version and AMOS 21.0 version. The findings reveal that consumers who engage in extensive information searches are more likely to exhibit higher purchase intention for personal care products in Sri Lanka. Furthermore, the analysis indicates a positive interaction effect between information search and price perception on the purchase intention of personal care products. Importantly, the findings provide valuable insights for marketers and policymakers. Also, it will lead for the development of effective marketing and pricing strategies that align with consumer preferences, fostering industry growth in Sri Lanka. Within future research, other factors which influence on purchase intention in personal care product should be investigated.

Keywords: Information search, Perceived price, Personal care products, Purchase intention

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Abstract No: ABM 05 Accounting, Business and Management

The unheeded female voice: a study of the formal union participation of female academics in Sri Lankan state universities

W. A. M. S. Fernando[1*], N. Janadari[2] and S. Rajakarunanayake[3]

[1]Faculty of Graduate Studies, University of Kelaniya, Sri Lanka
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[3]Department of Industrial Management, Faculty of Business, University of Moratuwa, Sri Lanka

Gender is assumed to have an impact on workers' perceptions and experiences of trade unions, which influences their propensity to join and participate in its activities. Females record a low level of union participation in Sri Lanka, regardless of narrow gender gaps in the workforce in most sectors. The Federation of University Teachers' Associations (FUTA) has witnessed a similar pattern with a low rate of female participation since its inception. Although consisting of a majority of females, FUTA displays a lack of active female participation, especially at the executive level, which is considered formal union participation. To address this gendered issue and an endorsed gap in the union participation literature, this research focuses on the study of union commitment and formal union participation of female lecturers in state universities, through the mediating impact of perceived union support. A quantitative research study was designed to examine this relationship in the realm of positivism. Data was collected from 250 female lecturers of state universities in the western province, and statistical analysis was done via SPSS while the mediation was tested using PROCESS Macro after ensuring the scales' reliability and validity. The findings illustrate a strongly positive relationship between union commitment and formal union participation with the partial mediation of perceived union support in the union participation of females in FUTA. Thus, it was found that union commitment is directly and positively related to the formal union participation of females in FUTA, and that the participation of females in the trade union activities can be motivated when FUTA members act supportive towards female academics. Further, the socio-politico-economic background in the country has strengthened the relationship between the variables. The study encourages union commitment research related to other settings and work regarding behavioral attitudes, socialization, and perceptions.

Keywords: Union commitment, Formal union participation, Female academics

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Abstract No: ABM 06 Accounting, Business and Management

Board composition and corporate reporting on Internet: Evidence from Sri Lanka

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Web-based corporate disclosures are becoming increasingly popular among businesses since Corporate Internet Reporting (CIR) allows for timely reporting, customization of financial reporting, reaching a broader audience, and reducing information asymmetry. As a result, the phenomenon of CIR has been widely accepted in recent scholarly works; however, the majority of studies in this area have focused on the economic aspects of CIR, and only a minority have considered the impact of corporate mechanisms like board characteristics in developing countries, especially Sri Lanka. This paper aims to investigate the connection between board composition and CIR practices in Sri Lanka, employing secondary data gathered from the websites of 97 sample companies in 2022. The dependent variable is CIR, which is evaluated using a comprehensive index containing 35 items pertaining to the primary aspects of content and presentation, and the independent variable is board composition, which includes board size, board independence, CEO duality, board meetings, and board gender diversity. The results of a regression analysis indicate that board size, board independence, and CEO duality positively correlate with CIR. This study implies that Sri Lankan regulatory bodies and policymakers must take action to promote such reporting practices. This study expands on earlier CIR research by showcasing the efficiency of corporate governance systems, particularly board features, in adopting internet reporting practices for Sri Lankan companies. The study has focused on one aspect of corporate governance mechanisms, namely the characteristics of boards. Future research may investigate the influence of ownership structure and financial transparency on CIR practices. Moreover, future studies can investigate Sri Lanka's cultural, legal, and economic conditions impact CIR practices.

Keywords: Board characteristics, Corporate governance, Corporate internet reporting

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Abstract No: ABM 07 Accounting, Business and Management

Board of directors' effectiveness and firm performance of Sri Lankan listed companies – A partial least squares structural equation modeling approach

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The ongoing discourse on the connection between the effective board of directors and firm performance will remain to be an important area of research study for a very long time. In addition, despite the vast amount of research conducted on the relationship between individual characteristics of the board members and firm performance, there are few studies that concentrate on the characteristics of the entire board as a single variable. This paper investigates the empirical study of the relationship between the effectiveness of the board of directors and the firm performance of listed companies in Sri Lanka. The study employed a panel data approach over a five-year period from 2018 to 2022 with a sample of 100 companies listed on the Colombo Stock Exchange. It has two latent variables: Effectiveness of the board of directors as an independent variable with four indicators (board size, board independence, board meeting, and board gender diversity), and firm performance of the firm as a dependent variable with two indicators (return on assets and return on equity). Partial Least Squares Structural Equation Modelling (PLS-SEM) was used to analyze the data. Empirical results demonstrate that an effective board is positively associated with firm performance. The findings are crucial for stakeholders, policymakers, and regulatory bodies to increase the efficacy of their board of directors and boost Sri Lankan companies' performance. This study contributes to the existing literature by investigating for the first time, using the PLS-SEM, the relationship between the effectiveness of a board of directors and the firm performance of Sri Lankan companies. Future studies can use the moderating variable between these variables.

Keywords: Effective board of directors, Firm performance, Partial least squares, Structural equation modelling

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Abstract No: ABM 08 Accounting, Business and Management

An exploratory study of humble leadership and innovation practices on human resources management

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Humble leadership emphasizes the importance of self-awareness, humility, and a focus on the needs of others, while innovation involves the introduction of new ideas, products, or processes that improve organizational performance. The combination of these two approaches lead to a positive work culture that promotes trust, collaboration, open communication, and development of new practices and processes that can improve talent management, recruitment, training and development, and performance management. The objective of the study is to explore the key characteristics of humble leadership and how they relate to innovative human resources practices and examine the relationship between humble leadership, innovation, and human resources practices. The study tried to fulfill the research gap in the area of humble leadership and innovation practices and its overall impact on human resources practices. The study primarily employs both qualitative and quantitative methods to gain a nuanced understanding of how humble leadership behaviors impact innovation within human resources management. Using a qualitative research design, this study draws data from in-depth interviews with human resources professionals across diverse industries. Quantitative data were collected from three tech-giants -Apple Inc, IBM Inc. & Microsoft Inc. In this study we have considered humble leadership as independent variable and innovative human resources practices as dependent variable. Qualitative data has been analyzed using content analysis. Thematic writing was included in this area. The findings suggest that the impact of humble leadership and innovation can be significant in improved organizational performance, employee engagement, and competitive advantage. The quantitative data analysis reveals that there is a very strong correlation between research and development costs with Return on Assets, Return on Equity & Net Profit After tax separately and as well as holistic way of the selected three global multinationals tech giants of the world. This finding implies that if a company encourages humble leadership and innovation, its valuable human resources might outperform and enhance the overall financial performance continuously.

Keywords: Leadership, Innovation practices, Human resources management, Organizational performance

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Abstract No: ABM 09 Accounting, Business and Management

Inclusive Financing Digital Financial Services (DFS) in Bangladesh and The Case of bKash

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Financial inclusion (Bright Helms, CGAP, 2006) refers to the accessibility and availability of a range of financial services to all individuals and businesses, regardless of their socioeconomic status. Bangladesh's had started inclusive financing in early 1970s, but institutional away Micro Finance Institutes (MFIs) was working from 1980s (Muhammad Yunus, 2007), followed by the advent of Digital Financial Services (DFS) in 2011 (Impact of Mobile Financial Service in Bangladesh, The Case Study, BIDS, 2020), which was earlier known as MFS and Agent Banking in 2013. These services are regulated by the central bank of Bangladesh. This study will deal with three research problems and gaps, firstly, why MFIs digitization process is not working first; secondly, why interoperability is not growing firster between MFIs, MFS and Agent Bank, examine existing policy and reality; thirdly, the study aims to analyze the operational and financial performance of the DFS sector and a case of bKash. The core methodology will be followed case study and ethnography i.e., qualitative. Case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clear, (Yin, 2009). To understand inclusive financing i.e., macro, and micro both sides. The result of the study will help to create three impacts, firstly, to reduce financial exclusion and provide banking services to the unbanked population; secondly, to enhance the knowledge of rural financial landscape for interpretability among the inclusive financial service; thirdly, it will create new knowledge and best practice case of Inclusive financing. This study contributes, to ensures interoperability and digital Bank (MFIs, MFS or DFS, Agent Banking) i.e., breezing rural financial architecture and mainstream banking. To achieve the national goals, cashless society in Bangladesh. This study will be useful for DFS operators, regulators, policy makers and academic.

Keywords: Inclusive Financing, MFI, DFS), Agent Baking, Rural Financial Architecture, Interoperability, bKash and Cashless Society

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Science, Technology, Mathematics and Medicine

Abstract No: STMM 01 Science, Technology, Mathematics and Medicine

Activated carbon derived from peel waste of *Citrus madurensis* for removal of Pb (II) in aqueous solutions

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Among the techniques used in contaminant removal in water, adsorption by activated carbon (AC) has been identified as an efficient method. Therefore, this study aimed to investigate the effectiveness of utilizing Calamondin (*Citrus madurensis)* peel as a precursor for producing AC that can be used to remove Pb (II) ions from aqueous solutions. First cleaned and dried peel waste powder sample of Calamondin (10.00 g) was carbonized at 400 °C for 120 minutes and activated chemically with dil. H_3PO_4 (0.01 M, 100 mL). The prepared AC was characterized by SEM/EDAX, FT-IR, and proximate analysis. The effects of initial Pb (II) concentration (1 to 5 ppm), adsorbent dosage (0.01 to 0.05 g,) and shaking time (20 to 120 min,) on Pb (II) adsorption onto AC were evaluated by varying the process parameters at room temperature (30±2 °C) and at pH = 7. The residual Pb (II) content in each sample after treatment with AC was determined by AAS. All experiments were duplicated and results were reported as mean±standard deviation. The proximate composition of AC was found to be 48.61% ash, 8.71% moisture, 11.65% volatile matter, and 31.03% fixed carbon content. The prominent bands of the IR spectrum of AC correspond to O–H, -CH, and C=O stretching vibrations. Compared to raw material, AC had a more porous structure with an average pore diameter of 2.0 µm. Based on the results, the highest removal percentage of Pb (II) (98%) was observed at the initial concentration of Pb (II) 5 ppm, the adsorbent dosage of 0.03 g, and the shaking time of 20 minutes. Further, the equilibrium adsorption data were analyzed by the Langmuir and the Freundlich isotherm models and the equilibrium data were best fitted with the Langmuir isotherm model with R^2=0.91. The maximum adsorption capacity (q_0) of the AC was 10.63 mg g^{-1} with a residual Pb(II) concentration ranging from 0.02 mg L^{-1} to 0.14 mg L^{-1}. These findings suggest that the AC produced from *Citrus madurensis* is a cost-effective and eco-friendly solution for removing Pb (II) from wastewater.

Keywords: Activated carbon, Adsorption, Isotherms, Pb (II) removal

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Abstract No: STMM 02 Science, Technology, Mathematics and Medicine

Identifying essential procedural skills and competencies in Sri Lankan undergraduate medical curricula

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Medical students need to acquire certain procedural skills to function effectively upon graduation. However, there is no agreement on the procedural skills that should be mastered. The level of competency required for any skill varies between different medical schools and the supervising consultants. The aim of this study was to identify core procedural skills competencies for Sri Lankan medical students. A three-round, online modified Delphi survey was used to identify consensus on competencies of procedural skills for graduating medical students in Sri Lanka. In Round 1, an initial structured questionnaire was developed using content identified from the literature and current logbooks. 17 clinician experts involved in both supervision of intern medical officers and teaching of medical students rated their agreement on 70 procedural skills. In Round 2, experts re-appraised the importance of skills and rated the level of procedural competency (i.e., Observer, Novice, Competent, Proficient) expected for each skill upon graduation. In Round 3, experts re-appraised the procedural competency, achieving consensus. Consensus, defined as > 75% agreement, was established with 36 procedural skills across eight categories with the highest level of agreement for blood transfusion, handwashing, and surgical scrub, gown and gloving. Several common procedures that medical students were expected to be proficient by graduation were negated by the expert panel. The findings from the Delphi study provide critical information about procedural training for Sri Lankan medical students. The study findings demonstrate the importance of restructuring the current undergraduate procedural curricula to produce doctors capable of effective delivery of patient care in the near future.

Keywords: Competency, Medical students, Procedural skills

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Abstract No: STMM 03 Science, Technology, Mathematics and Medicine

Epidemiology of child leprosy in Sri Lanka

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Percentage of child leprosy cases in a country is a proxy indicator for the transmissibility of the disease and shows the effectiveness of the control programs. Even though Sri Lanka has eliminated leprosy as a public health problem in 1995, the percentage of child leprosy cases has been found to be high (around 10%) and static for the past two decades. Hence, it is of important to know the epidemiology of the child leprosy for planning successful control activities. Objective of the study was to evaluate the epidemiology of child leprosy for the past two decades in Sri Lanka. Anti Leprosy Campaign (ALC) national database was used to identify the child leprosy patients from 2000 to 2019. Results were present in percentages. A total of 39,276 leprosy patient entries were identified. Among them, 3,938 (10%) were children. After removing the missing values, 3,697 child patient data were analyzed. Fifty four percent were male and majority (54%) were in the age group of 10 to 14 years. Fifty percent of the children were detected from the western province and 27% were reported from the Colombo district. Higher proportion of children were Sinhalese and 81% of children were found to have Paucibacillary leprosy which is noninfectious. Out of the total child cases 7% had disabilities at the time of starting the treatments and 1.7% had Grade two disabilities. Majority (54%) of the child leprosy patients had no delay in diagnosing in Sri Lanka. However, 12% were correctly diagnosed two years after the initial symptoms and another 12% were diagnosed after one year. Western province has to be targeted in planning preventive programs. Awareness programs has to be conducted to minimize the delay in diagnosing the child leprosy patients as it will minimize the development of disabilities.

Key wards: Child leprosy, Epidemiology

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Abstract No: STMM 04 Science, Technology, Mathematics and Medicine

Comparison of Quality of Life of Cancer Patients on Palliative Care in Hospice Centers Versus at Home

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Effective delivery of palliative care can improve the quality of life of patients and their families facing challenges associated with life-threatening illnesses like cancers. The setting of care is also an important factor that influence the quality of life of cancer patients on palliative care. This was a cross-sectional study with descriptive and analytical components conducted to describe and compare the quality of life of cancer patients on palliative care in hospice centers and at home. Component one was to describe the quality of life of cancer patients on palliative care in hospice centers and at home. In the component two, the quality of life of cancer patients in those two settings were compared. For the component one, 58 patients were included from the hospice setting while 76 patients were included from home setting. For the component two 54 patients were included from each group. Quality of life was determined by using the validated quality of life assessment tool for cancer patients named 'EORTC QLQ-C30'. Descriptive and analytical statistics were used after the data was analyzed using SPSS for Windows. Significance level was set at 0.05. In hospice setting physical functioning score was 45.1 and at home setting it was 51.9. In hospice setting cognitive score mean was 54 and at home setting it was 76.5. At home setting role, emotional, cognitive and social functioning score were higher than hospice setting. At home setting, the mean global health status/QoL score is comparatively higher than the mean for hospice setting. This study revealed that there was a statistically significant difference of quality of life between cancer patients on palliative care in hospice centers compared to the home setting, with a higher quality of life among the patients taken care at home.

Key words: At home setting, Cancer, Hospice centers, Palliative care, Quality of life

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Abstract No: STMM 05 Science, Technology, Mathematics and Medicine

Development of a Delphi survey questionnaire to identify core procedural competencies for undergraduate medical curricula in Sri Lanka

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The Delphi technique, a well-recognized research method that combines both quantitative and qualitative approaches, is used to arrive at group consensus across a range of subject areas. This method is used in academic medicine to arrive at a consensus with regard to developing and modifying curricula. In the absence of a national undergraduate curriculum, there is a lack of specificity as to which skills a graduate doctor should be equipped with to perform successfully during the internship and the level of competency required for a specific skill. Thus, a modified Delphi questionnaire was developed to identify the core procedural competencies required of a medical graduate. For this purpose, GMC guidelines on practical skills and procedures, competency-based medical education guidelines, current procedural curricula, and student logbooks were reviewed for the inclusion of items to the questionnaire. Existing literature on procedural skills was searched using key words and phrases such as procedural skills competency, curricula, medical students, and Boolean combinations. Databases searched included PubMed, MEDLINE, Scopus, and Web of Science. From this material, a core list of procedural skills that might be considered essential for the preparation of future graduate doctors was prepared. The list comprised of 64 procedural skills across nine categories: cardiovascular, respiratory, gastrointestinal, surgical, women's health, urogenital, injections/ intravenous, trauma, and diagnostic/ measurement procedures. The subsequent Delphi survey with clinician educators achieved consensus on 25 core procedural competencies for undergraduate medical curricula in Sri Lanka. Formal integration of procedural training into undergraduate medical curricula and assessment of core procedural competencies as an exit qualification are recommended to ensure that future patients are under the care of competent physicians.

Key words: Competency, Consensus, Medical student, Procedural skills

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Abstract No: STMM 06 Science, Technology, Mathematics and Medicine

Assessing the antioxidative potential of lactic acid bacteria inhabiting tender coconut water

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Probiotics are renowned for their beneficial impact on human health and for their antioxidative properties. Lactic acid bacteria (LAB), which constitute a major group within probiotics, have been recognized for their ability to act as potent antioxidants and reduce oxidative stress in the host. This study aims to evaluate the antioxidative activity of probiotic LAB inhabiting the tender coconut water samples collected from different regions of Sri Lanka. In a previous study, analysis of the collected tender coconut samples resulted in the identification of four potential probiotic strains at the species level: *Lactiplantibacillus plantarum* CWJ3, *Lacticaseibacillus rhamnosus* CWKu12, *Lacticaseibacillus paracasei* CWKu14, and *Lacticaseibacillus casei* CWM15. The antioxidative activities of these strains were evaluated using four different chemical antioxidant assays: the 2,2-diphenyl-1-picrylhydrazyl (DPPH) assay at 517 nm, the 2,2′-azino-bis(3-ethylbenzothiazoline-6-sulfonic acid) (ABTS) assay at 734 nm, the ferric reducing antioxidant power (FRAP) assay at 593 nm, and the total phenolic content (TPC) assay at 765 nm through spectrophotometric method. Three different concentrations of each bacterial strain (10^7, 10^8, and 10^9 CFU mL^{-1}) were prepared using overnight grown cultures in deMan, Rogosa, and Sharpe broth at 37 °C, included in the study. The results indicate a significant increase ($p < 0.05$) in antioxidative activity for all four strains across all analyzed methods with the increase in cell concentration. *Lactiplantibacillus plantarum* CWJ3 exhibited the highest antioxidative potential at 10^9 CFU mL^{-1}, with 88.85±0.84% radical scavenging activity in the DPPH assay, 84.0±0.14% radical scavenging activity in the ABTS assay, 0.029±0.004 mg mL^{-1} ascorbic acid equivalent in the FRAP assay, and 0.0052±0.0006 mg mL^{-1} gallic acid equivalent in the TPC assay. Conversely, *Lacticaseibacillus paracasei* CWKu14 demonstrated the lowest values for all antioxidative activities. Continued research on the antioxidative properties of probiotic LAB derived from tender coconut water holds promising prospects for the development of functional beverages.

Keywords: Antioxidative activity, Lactic acid bacteria, Probiotics, Tender coconut water

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Abstract No: STMM 07 Science, Technology, Mathematics and Medicine

CRISPR/cas9 mediated gene knockout in mosquito vector *Aedes aegypti*: *In-silico* approach

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Aedes aegypti is the principal vector of several viruses including Dengue, Chikungunya and yellow fever. The recent advent of Clustered-Regularly-Interspaced-Short-Palindromic-Repeats (CRISPR)-Cas9 has sparked significant enthusiasm for the genetic control of *A. aegypti*. In the current study, we hypothesized that CRISPR-cas9 mediated gene knockout of doublesex *(Aedsx*) and Actin-4 (*AeAct-4)* in *A. aegypti* would result in sterile intersex phenotype and flightless phenotype respectively in females. Designing effective sgRNA is the most critical part of CRISPR/Cas9 editing. Therefore, sgRNAs were designed *in-silico* with the aim of developing efficient measures to control *A. aegypti* populations. Gene sequences of *Aedsx* (IAAEL009114) and *AeAct-4* (AAEL001951) were retrieved from sequence data available in the VectorBase database. BLASTP was performed in searching for paralogs. Phylogenetic analysis was performed for all paralogs with ≥80% amino acid similarity. Eight paralogs were identified for *the AeAct-4* while none was identified for *Aedsx.* DNA sequences for the paralogs of *AeAct-4* were aligned to identify targets for sgRNAs that were unique to *AeAct-4.* Exon 2 was selected for *AeAct-4*, as the target site. For the *Aedsx* gene, 5a and 5b female-specific exons were selected as the target sequence for *AedsxF1* and *AedsxF2* isoforms respectively. sgRNAs were designed using online tools CHOP CHOP and CRISPR guide express. Two sgRNAs for each *AeAct-4* gene, *AedsxF1* and *AedsxF2* isoforms with minimum off-target effects and *in-silico* predicted efficiency > 60% were selected to maximise the on-target gene knockout *in-vivo.* The efficiency of gene knockout can be evaluated by microinjecting synthesized sgRNAs directly into mosquito embryos with Cas9protein.

Keywords: *Aedes aegypti*, CRISPR/Cas9, Population suppression, sgRNA

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Abstract No: STMM 08 Science, Technology, Mathematics and Medicine

Teaching CAD/CAM tools through Project- Based Learning at undergraduate level

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Project-Based Learning (PBL) is a powerful educational approach that promotes creative problem-solving skills through structured activities. This paper presents a study investigating the effectiveness of PBL in improving student performance and engagement in computer-aided drafting (CAD) modules within engineering education. Traditional instructional methods often fail to engage students effectively, leading to low attendance rates, limited engagement, and poor academic performance. This study addresses these challenges by implementing PBL and evaluating its impact on motivation and performance. The research focused on 50 civil engineering students who participated in a PBL approach using an educational version of AutoCAD, a computer- aided drafting tool. The PBL module consisted of a comprehensive introduction to the AutoCAD user interface and operating procedures, followed by individual mechanical components divided into sub-stages. The progress of student groups was monitored and evaluated weekly, using a rubric to assess performance and engagement. The results demonstrated significant improvements in student performance and engagement through the implementation of PBL. The PBL group achieved higher average scores (72%) compared to the traditionally instructed group (65%). Moreover, the PBL group exhibited a higher attendance rate (85%) compared to the traditionally instructed group (75%). Evaluation using the rubric consistently indicated that the PBL group demonstrated stronger problem-solving and collaboration skills, indicating higher levels of engagement. These findings highlight the positive impact of PBL on learning outcomes in CAD modules within mechanical engineering education. The hands-on and industry-relevant nature of PBL activities likely contributed to increased motivation and active participation among students.

Keywords: Project Computer Aided Drafting (CAD), Problem Solving, Project-Based Learning (PBL), Student Engagement, Student Performance

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Abstract No: STMM 09 Science, Technology, Mathematics and Medicine

Current status of public procurement in health sector, Sri Lanka and its possible adoption of sustainability and green concepts: survey based

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In Sri Lanka, the procurement guidelines 2006 introduced by the National Procurement Agency (NPA) are to be followed by all public procurement Entities (PE), for purchasing goods, works or services. In the year 2019, The Ministry of Environment of Sri Lanka published a national policy on sustainable consumption and production for Sri Lanka and two sections relevant to public procurement. According to the said policy document, the Ministry of Health should ensure sustainable consumption practices at all levels in the health sector and institutions to be transformed into green work settings by 2030. Further it is suggested to apply sustainable public procurement practices (SPP) in all relevant sectors and for each product with a significant impact. SPP concept has not been defined in public procurement in Sri Lanka and no study has been conducted. For this study, a sample of 47 different professionals working attached to the Ministry of Health, Sri Lanka participated, and data was collected using a questionnaire. According to the feedback, the majority (38.3 %) agreed that there is no mechanism to evaluate the Value for Money to measure the economic gain of procurement in the health sector, 78.7 % don't prepare Social Impact Analysis report and 74.5% don't prepare Environmental Impact Analysis. 60% of the participants agreed that the present procurement process to be improved with new green and sustainable concepts. In 2014, the European Union (EU) has adopted a new directive on public procurement (2014/24/EU) for Green and ethical procurement. The purpose of this study is to promote public procurement as a tool to achieve better health outcomes in Sri Lanka.

Keywords: Concepts in Sustainable Public Procurement, Green Procurement (GPP) in EU, Procurement System status in Sri Lanka, Public Procurement in the Health sector- Sri Lanka

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Abstract No: STMM 10 Science, Technology, Mathematics and Medicine

The Non-Saccharomyces Microflora Inhabiting Sri Lankan Grapes for Wine Fermentation: An Unveiled Physiochemical Characteristic and Fermentation Dynamics

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Wine microbial consortium (WMC) plays a significant role in wine fermentation and the final sensorial properties of wine. Modern wines are produced by inoculated fermentation, resulting in predictable sensory properties and consistency in quality. To avoid this, controlled mixtures of unconventional yeast inhabiting the grape microbiota are used in wine fermentation. However, still there is no indigenous Sri Lankan wine starter culture to be used in local production. Therefore, this attempt is to isolate efficient yeast wild types from Sri Lankan grape varieties and to correlate their microbial fingerprints to the sensorial characteristics of wine. Grape samples (Israel blue) were collected from vineyards in the Northern Province and microbes were isolated from grape skin and different fermenting stages of must. Three different strains of yeast were isolated and they were identified as *Hanseniaspora guilliermondii*, *Starmerella bacillaris*, and *Hanseniaspora uvarum* by sequencing of ITS region. The identified yeast monocultures were inoculated into surface sterilized grapes must as starter cultures and kept for 14 days for fermentation. Then physicochemical characteristics of wine samples were analyzed by High-Performance Liquid Chromatography (HPLC). Comparably, *H. guilliermondii* doesn't have the ability to survive at a high alcoholic level. It is the lowest alcohol producer (6.73%) while *H. uvarum* and *S. bacillaris* were able to survive in high alcoholic conditions as they are significantly ($p<0.05$) the highest alcohol producers. *H. guilliermondii* showed a high level of acetic acid (23.4 ± 0.01 g/L) compared to others while *S. bacillaris* showed a low level of acetic acid, 4.8 ± 0.03 g/L. Furthermore, *H. guilliermondii* expressed a shorter half-life time (2.29) and the highest growth rate, while *H. uvarum* expressed a longer half-life time (3.34), and the lowest growth rate. Overall, *H. uvarum* indicated a competitive advantage in wine production compared to other isolates.

Keywords: Fermentation, *H. uvarum*, Indigenous, Non-saccharomyces, Wine

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Abstract No: STMM 11 Science, Technology, Mathematics and Medicine

Innovative approach to COVID-19 vaccine registration: case study from Sri Lanka

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The Sri Lankan government initiated the vaccination program during COVID-19 pandemic in 2021. The Faculty of Medicine, University of Kelaniya, Ragama was selected as one of the vaccination locations. To manage the general public according to the availability of vaccines and human resources, a pre-registration system was promulgated. The REDCap was used to design the pre-registration system because it is a free, secure, web-based application that supports data capture for research studies. The customizable and mobile-friendly feature of REDCap forms made it easier to design the pre-registration form accessible to anyone with an internet connection and a device. In reason that more than 5500 participants registered during November 2021 to get vaccinated, the main objective of the study was to scrutinize if REDCap could be innovatively used for vaccination registration processes. The first section scrutinizes the eligibility of the participants by calculating their age according to the given birthday (Function: datediff) with the limitation of eligible participants being permitted to continue, and they could select a predefined date and a timeslot. Only a limited number of participants were allowed per timeslot each day according to the availability of the drugs and human resources, hence, the predefined timeslots were blocked when the registration limit exceeded (Action: MAXCHOICE). Once the available dates and times were confirmed, the general public could register for the vaccine by providing their name, address, contact details and other necessary information. Prior to the final data submission, registrants were given an opportunity to check whether their information was correct, including the date and time of vaccination. Post data submission, registrants received a confirmation email with a registration number (Action: CALCTEXT) to be presented to the vaccination center. The facility of using different functions and action-tags to control data entry and the ability to view a summary before final submission made REDCap form a success.

Keywords: COVID-19 vaccine registration, Patient registration, REDCap forms

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Abstract No: STMM 12 Science, Technology, Mathematics and Medicine

Imaging of anatomical variations of the kidney: A pictorial essay

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There are congenital anomalies related to the human urinary system. Imaging plays a crucial role in the early diagnosis, signifying patient management. This pictorial essay aims to provide image findings of cases encountered within six months from 01.02.2023 conducted at Leesons Hospital, Ragama.

Case 01: Unilateral renal agenesis-A 40-year-old female was investigated for chronic abdominal pain. Her past medical and surgical histories and routine biochemical and haematological investigations were unremarkable. An ultrasound scan of abdomen (USS-A) revealed the absence of the left kidney in the usual position. It was confirmed by contrast-enhanced CT scan of abdomen (CECT-A) and diagnosed as congenital absence of left kidney. **Case 02: Crossed-fused ectopia-**A 35-year-old female was imaged due to chronic non-specific abdominal pain. She is otherwise normal clinically and biochemically. Her USS-A showed the absence of the right kidney. Yet, it was detected in the left hypochondrium, combined with left kidney. CT-IVU confirmed that the upper pole of crossed right kidney has fused with the lower pole of the left kidney. Both kidneys showed malrotation. **Case 03: Horseshoe kidney-**A 37-year-old female was investigated for suspected left-sided ureteric calculus. USS-A showed poorly defined lower poles in both kidneys. CT-KUB confirmed the diagnosis of horseshoe kidney. **Case 04: Ectopic kidney-**A 42-year-old male was investigated for suspected right-sided ureteric calculus. USS-A did not show the right kidney in the usual position but detected at the right iliac fossa and confirmed by CT-IVU. Yet, the right ureter opened at the normal position in the bladder. Also, the patient had a minimal degree of right-sided pelvic-ureteric junction obstruction.

Many anatomical variations of the kidney are detected in ultrasonography and are confirmed by CECT-A. Knowing the nature of variations is essential in the further management of these patients, in particular surgically.

Keywords: Crossed fused ectopia, Ectopic kidney, Horseshoe kidney, Renal aplasia

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Abstract No: STMM 13 Science, Technology, Mathematics and Medicine

Evaluation of *in vitro* antibacterial efficacy of biogenic Ag-ZnO nanocomposites synthesized utilizing Suprema F1 agro-waste

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This study investigated the antimicrobial properties of Ag-ZnO nanocomposites (NCs) synthesized from agro-waste derived from the Suprema F1 pumpkin variety, including peels, seeds, and leaves. The current study aimed to evaluate the antibacterial activity of pumpkin agro-waste-mediated Ag-ZnO NCs, targeting drug-resistant pathogens. Aqueous agro-waste-mediated Ag-ZnO NCs were synthesized under various optimization conditions and characterized under UV-vis spectroscopy, FTIR, SEM, TEM, and XRD analysis. The antibacterial effectiveness of biogenic AgNPs, ZnO NPs, and Ag-ZnO NCs with various concentrations (500 ppm, 1000 pm, 2000 ppm) was evaluated and compared against *Escherichia coli* and *Staphylococcus aureus*. The positive controls used for comparison were Azithromycin and Tetracycline, respectively (2000 ppm: 100 µL). The formation of Ag-ZnO NCs was identified through surface plasmon resonance peaks ranging from 350-450 nm. SEM analysis confirmed the successful synthesis of Ag-ZnO NCs by showing spherical AgNPs aggregating on the ZnO surface. TEM analysis unveiled that the particle size distribution of the NMs ranged between 20 and 210 nm. XRD analysis indicated a hexagonal wurtzite structure observed for pure ZnO NPs and a face-centered structure for AgNPs. The antibacterial activity of NMs exhibited an increasing trend with AgNPs > Ag-ZnO NCs > ZnO NPs. The largest inhibition zones observed for seed-mediated AgNPs (2000 ppm: 100 µL) against *E. coli* and *S. aureus* were 20 mm, while for Ag-ZnO NCs, the values were 17 mm and 19 mm, respectively. Regarding the inhibitory effects of ZnO NPs, it was observed that leaf-mediated ZnO NPs (2000 ppm: 100 µL) displayed the greatest inhibition zones, with 14 mm against both bacterial strains. The ability of growth inhibition against *S. aureus* was insignificant ($p \geq 0.05$) between seed and leaf-mediated AgNPs and Ag-ZnO NCs. There were insignificant differences ($p \leq 0.05$) between leaf-mediated AgNPs and Ag-ZnO NCs. Azithromycin and Tetracycline (2000 ppm: 100 µL) exhibited growth inhibition of 35 mm against *E. coli* and 50 mm against *S. aureus*, respectively. These findings emphasize that NMs derived from pumpkin agro-waste demonstrated substantial antibacterial effects.

Keywords: Agro-waste, Ag-ZnO nanocomposite, Antibacterial activity, Biogenic, Suprema F1

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Abstract No: STMM 14 Science, Technology, Mathematics and Medicine

Prevalence of *Mycobacterium tuberculosis* among a selected group of Sri Lankan patients: A meta data analysis

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Mycobacterium tuberculosis (MTB) is the bacterium responsible for tuberculosis (TB), a chronic airborne disease in humans. In Sri Lanka, TB incidence has remained static, emphasizing its ongoing public health concern. Rapid diagnosis and treatment, using conventional and molecular techniques, are vital in preventing TB transmission. This study aims to investigate the prevalence of MTB among a selected group of Sri Lankan patients by applying data mining techniques to a dataset comprising 160 TB samples from three research articles published between 2020 and 2023. A systematic data mining approach was employed to identify relevant research articles reporting the prevalence of MTB in Sri Lankan patients, employing both molecular and conventional methods. After carefully screening the articles (from Google scholar) based on predefined criteria, three studies were selected for inclusion. These studies provided data on a total of 160 TB samples, which were subsequently analyzed to determine the prevalence of MTB. Among the 160 TB samples analyzed, 48 (30%) were found positive for MTB. The individual studies reported prevalence rates ranging from 25% to 35%. An analysis of the positive cases revealed diverse age distributions, with the highest prevalence observed among individuals aged between 25-44 years. Gender-wise, there was a relatively balanced distribution, with 52% of positive cases being male and 48% female. The prevalence of MTB infection among the selected group of Sri Lankan patients was found to be 30% based on the analysis of 160 TB samples. These findings emphasize the ongoing burden of TB in Sri Lanka and underscore the importance of early detection and intervention strategies.

Keywords: Molecular based detection, *Mycobacterium tuberculosis*, Prevalence, Sri Lanka

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Abstract No: STMM 15 Science, Technology, Mathematics and Medicine

Safety evaluation of Lokanatha Rasa, an ayurveda mercurial preparation, using Wistar rats

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Mercury is a toxic, heavy metal that can cause serious and lasting health problems for humans and the environment. Rasa Shastra in Ayurveda uses mercury as its chief ingredient and Lokanatha Rasa (LKN) is one such preparation referenced in traditional Ayurveda texts. It is prescribed to treat liver and spleen disorders. There are numerous arguments regarding mercury based preparations at present. This study aimed to evaluate the effect of LKN on body organs. This animal study compared 36 male and female Wistar rats. Since the human dosage of LKN is 250mg per day, the equivalent dose range for rats according to their weight (15mg/kg,45mg/kg 60mg/kg, and 90mg/kg) was delivered to the test animals by oral gavage while water was given to the controls for 90 consecutive days. The hematological, histological and biochemical parameters were assessed. The generated data was statistically analyzed using SPSS version 26.0. The hematological parameters (total WBC, neutrophil%, lymphocyte%, monocyte%, eosinophil%, basophil%, hemoglobin, RBC, Mean cell volume, hematocrit%, mean cell hemoglobin, MCHC, red cell distribution width, platelet count) and biochemical parameters (fasting serum glucose concentration, liver enzymes [AST, ALT, γ-GT, ALP], renal enzymes [total protein, creatinine, urea], lipid profile parameters [TC, HDL-C, TG, LDL-C, VLDL-C]) did not differ significantly ($p>0.05$) between the test and control groups. Histopathology of the liver, kidney, spleen, lung, and intestinal tissues of the test group also did not differ significantly from the control group ($p>0.05$). Selected vital tissues were observed in all the treatment groups and no signs of hemorrhage, inflammatory cell infiltration, or necrosis were observed. The current study's findings demonstrate that the mercurial-based LKN administered for consecutive 90 days did not cause any toxicological changes in the liver, kidney, spleen, intestines, or lungs.

Keywords: Hematological and biochemical parameters, Histopathology, Lokanatha Rasa, Mercurial preparation

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Abstract No: STMM 16 Science, Technology, Mathematics and Medicine

Biochemical analysis of a novel Kefir-Based fortified food supplement

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The purpose of this study was to develop a kefir-based pasteurized milk-incorporated food supplement enriched with fruits and spices. Kefir is a renowned fermented probiotic with the ability to improve gut microflora. Analysis was done for fruit mixture (Ambon banana (*Musa acuminata*) 60.24%, kilo white guava (*Psidium guajava*) 30.12%, passion fruit (*Passiflora edulis*) 6.02%, curry leaves (*Murraya koenigii*) 1.81%, powdered cinnamon (*Cinnamomum verum*) 0.60%, powdered turmeric (*Curcuma longa*) 0.60% and powdered black pepper (*Piper nigrum*) 0.60%) incorporated with kefir based pasteurised milk. This study aimed to enhance human dietary modulation of gut microflora activity and to evaluate the proximate composition, antioxidant ability, total phenolic content and reducing sugar content in the final product. The proximate analysis was conducted using AOAC methods. Folin – Ciocalteu's method was used to determine the total phenol content. Total antioxidant capacity was measured using the ferric reducing antioxidant power assay (FRAP assay). The proximate composition of the food supplement was water % (15.97), ash % (23.81), protein % (0.67), fat % (3.25), and carbohydrate % (56.30). When compared with other kefir-based fortified milk in literature, there was no substantial difference concerning fat content, protein content and total reducing sugar content except for ash and water contents. Ash content was higher and water content was lower in the final product than the reported values in the literature. When considering the physicochemical properties of the final product; total phenolic content, total antioxidant capacity and total reducing sugar content in mg per 100 ml were 43.80 (Gallic Acid Equivalents), 4.00 (Ascorbic Acid Equivalents) and 24.04 respectively. According to the results, the total phenolic content in the final product was higher when compared with the literature. Thereby, it can be concluded this product has a higher total phenolic content than the ordinary pasteurized cow milk as it has been incorporated with Ambon banana, kilo white guava, passion fruit, curry leaves, powdered cinnamon, powdered turmeric, and powdered black pepper.

Keywords: Cow milk, Kefir, Novel food supplement, Total antioxidants content, Total phenolic content

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Abstract No: STMM 17 Science, Technology, Mathematics and Medicine

Quantification of total phenolics in flowers of selected *Phalaenopsis* cultivars

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Floral phenolics are correlated with the senescence of the flowers. The excessive production of reactive oxygen species (ROS) damages the cells and accelerates senescence. These phenolics have been reported to assist in the mitigation of the effect of ROS by scavenging the free radicals. Flowers with delayed senescence are reported to display higher phenolic content. Hence, cultivars with high phenolic content can be used as parental cultivars in breeding programs to produce novel cultivars with delayed senescence. *Phalaenopsis* is a top-traded genus in the family Orchidaceae. The flower phenolic content can be determined as an important vegetative trait for the selection process. Hence in this study, the phenolic content of 6 *Phalaenopsis* cultivars, (*Phalaenopsis* cv. Shu Long 'F89322', *Phalaenopsis* cv. 1759, *Phalaenopsis* cv. Sogo Yukidian V3, *Phalaenopsis* cv. Queen Beer 'Mantefon', *Phalaenopsis* cv. Taipei Gold 'Gold Star', *Phalaenopsis* cv. Brother Strips) with different colors at the same developmental stage was analysed to compare their phenolic content. The complete flowers of each cultivar were dried at -80 ºC and powdered by using a mortar and pestle. A known amount (500 mg) of powder was mixed with a known amount (5 mL) of acidified methanol and centrifuged. The supernatant was subjected to the Folin-Ciocalteu method to assess the total phenolic content. The phenolic content was expressed as Gallic acid equivalent (GAE) per mg of dry weight. According to the results, the total phenolic contents of *Phalaenopsis* cv. Shu Long 'F89322', *Phalaenopsis* cv. 1759, *Phalaenopsis* cv. Sogo Yukidian V3, *Phalaenopsis* cv. Queen Beer 'Mantefon', *Phalaenopsis* cv. Taipei Gold 'Gold Star' and *Phalaenopsis* cv. Brother Strips were 2.170 mg GAE.g^{-1}, 0.997 mg GAE.g^{-1}, 0.789 mg GAE.g^{-1}, 2.418 mg GAE.g^{-1}, 3.342 mg GAE.g^{-1} 0.833 mg GAE.g^{-1} respectively. Among the selected cultivars, *Phalaenopsis* cv. Taipei Gold 'Gold Star' has shown the highest phenolic content. Hence, it can be recommended as a suitable parental cultivar for future breeding programs as it would facilitate developing novel cultivars with long shelf life.

Keywords: Folin-Ciocalteu method, *Phalaenopsis* cultivar, Phenolics, Reactive oxygen species

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Abstract No: STMM 18 Science, Technology, Mathematics and Medicine

Imaging of anatomical variations of the ureters- A pictorial essay

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The ureter exhibits a wide range of anatomical variations, which significantly affect surgical and urological interventions. Imaging plays a crucial role in diagnosing these conditions early. This pictorial essay aims to provide image findings of selected cases encountered within six months from 01.01.2023 conducted at Leesons Hospital, Ragama.

Case 01-Pelvic-ureteric junction (PUJ) obstruction-A 36-year-old female was investigated for abdominal distension. An ultrasound scan-abdomen (USS-A) showed a large cystic mass on the left abdomen. CT-kidney, ureter, and bladder (CT-KUB) showed gross dilatation of the left renal pelvic calyceal system and the absence of dilated ureter, suggesting complete PUJ obstruction.

Case 02-Bilateral kinked ureter-A 30-year-old female was investigated for urolithiasis. CT-intravenous urogram (CT-IVU) demonstrated grade-I ureteric kinking in the right uppermost ureter and grade-II ureteric kinking in the left uppermost ureter at the level of the PUJ.

Case 03-Duplex ureter-A 39-year-old woman with urolithiasis underwent CT-IVU, revealing right-sided hydronephrosis and hydroureter caused by a lower ureteral stricture. Additionally, it revealed a left-sided duplex kidney with long partial duplex ureters merging at the S3/S4 vertebral level and continuing as a single ureter.

Case 04-Retrocaval ureter-A 49-year-old man presented with right-sided abdominal pain. USS-A revealed hydronephrosis and proximal hydroureter on the right side. CT-IVU and 3-D reconstruction also showed hydronephrosis and proximal hydroureter. The ureter beyond the hydroureteric segment took an upward and posterior course behind the inferior vena cava (IVC), then looped medially between the IVC and the aorta, resembling a "fishhook ureter." The rest of the ureter appeared normal and connected to the bladder.

Anatomical variations of the ureters are initially detected in ultrasonography and confirmed by CT KUB or CT-IVU with 3-D image reconstruction. Understanding these variations and CT findings is crucial for effective patient management and surgical interventions.

Keywords: pelvic-ureteric junction obstruction, kinked ureter, duplex ureter, fishhook ureter

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Abstract No: STMM 19 Science, Technology, Mathematics and Medicine

Anti-oxidant activity and phytochemical profile of Solanaceae species in Sri Lanka

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Plant-based drugs are gaining importance due to their high potency and fewer side effects. Therefore, there is a growing interest in natural products as an alternative to conventional medications for disease treatment. In the past year, several drugs have been developed using isolated plant species, such as plant stems, roots, and fruits. This research aims to investigate the phytochemical profile and antioxidant activity of the leaves from four different *Solanaceae* species (*S. torvum, S. violaceum, S. melongena, S. virginianum*) extracted using water and methanol. These methanol water leaves extract have shown significant medical value with reports suggesting anti-tumor and anti-cancer effects. DNA barcoding using the matK locus was assessed for routine specimen identification. However, polymorphism in the matK locus is not diverse enough to set the species limit of the genotype within *S. melongena*. And *Thiththathibbatu* (*S. violaceum*) and *Walthibbatu* (*S. pubesens*) had a similar haplotype as well. Qualitative analysis was conducted to detect phytochemicals, such as alkaloids and, flavonoids, using standard methods. Folin-ciocalteau method, aluminum chloride colorimetric method, and phosphor-molybdenum assay were employed to determine Total Phenol Content, Total Flavonoid Content, and Total Antioxidant Capacity respectively. The antibacterial activity was evaluated using the well diffusion technique against *Escherichia coli* (*E. coli*) and *Staphylococcus aureus* (*S. aureus*). Free radical scavenging activity of water and methanol extracts was determined using DPPH (2,2-Diphenyl-1-picrylhydrazyl). Correlation coefficient was calculated using TPC, TAC, and TFC data based on water and methanol samples separately. Significant differences were determined by performing t-test. Analysis in data beyond anti-bacterial activity against *E. coli* and *S. aureus* was carried out by ANOVA. Methanol extract of *S. viginianum* exhibited the highest antibacterial activity against *S. aureus*. In conclusion, methanol is more effective for extracting active phytochemicals from *Solanaceae* species. However, only a few of these species are currently cultivated locally and have yet to enter the international market.

Key words: Anti-oxidant activity, Flavonoid, IC50 value, matK, Phenolic compounds

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Abstract No: STMM 20 Science, Technology, Mathematics and Medicine

Barriers and facilitators of home-based physiotherapy programs for children with cerebral palsy as perceived by primary caregivers and physiotherapists

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Cerebral Palsy (CP) is a disorder of movement and posture, which causes activity limitations due to non-progressive disturbances of the immature brain. For children with CP, the participation of their families in home activity programs is key for successful therapy interventions. However, primary caregivers (PCs) in Sri Lanka often have difficulties accomplishing proper home-based physiotherapy programs (HBPP). This study explored barriers and facilitators of HBPP for children with CP as perceived by PCs and physiotherapists (PTs). Adopting a grounded theory approach, a qualitative descriptive study was conducted using individual interviews. Forty PCs of children with CP and ten PTs participated. The data generated were thematically analyzed using constant comparative analysis. Four major themes were identified based on the perceived barriers and facilitators of HBPP. PCG's confidence on HBPP, child's interest to do HBPP, proper PT guidance, availability of resources identified as themes under facilitators and PCG's workload, nature of the child, unsuccessful therapy sessions and lack of social support were identified as themes under barriers. The findings of this study will help reinforce the caregivers or to support them to overcome their barriers. Sharing knowledge among family members could facilitate active participation of the caregiver. Physiotherapists should develop effective teaching techniques and create PC-PT confidence. In addition, economically sustainable and accessible rehabilitation services are needed. This study contributes to the existing literature on HBPP for children with CP in Sri Lanka. The findings of this study can be used to develop interventions to improve the effectiveness of HBPP and to support caregivers in their role in providing home-based therapy.

Keywords: Cerebral palsy, Determinants, Home-based physiotherapy program, Physiotherapists, Primary care givers

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Abstract No: STMM 21 Science, Technology, Mathematics and Medicine

Expanded Graphite reinforced polystyrene composites for Li-ion battery thermal management

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Electric vehicles with improved battery pack performance are gaining increasing interest worldwide due to the global challenges of the energy crisis. As a result, compact battery pack designs with high-power densities are being developed and efficient heat removal is crucial for optimal performance. Increased cell operating temperature can lead to reduced efficiency, cell life depletion, and thermal runaway. To achieve optimum performance, one solution is to develop advanced battery modules with new cooling mechanisms, such as heat spreaders, to eliminate heat spots. The present study aims to investigate the effect on Li-ion cell operating temperature, using a composite material consisting of expanded graphite (EG) reinforced polystyrene (PS) as a cell surface cooling aid. EG was prepared by thermal expansion of intercalated natural vein graphite obtained from a Sri Lankan graphite mine at Bogala. Graphite powder was treated with a mixture of concentrated sulfuric and concentrated nitric acid for 24 hours and was then subjected to a thermal shock at 900 ℃ to prepare expanded graphite. As prepared, EG was then incorporated with dissolved polystyrene in different loadings (50%, 100%, and 200% by weight) to get the composite sheet using the solution casting technique, and the in-plane thermal conductivity of this sheet increased with increasing EG loading. A cylindrical Li-ion cell was covered with composite sheet with thickness 0.5 mm connected to a cooling block and upon charge-discharge cycle at the rate of 2 C, the surface temperature buildup was measured. It was revealed that the composite maintains the cell surface temperature less than 37 ℃, a 14% reduction compared to a cell without any heat spreading mechanism in which the surface temperature can rise to a maximum of 43 ℃. Therefore, the development of synthesized EG/PS composite sheets opens innovative pathways for enhanced thermal management in Li-ion batteries.

Keywords: Expanded graphite, Heat spreaders, Polystyrene, Thermal management

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Abstract No: STMM 22 Science, Technology, Mathematics and Medicine

Toxic metal contamination in food chains via paddy plant; A study in CKDu endemic area in North Western Province, Sri Lanka

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This study addresses the urgent need for a comprehensive risk assessment of toxic metal contamination in the food chain via paddy plants in CKDu-affected areas emphasizing the health hazards associated with the transfer of toxic metals from soil to paddy grains and evaluating the health risk of consuming rice through different risk indices. Twenty composite paddy soil samples and twenty paddy plant samples with rice grains in the exact locations were collected from paddy areas in *Nikawewa Grama Niladhari* division during the *Maha* growing cycle in 2023. The analysis of Cr, Pb, As, Cd, Ni, and Cu was conducted using inductively coupled plasma-mass spectrometry (ICP-MS). Descriptive statistics revealed the average metal concentrations in rice grains as: Cr(637.42±157.44 µg/Kg), Pb(262 ±62.35 µg/Kg), As(39.29±11.97 µg/Kg), Cd(1836±192 µg/Kg), and Cu(1567 ±466 µg/Kg). Cr, As, and Cu levels in rice grains remained within WHO/FAO and codex limits. However, average Pb and Cd levels surpassed permissible limits (Pb-200 µg/Kg, Cd- 50 µg/Kg; WHO). Nevertheless, the Target hazard quotient(THQ) values of Cr and Cd were greater than 1. The estimated Daily Intake(EDI) values of Cr(3.15 µg/Kg/Day) and Cd(9.15 µg/Kg/Day) are higher than Tolerable Daily Intake(TDI) values. The transfer factors(TF) for toxic metals in the soil-root system were determined as follows: Cr-0.069, Pb-0.30, As-0.67, Cd-0.49, Ni-0.10, Cu-0.23. Toxic metal transfer factors in the soil-root system were evaluated, indicating greater uptake by plant roots. When considering a metal transfer from roots to rice grains, Cd had a transfer factor greater than 1, indicating potential accumulation in grains, while Cr exhibited a notable increase in transfer factor compared to the soil-root system. The risk of toxic metal transfer from soil to paddy grains warrants concern due to potential human exposure and related health risks, including Chronic Kidney Disease, from the consumption of contaminated rice grains.

Keywords: Contamination, Food chain, Heavy metals, Paddy soil, Risk assessment

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Abstract No: STMM 23 Science, Technology, Mathematics and Medicine

Impact of organic farming practices on toxic metal accumulation in topsoil in paddy areas: A comparative study in Sri Lanka

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Given the increasing importance of sustainability in agriculture, this study investigates how organic farming influences soil toxicity, specifically the accumulation of toxic metals in paddy fields within the *Anamaduwa* Divisional Secretariat area. Collections of paddy soil samples were made both from an organically cultivated field and a chemically fertilized field. Twenty composite topsoil samples were collected from each paddy field according to the random sampling method. Soil quality parameters such as soil pH, conductivity, organic matter, total phosphate, potassium, ammonium nitrogen, and ash content were analyzed and toxic metal concentrations(Pb, Cd, As, Ni, and Cr) were analyzed by Inductively Coupled Plasma–Mass Spectrometry(ICP-MS). Results indicate the soil collected from paddy areas treated with chemical fertilizers has high average pH, conductivity, total phosphate content, and potassium content. The ammonium nitrogen and ash content were enhanced in the soil collected from organic land and organic content fluctuated slightly between the two areas($p>0.05$). Soil samples from the field using chemical fertilizers displayed higher average concentrations of Pb(7.15±1.57 mg/kg), As(0.87±0.17 mg/kg), Cr(20.09±4.91 mg/kg), Ni(8.58±2.51 mg/kg) compared to the organically farmed paddy field. The mean concentrations of the Pb, As, Cr, and Ni in the soil samples of the organically cultivated field were reported as 2.84±1.06 mg/kg, 0.49±0.18 mg/kg, 12.19±3.72 mg/kg, 2.72±1.58 mg/kg respectively. Statistical analysis indicates a significant difference in mean heavy metal concentrations(As, Ni, Cr) between organic and chemically fertilized soil samples($p<0.05$). The concentration of Cd in the paddy soil has not been reported in either of the selected paddy areas. In conclusion, the sustained reduction of chemical fertilizer application over a long-term period may contribute to the decrease in toxic metal contamination observed in the paddy soil within organically cultivated areas. This reduction in contamination subsequently mitigates the risk of the transfer of these toxic metals to the paddy root and grain.

Keywords: Accumulation, Organic farming, Paddy soil, Sri Lanka, Toxic metal

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Abstract No: STMM 24 Science, Technology, Mathematics and Medicine

Exploring the toxic metal contamination and unveiling the risks in staple grains grown in a CKDu hotspot in Sri Lanka

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Toxic metals in dietary grains could pose health risks from direct ingestion. This investigation aims to analyze the concentrations of toxic metals in selected dietary grains and conduct a comparative risk assessment in a region endemic to Chronic Kidney Disease of Unknown etiology(CKDu) in a non-endemic region. Six household fields in the CKDu endemic region in *Nikawewa* Grama Niladhari Division(GND) and three in the reference region; *Wewagedara* GND were selected for sampling. Inductively Coupled Plasma-Mass Spectrometry(ICP-MS) was used to determine Arsenic (As), Cadmium (Cd), Lead (Pb), Chromium (Cr), Copper (Cu), and Zinc (Zn) in composite samples collected from both GND areas (pulses; [(*Vigna radiata;* n=20*)*, (*Vigna unguiculata;* n=20*)*, (*Vigna unguiculata* subsp.; n=20)] cereal; [(*Oryza sativa;* n=30)]. Descriptive statistics revealed average As concentrations in samples as follows; *Oryza sativa* (38.60±13.84 μg/kg,) *Vigna unguiculata* (3.25±1.96 μg/kg), As was undetectable in samples of *Vigna radiate,* and *Vigna unguiculata* subsp. in CKDu endemic area. The average As concentrations of *Oryza sativa* in the reference area was 5.56±1.87μg/kg and As was not detected in other grain species. All values complied with FAO/WHO & Codex permissible limits (As-100-200 μg/kg). The estimated Daily Intake (EDI) value of As (0.257 μg/kg/day) in *Oryza sativa* in the endemic area did not exceed the Tolerable Daily Intake (TDI) (As-0.3 μg/kg/day). The average concentrations of Cd and Pb were reported in the CKDu endemic area; *Oryza sativa* (Cd-1276.92±234.42 μg/kg, Pb-419.31±98.78 μg/kg), *Vigna radiata*(Cd-571.31±60.71 μg/kg, Pb-344.15±93.75 μg/kg), *Vigna unguiculata* (Cd-1354.33±265.34 μg/kg, Pb-408.56±22.20 μg/kg), and *Vigna unguiculata* subsp.(Cd-1546.23±355.23 μg/kg, Pb-408.63±115.14 μg/kg) and exceeded FAO/WHO permissible limit(Cd-400 μg/kg, Pb-300 μg/kg). But those values were within the limits in the reference areas. However, Cu, Cr, and Zn remained within FAO/WHO safe limits in both regions. A health risk can be generated owing to long-term consumption of staple grains grown in *Nikawewa* GND; CKDu endemic area.

Keywords: CKDu, Contamination, Estimated Daily Intake (EDI), Grains, Heavy metals

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Abstract No: STMM 25 Science, Technology, Mathematics and Medicine

Advancements in multifunctional core-shell adsorbent comprising graphene oxide/ sand for adsorptive removal of water contaminants

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Our study introduces a novel approach to enhance the efficiency of water treatment by developing a porous material (M-GO/S) that combines graphite oxide (GO) with river sand overcoming the limitations of conventional granular media filtration. Synthesized M-GO/S was finally characterized by X-ray Photoelectron Spectroscopy (XPS) after primary characterization via X-ray diffraction (XRD), FT-IR, Ramen, and Scanning Electron Microscopic images (SEM). The adsorptive removal efficiency of M-GO/S on selected toxic metals (Pb, Cr, Cd, and Ni), calcium, and methylene blue dye was investigated under the optimum conditions. The findings reveal the presence of a non-uniform graphene oxide coating on the surface of the sand. The incorporation of oxygenated functional moieties within the structure observed according to the comprehensive analysis of the Carbon 1s (C 1s) spectra of the M-GO/S sample in XPS spectrums and revealed the existence of four distinct carbon species exhibiting binding energies at 284.8 eV, 287.05 eV, and 288.85 eV. These carbon species were identified as C-C/C-H, C-O, and COO (epoxy) functional groups, respectively. The adsorption capacities of Pb, Cr, Cd, and Ni were recorded as; 52.2 mg/g, 21.9 mg/g, 38.1 mg/g, and 21.9 mg/g respectively. Under the optimum conditions, the sand/GO nanocomposite demonstrated remarkable efficacy in removing 75% of calcium ions (elevated removal percentage than commercial coal powdered activated carbon) from simulated hard water. Apart from that, under the optimum conditions, M/GO-S was able to mitigate 95% of methylene blue which was identified as a toxic dye from the water. Therefore, based on its versatile characteristics as a multifunctional porous material, the synthesized graphene oxide-sand nanocomposite (M-GO/S) demonstrates significant potential as a viable solution for the treatment of contaminated water.

Keywords: Adsorption, Graphene oxide, Heavy metals, Methylene blue, Water hardness

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Abstract No: STMM 26 Science, Technology, Mathematics and Medicine

Pulse waves unveiled: harnessing convolutional neural networks for accurate classification in pulse diagnosis

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Pulse diagnosis, an essential aspect of Sri Lankan traditional medicine and ancient civilizations like China, India, and Greece, involves skilled practitioners assessing pulse qualities through palpation for valuable health insights. However, the classification of pulse wave patterns presents challenges due to the subjective nature of palpation, complex wave patterns, and limited diagnostic tools. To address these difficulties, this study aims to compare finger pulse signals using a convolutional neural network (CNN) model to enhance pulse-based diagnosis and specifically target pulse wave patterns classification (PWPC) in patients with non-communicable diseases (NCDs) and healthy subjects. In this study, a binary classification was performed to distinguish between two healthy and unhealthy classes. Finger pulse signals from 50 patients with NCDs and 50 healthy control subjects were collected using a multipara patient monitor. The pulse signal images were pre-processed, including normalization, and then analyzed using CNN model, known for its effectiveness in image processing tasks. By isolating individual pulse cycles, the CNN model achieved an impressive identification accuracy of 92% in classifying pulse wave patterns. These findings highlight the efficacy of the proposed CNN model in accurately categorizing and understanding the distinctive pulse wave patterns associated with NCD patients and healthy individuals. The successful implementation of the CNN model in PWPC holds great promise for advancing pulse-based diagnosis. By enhancing diagnostic accuracy, healthcare practitioners can make more informed decisions and develop tailored treatment plans for individuals based on their specific pulse wave characteristics. Ultimately, this research contributes to the growing knowledge of pulse diagnosis and its potential to revolutionize healthcare practices.

Keywords: Convolutional neural network (CNN) model, Non-communicable diseases (NCDs), Pulse diagnosis, Pulse wave patterns classification (PWPC)

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Abstract No: STMM 27 Science, Technology, Mathematics and Medicine

Investigation of agricultural drought in paddy using vegetation indices and land surface temperature in *Anuradhapura* district, Sri Lanka

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Agricultural drought is defined as the decline in the productivity of crops due to irregularities in rainfall, increase in the temperature rate, etc., which causes a decrease in soil moisture. Remote sensing-based vegetation indices and land surface temperature (LST) data play a key role in monitoring and assessing agricultural drought. Therefore, the present study aimed to monitor vegetation indices and LST to assess agricultural drought stress in paddy cultivation in the Anuradhapura district using Landsat-8 satellite data. As study sites, six large paddy fields (Area: 0.1 km2 - 0.5 km2) were selected using Google Earth from drought prone Divisional Secretary's divisions in Anuradhapura district based on recent research studies. Landsat-8 satellite images of the Anuradhapura district from 2015 to 2020 were downloaded from the Land Viewer website. The average paddy yield of Anuradhapura district in the Yala and Maha seasons during the study period was collected from the Department of Census and Statistics. Normalized Difference Vegetation Index (NDVI), LST and Vegetation Condition Index (VCI) were calculated using ArcMap's Raster Calculator tool. NDVI, LST and VCI values of 25 locations from each map were obtained to calculate the average value of each index for each season. According to the results of VCI and yield statistics, 2016/2017-Maha, 2017-Yala, 2017/2018-Maha and 2018-Yala were identified as agricultural drought seasons affecting the paddy yield in Anuradhapura district from 2015 to 2020. There was no significant difference ($p<0.05$) between NDVI in Yala and NDVI in Maha season. In contrast, there was a significant difference ($p<0.05$) between LST in Yala and LST in Maha season, suggesting that a combination of NDVI and LST is essential to obtain accurate and reliable results. According to the regression analysis ($p<0.05$), the results validation of NDVI and VCI exhibited positive associations with paddy yield data, whereas LST exhibited a negative association. Therefore, the current study revealed that the vegetation indices, i.e., NDVI, VCI together with LST play a significant role in determining agricultural drought.

Keywords: Agricultural drought**,** *Anuradhapura* district**,** LST, NDVI, VCI

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Observational study on morphology, growth rate and germ cell attachment of human sertoli cells

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The aim of this study was to investigate the morphology and germ cell attachment of Sertoli cells isolated from human testicular biopsy samples and compare the growth rate of Sertoli cells using two distinct culture conditions: normal culture media and culture media supplemented with FBS.

Sertoli cells were isolated from testicular biopsy samples (n=2) obtained for extracting sperm for intra-cytoplasmic sperm injection (ICSI), after obtaining their informed consent. Sertoli cells were isolated by two enzyme digestion methods using collagenase 1 and trypsin-EDTA. The cultured cells were characterized by morphological observations. The growth rate of Sertoli cells was examined by introducing 5 x 10^3 number of cells into separate wells of a 24-well culture plate. One group of wells was treated with normal DMEM F12 media supplemented with 10% fetal bovine serum (FBS), while the other group was treated with follicle-stimulating hormone (FSH, 100 IU/mg) added DMEM F12 media supplemented with 10% FBS. The cell doubling time was calculated after 24 hours of culture. Interaction between cells was evaluated by mixing Sertoli cells with germ cells which were isolated from semen using the density gradient centrifugation method. After 24 hours of incubation at 33 Ć, the number of germ cells attached to a single Sertoli cell was counted using a light microscope. A sample consisting of Sertoli cells only was maintained as a negative control. Three replicates were done from each sample.

Morphological observations revealed multinucleated and irregularly shaped cells with cytoplasmic extensions for intercellular connections. The average doubling time for cells treated with normal media was 23.1 hours, whereas cells treated with FSH-containing media exhibited a shorter doubling time of 16.9 hours. The average number of germ cells attached to a single Sertoli cell was found to be eight (8), while in the negative control, small cells surrounding the Sertoli cells were observed and counted as three (3).

This study provides valuable insights into the morphological characteristics of Sertoli cells and their ability to support germ-cell attachment. Additionally, the growth rate of Sertoli cells was influenced by the presence of FSH, suggesting its potential role in regulating cellular proliferation.

Keywords: Follicle stimulating hormone (FSH), Germ cells, Growth rate, Sertoli cells

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Abstract No: STMM 29 Science, Technology, Mathematics and Medicine

Diversity assessment of old seedling teas in IU3c agro-ecological region in the Uva region

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Tea [*Camellia sinensis* (L.) O. Kuntze] was introduced to Sri Lanka in the form of seeds and old seedling plantations are a valuable germplasm resource. The largest Agro-Ecological Region of the Uva region, IU3c, was selected and diversity assessment was done using transect and point sampling methods to identify diversity hotspots and conserve them in *Wewesse*, *Dammaria B*, *Nahavilla*, and *Neluwa* estates, during 2022. Phenotypic characterization was done within 5 × 5 m, 10-20 plots per field using multiple traits, *viz.* tree habit, young leaf pigmentation, petiole pigmentation, young leaf pubescence, leaf shape, leaf upper surface, leaf waxiness, leaf size, waviness of leaf margin, and shoot density. Shannon Diversity Index (SDI) was calculated for each and every field, and estate respectively. Among 21 fields at the *Wewesse*, field no. 12 recorded the highest SDI of 2.92 and 9A recorded the lowest of 2.59. Among eight fields at the *Dammaria B*, 1C recorded the highest of 2.80 and 1B recorded the lowest of 2.70. Among 20 fields in *Nahavilla*, 6B2 recorded the highest SDI of 2.79 and fiend no. 5 recorded the lowest of 2.60. Among 11 fields at *Neluwa*, 7A recorded the highest SDI of 2.89 and field no. 5 recorded the lowest SDI of 2.62. Across all fields in all estates, both the highest and lowest SDI values were recorded in fields 12 and 9A of *Wewesse*. When diversity was evaluated by considering estate as a sampling unit, *Wewesse* recorded the highest SDI of 3.05 and the lowest value of 2.96 was recorded at the *Neluwa*. Maximum diversity was observed among tree habit, young leaf pigmentation, young leaf pubescence, leaf waxiness, and shoot density in *Wewesse*. Identified diversity hotspots will be conserved and used for estate cultivar selection program to ensure sustainability of Sri Lankan tea industry.

Keywords: Diversity assessment, Old seedling teas, Phenotypic characterization, Shannon diversity index

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Abstract No: STMM 30 Science, Technology, Mathematics and Medicine

Imaging of intramuscular abscesses: A pictorial view of four cases

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Intramuscular abscesses are pus-filled walled-off collections, often unnoticed clinically. Medical imaging aids diagnosis and guided interventions. This report presents four cases of intra-muscular abscesses detected using imaging.

Case 01: Left iliopsoas abscess-A 55-year-old woman presented with left lower abdominal associated with fever. The ultrasound scan of the abdomen showed a small fluid collection with internal echogenic debris in the left-sided pelvis. Contrast-enhanced CT(CECT) revealed a localised fluid collection with an enhancing wall in the iliopsoas muscle suggestive of a muscle abscess.

Case 02: Left erector spinae abscess - A 48-year-old woman presented with fever, left-side chest wall swelling, and pain. Ultrasonography showed a localised fluid collection on the left chest wall. Contrast-enhanced MRI demonstrated a localised abscess with internal separations in the left erector spinae muscle.

Case 03: Diffuse pyomyositis with developing abscess in obturator externus and quadratus femoris muscles-48-year-old man presented with fever and painful right gluteal and back thigh regions. MRI images showed diffuse hyperintensity in T2W and STIR images concerning the obturator externus and quadratus femoris muscles, suggesting diffuse pyomyositis. In addition, multiple hyperintense pockets with diffusion restriction within that muscle, suggest a developing abscess.

Case 04: Multiple abscesses and gas locules in the right sternocleidomastoid muscle. A 62-year-old woman presented with fever and right-side neck swelling. Ultrasonography demonstrated significant soft tissue oedema and fluid collections with gas shadows. CECT showed multiple abscesses and inflammation in the right sternocleidomastoid muscle and adjacent soft tissues. In addition, gas locales were noted within the collections, suggesting the aetiology of gas-forming organisms.

Ultrasonography plays a crucial role in early diagnosis, while CECT or MR are essential for characterizing intramuscular abscesses. Diffusion-weighted imaging is significant for confirming the presence of an abscess. Consequently, these imaging techniques aid in making treatment decisions and guiding interventions, ultimately leading to improved patient outcomes.

Keywords: Erector spinae abscess, Iliopsoas abscess, Intramuscular abscesses, Pyomyositis, Sternocleidomastoid muscle abscess.

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Effect of near-infrared images with Rgb images for identifying Garnet mineral in Pulmuddai beach Sri Lanka

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Pulmuddai beach sand is one of the foremost mineral manufacturing sources in Sri Lanka. Pulmuddai Seaside is ironic in, Rutile, Ilmenite, Garnet, and Zircon. It is the prime mineral processing company in Sri Lanka. It's an excessive requirement to discover high mineral zones for manufacturing. In manufacturing, the percentage of the mineral is calculated using a visual examination through a microscope. It is a manual process which is time-consuming. The study identified the effect of near-infrared images to differentiate Garnet mineral from sand by using image processing methods. Near-Infrared (NIR) is a portion of the electromagnetic spectrum unseen to the naked eye. The frequency ranges between 650nm to 950nm. Through a strong beam of infrared rays, any object can be envisioned with high precision. The NIR response is free from color dependency and can be simply understood by an observer. In this study, 100 visible light RGB (Red, Green, Blue) images and 100 NIR images of sand were captured. It was captured in a controlled light environment. The RGB color images and NIR images were examined separately to recognize the Garnet mineral from the sample and to compute the Garnet percentage. Machine learning classification (support vector machine) purpose variance, contrast, kurtosis, skewness, mean, median, min, max, range, standard deviation, and correlation were mined from sand grains images. Then RGB and Red, Green, Blue, and near-infrared (RGBNIR) color models were used to train the machine learning model. The RGBNIR color model increased the separation accuracy by 23% compared to the RGB-only model. The accuracy might be enlarged by presenting more images to the machine learning procedure.

Keywords: Garnet mineral, Machine learning, Near-Infrared images, RGB images

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Abstract No: STMM 32 Science, Technology, Mathematics and Medicine

Barriers and facilitators of eHealth services in Sri Lanka: a Systematic literature review

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At the initial stage, the electronic technology and computer applications were adapted to the health services. However, recently mobile technology has been a trend to adopt. Even though the world has adapted to eHealth and mHealth services, so far Sri Lanka has not used them adequately. The objective of this work is to provide a comprehensive list of relevant barriers to be considered and a list of facilitators to help in adopting successful eHealth services in Sri Lanka. The review includes the research articles published from 2007 – 2023 and indexed in the PubMed and Google Scholar databases. In the first stage, 1540 research articles were included in the search in Google Scholar databases using the search "Barriers and facilitators for eHealth + Sri Lanka" and 1249 research articles were included in the search in PubMed databases using the search "Barriers and facilitators for eHealth". After a careful assessment, 204 research articles from 37 different countries were selected for this review by following the 2020 PRISMA statement. A comparative analysis was used to conclude that barriers and facilitators for eHealth and factors that have an effect on the delivery of eHealth services in Sri Lanka.

The most frequent barrier stated in the literature was ICT infrastructure, followed by ICT Literacy and Confidentiality. Further Added workload followed by funding and Motivation are stated as barriers. Motivation and ICT infrastructure were the most stated list of facilitators found in the literature followed by ICT Literacy / System Language, and funding for eHealth solutions.

In Sri Lankan context there are very few references, the most frequent barrier stated in the literature was ICT infrastructure, followed by Confidentiality, Motivation and ICT Literacy. The motivation was the most stated success factor found in the literature.

ICT infrastructure was the most frequent barrier stated in the literature both in Sri Lanka and other countries. ICT Literacy, Confidentiality, added workload, funding, and Motivation were more sequentially frequent barriers stated in the literature that may negatively affect adopting successful eHealth services in Sri Lanka. Motivation was the most stated success factor found in the literature both in Sri Lanka and other countries that positively affect adopting successful eHealth services.

Keywords: eHealth, ICT adaption healthcare, mHealth, Telemedicine

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Abstract No: STMM 33 Science, Technology, Mathematics and Medicine

Economic impact and risk factors affecting transmission of cutaneous leishmaniasis in the district of Matara, Sri Lanka

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Cutaneous leishmaniasis (CL) has shown a rising trend in Sri Lanka since 2008 and the disease is associated with low socio-economic status. The current study aimed to determine the economic burden of CL on households and the risk factors affecting transmission of CL in the district of Matara, Sri Lanka. Information on household, demographic, socio-economic characteristics and direct/indirect cost incurred for CL were obtained from patients reported in 2018 and 2019 in three selected medical officers of health areas in the district of Matara using an interviewer-administered questionnaire in 2019 and 2020. Monthly climatic factors, rainfall, temperature and humidity data were obtained from the meteorology department. A total of 101 patients from 100 households were interviewed, of which 53.5% (54/101) were males and the majority of them 67% (36/54) were heads of the household. The median age of patients was 40 years (IQR= 54-19) and household size was five persons (IQR=5-4). A majority of patients, 56.4% (57/101) were economically active at the time of their illness. Of them, 68.4% (39/57) of the individuals were the only persons contributing to the household income. The main source of income of the majority of patients, 29.8% (17/101) was agricultural practices. The median monthly income of a patient was 108.1 USD (SRL Rs. 20,000) (IQR = 135-70.3USD) in 2020. Because of the free health services, there was no significant economic impact of cutaneous leishmaniasis on households. The number of CL cases was positively correlated with temperature (r=0.314) and negatively correlated with precipitation (r= -0.275) and humidity (r=-0.281). The presence of domestic animal reservoirs (96%=96/100), gender (males 53.5%=245/101), age (40 years, IQR=54-19), mean percentage of vegetation cover (47%=47/100), occupation (agricultural- 29.8%), and the average time of outdoor activities (5-6 hours per day), are the other risk factors associated with transmission of CL in the District of Matara.

Keywords: Age, Cutaneous leishmaniasis, Gender, Patients, Risk factors

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Harnessing pH indicators for timely detection of ammonia

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Ammonia, a crucial marker compound released from land-applied manure, and spoiled foods, holds a distinctive odor and causes potential health hazards. Existing detection methods for ammonia have practical drawbacks, particularly for commercial applications. Commonly used Nessler reagent comprises mercury ions, poses significant environmental and health risks, and requires careful handling and disposal procedures. These limitations highlight a timely need for an alternative point of detection method that consists of reliable and practical ammonia detection. Entrapping the pH indicator into a Sol-Gel matrix is an alternative for ammonia detection. The Sol-gel matrix was prepared using Tetraethoxysilane (TEOS), Methanol, Sodium dodecyl sulfate, and HCl solution. TEOS serves as a silica precursor, facilitating the formation of a stable and porous Sol-Gel matrix. Bromothymol Blue was used as the pH indicator which was entrapped into the Sol-Gel matrix during the preparation. The Sol-Gel solution was kept for a week until it became a solid disk. Once the disks were prepared, each disk was exposed to known ammonia concentrations (0.1M – 1.0M) within a particular time period to measure the color changes. The original color of the disk was yellow, and it changed to blue after the interaction with ammonia. The Color Changes corresponding to the ammonia concentrations were captured and RGB Values were determined by Image J software. Using (R+G+B)/3 formula, a graph was plotted in correlation with the ammonia concentration. Equation y = -(26.608) x + 166.49 was derived and the disk's sensitivity was equated to the 'm' value of 26.608. R^2 was calculated using the equation where R^2 = 0.99. The lowest detectable ammonia concentration was found to be 0.1M as beyond this limit didn't result in significant color changes.

Keywords: Ammonia, Bromothymol Blue, pH indicator, Sol-Gel, Tetraethoxysilane

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Abstract No: STMM 35 Science, Technology, Mathematics and Medicine

Isolation and identification of fungi from virgin coconut oil to develop a process to control fungal contamination

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Virgin coconut oil (VCO) is consumed as major source of fat and present in a wide range of health, and cosmetic products. It is a major agricultural product in Sri Lanka catering over 1% of the global demand. However, fungal contamination is a critical issue with production of VCO. This study was conducted to determine the fungal species that contaminate the final oil product and the source/s or the step/s in the production process that result in fungal growth in the final oil product. Samples were collected from four small to medium scale VCO production sites in Sri Lanka. Fungi were isolated at various stages of oil production, including washing water, white meat after washing with water, after drying and final oil products. Isolation of the fungi were done at each step after incubating for 7 days on potato dextrose agar (PDA). Each of the four sites included four different fungi in final oil samples which are morphologically similar to those isolated from white meat wash water and/ white meat. The isolated fungi were then subjected to the Internal Transcribed Spacer region (ITS) sequencing and the isolated species were identified as *Trametes versicolor*, *Fusarium perseae*, *Simplicillium subtropicum* and *Talaromyces malicola* using BLAST search. Boiling at 100 ℃ and filtration with 0.22 µM showed inhibition of fungal growth for all the species under investigation. Ethanolic crude extract of *Cinnamomum zeylanicum* leaves extracted with Soxhlet apparatus showed inhibition of growth for *F.perseae, S.subtropicum, T.malicola* while *T.versicolor* displayed less inhibition of growth through disk diffusion method. The study suggests that boiling or filtering the wash water for white meat is effective in controlling fungal growth in VCO. In addition, cinnamon leaf extract shows promise for a safe and effective strategy to control fungal growth in VCO. This valuable information facilitates the implementation of preventive measures.

Keywords: *Cinnamomum zeylanicum*, Fungi, Inhibition, Virgin coconut oil

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Electrochemical performance of n-type Cu_2O anode material synthesized by electrodeposition method for rechargeable lithium-ion batteries

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Recently, Cu_2O has received more attention for the anode application of the rechargeable Lithium-Ion Battery (LIB) than the other competing materials because of its high theoretical capacity (375 $mAhg^{-1}$), good capacity retention, affordability, non-toxicity and ease of storage. The electrochemical performance of Cu_2O typically depends on its crystallinity and morphology, which significantly based on the synthesizing technique. However, a simple and convenient electrodeposition technique, which can improve crystallinity with favorable morphology for electrode materials, has not yet been studied for synthesizing Cu_2O. Hence, this study aims for preparing n - type Cu_2O anode materials by the electrodeposition method with enhanced crystallinity and morphology. The lithium-ion rechargeable coin cells were assembled in an argon-filled glove box with anodes fabricated with synthesized Cu_2O, lithium as the reference electrode and counter electrodes together with the non-aqueous electrolyte of 1M $LiPF_6$ in ethylene carbonate and dimethyl carbonate (1:1 wt%). The assembled coin cells subjected to galvanostatic charge-discharge tastings revealed a significantly high initial specific discharge capacity of 623.9 $mAhg^{-1}$ at a rate of 0.2C. That is even after it reported a higher irreversible capacity of 395.4 $mAhg^{-1}$ at the first cycle. Moreover, it displayed a discharge capacity of 200.3 $mAhg^{-1}$ and a noticeably lower irreversible capacity of 2.6 $mAhg^{-1}$ even after 50 cycles. The improved electrochemical performance can mainly be ascribed for the enhanced contact surface area for Cu_2O and electrolyte. It could have resulted due to the enhanced contact between Cu_2O and electrolyte by decreasing diffusion lengths for lithium ions. Electrochemical impedance spectroscopy and cyclic voltammetry analyses also provided evidences for improved electrochemical performance. Altogether, this study reveals that n-type Cu_2O synthesized by electrodeposition method processes very promising electrochemical performance for the anode application of LIB. Hence, this study reveals that Cu_2O synthesized by simple, cost-effective, electrodeposition method has very promising electrochemical performance for the anode application of next-generation high-performance LIBs.

Keywords: Anode materials, Cu_2O, Electrodeposition, Li-ion battery

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Performance Comparison of Binary Segmentation Method and Pruned Exact Linear Time Changepoint Detection Methods for AR (1) Model

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Changepoints are considered as the times at which abrupt changes occur in time series data. Binary Segmentation (BinSeg) and Pruned Exact Linear Time(PELT) methods are common changepoint methods. In this study, our objective is to evaluate the performance of the BinSeg Method and PELT method in the detection of changes of autocorrelation for Autoregression of order one (AR(1)) and White Noise(WN) using a simulation study. The simulation study was conducted in three stages, with 500 series for each stage. To choose penalties, Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and modified BIC (mBIC) are used for model selection. First, we simulated the WN series and AR (1) with the autoregressive coefficient (φ =0.5) without any changes in mean or autocorrelations. The first stage was designed to evaluate the performance of both methods without any changes in the mean. In the WN series without mean shifts, no changepoints were detected. The presence of autocorrelation without mean shifts (AR(1)) detects changepoints for both methods for all penalties with an excessive number of changepoints, leading to poor performance of the methods. In the second stage, both the WN and AR(1) series were simulated with a mean shift. In autocorrelation with mean shifts, the detection of changepoints is low, less than 15% and 5% for PELT and BinSeg methods, respectively. In the third stage of the simulation, time series were simulated with the changes in autocorrelation with and without mean shifts at the true changepoints. For changes in autocorrelations with mean shifts (AR(1) model of ar(0.2, 0.5, 0.8)), the proportions of actual changepoint detection are very low, which is less than 1%, for both methods. Changepoints were not detected for any method for changes in autocorrelations without mean shifts. The PELT method is given a higher proportion of detecting changepoints with mBIC penalty than the BinSeg method in WN and AR(1) data with only mean changes. However, when autocorrelation shifts, the percentage of detecting true changepoints in AR (1) data is less than 1% with mean shift and without shift for both BinSeg and PELT methods. Therefore, developing a changepoint detection method is vital to identify the true changepoints at which autocorrelation changes.

Keywords: Autoregression, Binary segmentation, Pruned exact linear time, Simulations, Time series

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Abstract No: STMM 38 Science, Technology, Mathematics and Medicine

Antioxidant and anti-inflammatory activities of selected endemic plants of Sri Lanka

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Plants have been a source of natural healing compounds since ancient times. Plant extracts are frequently used as complementary treatment for many chronic diseases, due to their demonstrated beneficial properties such as antioxidant, anti-inflammatory and anticancer activities. The present study was designed to assess the total phenolic content (TPC), *in vitro* free radical scavenging activity and anti-inflammatory activity of three endemic plants in Sri Lanka: *Lasia spinosa, Polyscias balfouriana,* and *Elaeocarpus serratus*. The cleaned, dried, and finely powdered leaves of *P. balfouriana* and *E. serratus,* and rhizome of *L. spinosa* were subjected to extraction with Ethanol. The Antioxidant properties of total phenolic content (TPC) and free radical scavenging activity of plant extracts were assessed using the Folin-Ciocalteu and 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging assay, respectively. Anti-inflammatory activity of plant extracts was evaluated by Bovine Serum Albumin (BSA) degradation Assay. *E. serratus* extract showed the highest TPC value; 27.59±0.02 mg gallic acid equivalent (GAE) per g dry weight, followed by *L. spinosa;* 0.1±0.01 mg GAE g^{-1} dry weight. *L. spinosa* extract showed the highest DPPH radical scavenging activity of 89±2 % followed by *E. serratus* 87±2%. *E. serratus* and *L. spinosa* significantly inhibited the denaturation of BSA demonstrating anti-denaturation activity of 57±3% and 54.9±1%, respectively than the other tested extracts. All the analyzed plant extracts demonstrated the presence of polyphenols, along with antioxidant and anti-inflammatory activities. Oxidative stress and chronic inflammation have been reported to promote the development of cancer. Therefore, the tested plant extracts may have anticancer properties due to the observed antioxidant and anti-inflammatory activities. These activities are known to play important roles in countering cancer progression and inhibiting the growth of cancer cells. Therefore, further investigations are required to assess the anti-cancer potential of these plant extracts and isolate potential lead compounds with anti-inflammatory and anti-cancer properties.

Keywords: Anti-inflammatory, Antioxidant, *Elaeocarpus serratus*, *Lasia spinosa.*

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Abstract No: STMM 39 Science, Technology, Mathematics and Medicine

Evaluating the Efficacy of tannins from *Psidium guineense* Sw. leaves, Cinnamaldehyde, Eugenol, and Coconut Pairing Residue in Controlling Food Spoilage Fungal Growth

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There is a lot of interest in using natural alternatives for synthetic food additives including food preservatives. Research has been conducted to explore the antioxidant and antimicrobial properties of tannins from Psidium guineense Sw. leaves (PGSLT), the major components in cinnamon bark and leaf, namely cinnamaldehyde and eugenol, and the ethanolic extract of coconut pairing residue (CPRE). However, no studies have been conducted to evaluate their contribution to controlling fungal growth in food products. This study attempts to fill this gap by assessing the efficacy of PGSLT, Cinnamaldehyde(95%), Eugenol(95%), and CPRE in controlling the growth of fungi commonly involved in spoilage of baked foods. As test organisms, *Rhizopus stolonifer, Mucor Sp, Aspergillus niger*, and *Fusarium Sp* that are frequently found in baked foods were used. The Folin-Ciocalteu assay was used in this study to evaluate the total phenolic content of PGSLT and CPRE. For PGSLT, the concentration of tannin was 106.27±0.1 mg gallic acid eqv.g^{-1}, whereas total phenol content of CPRE was 18.92±0.1 mg gallic acid eqv.g^{-1}. The disc diffusion assay was employed to assess the inhibitory effect of PGSLT, Cinnamaldehyde, Eugenol, and CPRE against the fungal strains. For cinnamaldehyde(9.56 mmol/L, 10μl) the diameters of inhibition zones of *R.stolonifer, Mucor, A.niger, Fusarium* were 14.0±0.1mm, 32.0±0.1mm, 13.0±0.1mm, 52.0±0.1mm respectively. For Eugenol(6.49mmol/L,10μl) the diameters of inhibition zones of *R.stolonifer, Mucor, A.niger, Fusarium* cultures were 10.0±0.1mm, 12.0±0.1mm, 13.0±0.1mm, 16.0±0.1mm respectively. PGSLT and CPRE did not show any inhibitory activity. Interestingly, when cinnamaldehyde was combined with PGSLT or CPRE there was an enhancement of the inhibitory activity by approximately 30% ($p<0.05$). When eugenol was combined with PGSLT or CPRE there was an enhancement of the inhibitory activity by approximately 10% ($p<0.05$). The results of this study suggest that cinnamaldehyde and eugenol or combinations of cinnamaldehyde and eugenol with PGSLT or CPRE may be used to improve the shelf life of baked foods. Further studies will be carried out on synergistic enhancement of inhibitory activity and application of these natural substances in baked foods.

Keywords: Fungal growth inhibition, Microbiological spoilage, Natural alternatives, Synergistic enhancement, Cinnamaldehyde

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Abstract No: STMM 40 Science, Technology, Mathematics and Medicine

Cytogenotoxicity assessment in *Allium cepa* roots exposed to phytoremidiated Used Lubricant Oil (ULO) contaminated soil

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The present study assessed the cytogenotoxicity in *Allium cepa* roots exposed to phytoremidiated Used Lubricant Oil (ULO) contaminated soil. The study involved a pot experiment of marigold (*Tagetes erecta* L.) seeds planted in six different concentrations of ULO-contaminated soil (0%, 1%, 2%, 3%, 5%, and 8% on w/w basis). A control series without seeds was also carried out and all experiments were triplicated. The experiment duration was 90 days with regular watering and under sunlight exposure. At 30, 60 and 90 days, *A. cepa* root meristems were examined for interphase cells, mitotic cell division stages, and the occurrence of nuclear and chromosomal abnormalities by exposing germinated root meristems of *A. cepa* to phytoremidiated ULO contaminated soil for 96 hrs. Descriptive statistics in MINITAB-19 software were used for data analysis. The results revealed decreased mitotic index with increasing ULO contamination levels and increased occurrences of chromosomal aberrations including breaks, vagrant chromosomes, chromosomal bridges, and polar slips. Nuclear abnormalities, including nuclear buds, bi-nuclei, and condensed nuclei, also increased with ULO concentration. However, all the parameters tested from phytoremidiated ULO contaminated soil showed comparatively low values with their respective controls. Overall, the present study provided important insights on the cytogenotoxicity of phytoremidiated ULO-contaminated soil in *A. cepa* roots highlighting potential health risks associated with ULO pollution in the environment. Further studies are recommended to develop targeted and sustainable mitigation approaches for ULO contamination, safeguarding ecosystems and human well-being.

Keywords: *Allium cepa* bioassay, cytogenotoxicity, phytoremediation, soil contamination, Tagetes *minuta* L., used lubricant oil.

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Abstract No: STMM 41 Science, Technology, Mathematics and Medicine

In vivo cytogenotoxicity of powdered laundry detergents in *Allium cepa*

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Detergents are complex mixtures that contain harmful organic and inorganic chemical constituents which help in dirt removal. The present study was planned to assess the potential cytotoxicity and genotoxicity of powdered laundry detergents available in Sri Lanka by *Allium cepa* bioassay. Five detergents were selected including four (A, B, C, and D) from a questionnaire survey and non-branded detergent E from the local market. Toxicity assessments were conducted for a series of pre-determined aqueous detergent concentrations ranging from 0 to 2500 mg/L using the standard *A. cepa* bioassay. All experiments were triplicated, and standard protocols were followed. Descriptive statistics in MINITAB19 software were used for data analysis. Exposure to detergent concentrations <500 mg/L resulted root growth retardation, and mitosis suppression of *A. cepa*, indicating concentration-dependent cytotoxicity. Condensed nuclei were the most prominent nuclear abnormality. The most frequent chromosomal aberrations were vagrant chromosomes and chromosomal adherence. The selected detergents induced necrotic cell death at higher concentrations in *A. cepa* root meristematic cells. Exposure of detergents for 7 days induced root malformations including tip breakages, crochet roots, uneven root length, hooks, yellow-colored roots, c-tumor roots, and slimy translucent roots. Further research is recommended to investigate the toxic effects of detergents on organisms within the ecosystem to a better understanding of the risks associated with detergent use and aid in the development of appropriate measures to mitigate potential adverse effects on the environment and human health.

Keywords: *Allium cepa*, bioassay, Cytogenotoxicity, Detergents

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Abstract No: STMM 42 Science, Technology, Mathematics and Medicine

Detection of pathogenic Leptospira from field-collected water samples as an indicator of predicting leptospirosis outbreak

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Leptospirosis is a zoonotic infectious disease caused by the pathogenic Leptospira with an estimated pooled case fatality ratio of 7% in Sri Lanka. Humans acquire leptospirosis through direct contact with the urine of infected reservoir mammals or, most frequently through contaminated water. Rainfall and floods have been associated with regular leptospirosis outbreaks in the country. Hence this study aimed to isolate pathogenic Leptospira from environmental water samples as a predictor of outbreak, to commence prophylaxis antibiotics for risk groups. A prospective study was performed to detect pathogenic Leptospira in water samples collected from geographical localities, where laboratory confirmed leptospirosis patients reside (index cases=87). The control water samples were collected from areas in which patients with acute febrile illnesses but not leptospirosis reside (control cases=87) for comparison. A cluster with index/control case site and neighborhood situated within 200m radius was selected. Water samples (50mL were collected from each site into sterile polypropylene centrifuge tubes and centrifuged at 3,000 g for 30 minutes at room temperature. DNA from the pellet was extracted using the QIAamp Viral RNA Mini Kit (QIAGEN GmbH, Hilden, Germany) and tested by a previously validated real time PCR designed to detect pathogenic Leptospira. Results showed 34% (23/67) and 5.8% (4/68) water samples from index and control clusters were positive for pathogenic Leptospira respectively. Statistically significant positivity was noted between index and control clusters ($\chi 2=17.1$, $p<0.00$). The result of the study shows a high likely hood of human acquiring the infection through occupational, recreational and or avocational activities done in water sources in close environments. Hence, the study indicates the possibility of using water testing as an indicator for early detection of leptospirosis outbreaks as well as for the identification of possible geographical expansions.

Keywords: Leptospirosis, Real time PCR, Water

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Application of stable δ13C and δ15N isotope analysis for trophic levels discrimination of fish species in Daduru Oya reservoir; Sri Lanka

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Stable isotopes vary the rate of reaction and incorporation into biological structures and there are a range of exciting applications of stable isotopes in food chain studies. This ratio of ^{13}C to ^{12}C provides information on the primary energy source, while isotopes ratio of ^{15}N to ^{14}N trophic levels. This approach is used to discriminate the tropic levels of 4 exotic and 16 native fish species sampled from the Daduru oya reservoir using dorsal muscle tissues. Samples were freeze dried at -40 0C. Dried samples were packed in Tin (Sn) Capsule. $\delta^{13}C$ and $\delta^{15}N$ were measured using Isotope Ratio Mass Spectrometry (IRMS). Gut content analysis was done parallelly. Primary consumers were represented by detritivores including *Cirrhinus mrigala and Labeo dussumieri* with mean $\delta^{15}N$ values of 5.73 to 7.15‰ and $\delta^{13}C$ values of -31.23 to -32.31‰. The sample was dominated by omnivores with a mean of $\delta^{15}N$ value of 9.5 to 13.4 % and a mean of $\delta^{13}C$ -26.8 to -32.6%, those had a diet with significant contribution of insects, crustaceans and fish parts. They had ranged their δ15N value from 11.96 to 13.4 and δ13C value from -26.88 to -29.42‰. This group include species from the genera of *Amblypharyngodon*, *Devario*, *Esomus, Oreochromis, Pseudetroplus* and *Puntius*. The gut content of *Pterygoplichthys* sp. and *Esomus dandrica* consisted of more detritus and some animal bone food items. Their $\delta^{15}N$ ranged from 9.83 to 10.28‰ and $\delta^{13}C$ ranged from -31.13 to -32.61‰. The carnivore's isotope signatures were not projected satisfactorily due to the fewer samples. The consumer $\delta^{15}N$ values suggested three trophic levels; detritivores, herbivores and omnivores. The dendrogram was created using a final partition of 3 clusters, which occurs at a similarity level of approximately 50. The current analysis reveals that estimates of trophic positions coincide with the trophic fractionation of $\delta^{15}N$ 3.4 ‰ and $\delta^{13}C$ 1.0‰ approximately. The study shows the capability of the stable isotopic analysis in tropic level identification of fresh water reservoir fish species.

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Abstract No: STMM 44 Science, Technology, Mathematics and Medicine

Impact of BERT Embedding on Deep Learning for Short Text Classification

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The issues of short text classification have gained a considerable attention due to huge text data generations with social media platforms such as Facebook, twitter, Instagram etc. One of the primary tasks of these platforms is to correctly detect and classify data. But due to the shortness of text record length, short text classification is a challenging task. recent research works mostly utilize embedding based representation with neural network models to improve the classification performances of short text. BERT was one of the language models which was used to represent embedding features for user generated text dataset. But it's hard to find a comprehensive analysis of short text classification performance comparison with BERT embedding representation with different neural network models. Therefore, this research experiment was conducted to investigate the impact of basic neural models such as CNN, LSTM and RNN towards short text classification performances. Moreover, variation of those neural models such as BI-LSTM, CNN-LSTM were explored. Publicly available twitter dataset was selected for the experiment. After completion of the preprocessing, dataset was divided 70-30 ratio as training and validation. The training dataset was again divided with the ratio of 80:20 for neural model training and validation respectively. Our conclusions are that LSTM Neural model with 79% classification performance, outperformed RNN and CNN. The CNN model gave considerably low performance which is 23%. When variation of neural models was used for the investigation, Bidirectional LSTM gave 81.7% classification performance level compared to other models such as CNN-LSTM.

Keywords: CNN, LSTM, RNN

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Multidisciplinary Studies

Abstract No: MDS 01 Multidisciplinary Studies

Impact of microlearning on academic performance of higher education students - a systematic review and meta-analysis

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Microlearning is the process of learning through small-sized, well-planned learning units and short-term learning activities. The objective of this study was to conduct a systematic review and meta-analysis to evaluate the impact of microlearning compared to macro-learning on the academic performance of higher education students. Ten databases were searched including SCOPUS, EBSCOhost, Emerald, JSTOR, Taylor & Francis, PubMed (MEDLINE), Oxford University Press, ERIC, ACM and IEEE Xplore. Research conducted on microlearning in higher education, in which the academic performance in theoretical examinations in microlearning method was evaluated quantitatively and compared with macro-learning and the studies which were reported in English language were included in this study. The search retrieved 602 studies. Full texts that did not meet the inclusion criteria were excluded. Twelve studies were included in the systematic review. Cochrane's risk of bias tool was used for the risk of bias assessment of the included studies. Meta-analysis was conducted using the RevMan 5.4 software including studies that have presented complete outcome data on academic performance of students in theoretical examination. Five studies were included in the meta-analysis. Meta-analysis showed a higher academic performance in students learned using microlearning (n=344) compared to the students learned using macro-learning (n=310) (p = 0.03). The overall mean difference in academic performance in relation to post-test scores in theoretical examinations between microlearning and macro-learning groups was 12.6 (95% *CI*: 1.2 - 23.9). Therefore the students who participated in microlearning performed higher in theory examination than students who were enrolled in macro-learning. Microlearning can increase academic performance of students by reducing cognitive load, providing flexible learning environment, promoting self-directed learning and by providing timely feedback. Designing the microlearning lessons according to the adult learning principles can further enhance the positive impact of microlearning on students' academic performance in higher education.

Keywords: Academic performance, Adult learning, Higher education, Microlearning, Traditional learning

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Abstract No: MDS 02 Multidisciplinary Studies

A guide to instructional design models for digital learning in higher education – A scoping review

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Instructional design (ID) is a systematic process that is used to develop education and training programs in a consistent and reliable way. A key challenge faced by educators is selecting an ID model by deciding which ID model will be more suitable in order to achieve an effective digital teaching and learning process. The objective of this scoping review was to present recommendations to select ID models for digital learning in higher education. Nine databases were searched for eligible publications. The study selection was performed using the Covidence platform. The search retrieved 643 records. Forty articles from 23 countries covering 15 fields of study which were published from 2001 to 2022 were included in this review. Among them, 30 studies used existing ID models (i.e. number of articles which used each ID model: ADDIE - 20, Rapid prototyping - 3, 4C/ID model - 2, Morrisons, Ross and Kemp (2004) – 2, IDEA – 1, ASSURE – 1, Six-step blended learning conversion model – 1) and the rest created new ID models. Results show that employing a systematic process in instructional design (an ID model) has produced an effective, consistent and reliable digital teaching and learning process in higher education. Selecting an ID model should be based on the requirements of the course, timeline, resources available for the design and development of the course and the expertise in the ID process. ADDIE is the most commonly used ID model because it provides a generic process for developing instructional materials which can be used in all three modes (face-to-face, blended and online) and can be used by academics and instructional designers new to ID. When ID models in current practice are not adequate to meet the needs of a course, new ID models can be created based on existing ID models to fulfil those needs.

Keywords: Digital learning, Guideline, Higher education, Instructional design model

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Abstract No: MDS 03 Multidisciplinary Studies

In vivo control of *Aspergillus flavus* on stored rice by slow-release formulations of cinnamon and lemongrass oil

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Aspergillus flavus is one of the major storage fungi producing aflatoxins on stored grains. Consumption of such foods causes serious health problems in humans due to aflatoxin contamination. The use of plant essential oils is gaining increased attention due to their wide acceptance by consumers and their natural and safety and efficacy. In this study, cinnamon leaf oil and lemongrass oil were microencapsulated using chitosan to obtain controlled release of the oils. Essential oils were microencapsulated using ionotropic gelation method with sodium tripolyphosphate as the crosslinking agent. Both oils were obtained from the local market and analysed using GC-MS. The paddy samples (Bg11-11) were obtained from the Rice Research Institute Bathalgoda, Sri Lanka. *A. flavus* was isolated from an old rice sample and identified based on morphological and molecular characteristics. The minimum inhibitory dose and the minimum lethal dose of each oil against *A. flavus* was determined on stored rice. According to GC-MS analysis, the major constituents of cinnamon oil were eugenol (56.49%) and beta-caryophyllene (9.03%) whereas lemongrass oil has Citral-A (45.55%) and Citral-B (36.26%) as major constituents. According to the *in-vivo* assay, the antifungal activity of both free oils was higher than that of corresponding microencapsulated oils, indicating the controlled-release of oils from microcapsules. Cinnamon oil chitosan microcapsules (CNO-CS-MCs) showed higher antifungal activity against *A. flavus* than that of lemongrass oil chitosan microcapsules (LGO-CS-MCs). The minimum inhibitory dose of CNO-CS-MCs was 5 mg per 2×10^7 spores, and that of LGO-CS-MCs was 7.5 mg per 2×10^7 spores. The minimum lethal dose of CNO-CS-MCs was 12.5 mg per 2×10^7 spores. Furthermore, the inhibition duration of the fungi by CNO-CS-MCs was longer than that of LGO-CS-MCs, indicating the bioavailability of CNO-CS-MCs is higher than the LGO-CS-MCs. These slow-release formulations have a great potent as green pesticides against *A. flavus* on stored grains.

Keywords: *Aspergillus flavus*, Chitosan, Cinnamon leaf oil, Lemongrass oil, Microcapsules

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Abstract No: MDS 04 Multidisciplinary Studies

Study on household waste management practices of undergraduates

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Lifestyle changes of people have brought an increase in nature and the amount of waste generated in domestic households. A large fraction of household-generated waste consists of biodegradable materials. The rest includes plastic and glass materials as well as parts of used electronic-based appliances. To achieve sustainable development, United Nations' 2030 agenda suggests preventing, reducing, recycling, and reuse of waste. Therefore, this study was conducted to identify how different categories of domestic waste are disposed of by a selected Sri Lankan community. The study was carried out as a survey, involving residences of undergraduates of the University of Vocational Technology. A structured questionnaire was distributed online, among 390 students. However, only 36.7% (143) of students responded. Descriptive statistics were used to analyze data. The study findings indicated that, at present, only 47% of houses separate waste as bio-degradable and non-biodegradable, and 24% of the overall residences discard mixed wastes. A proportion of 57% of the houses burn polythene wastes, while burning is also the disposing method of rubbery debris by 37% and packing material like polystyrene and other discarded plastics by 35% of the houses, respectively. Interestingly, 83.3%, 81.8%, and 50% of the residences respectively handover electrical/electronic, metallic and paper based wastes to waste-collectors. However, 24.5 % dump the glass and other ceramic-based waste into a pit. Students' responses indicate that 14% of them do not have an understanding of hazardous waste and disposal. Hence, there is a requirement for a concentrated intervention at different levels to educate university students as well as the general public on how to dispose waste safely.

Keywords: Non- biodegradable materials, Sri Lankan residences, University students, Waste management

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Abstract No: MDS 05 Multidisciplinary Studies

Evaluation of phytochemical composition and antioxidant properties of ethanol extract of bark of *Dialium ovoideum thwaites*

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Antioxidants have been discovered to play an important function in protecting the body from damage caused by reactive free radicals via interacting with free radicals, chelating, and serving as oxygen scavengers. *Dialium ovoideum thwaites*, an endemic plant in Sri Lanka, which is locally identified as Gal Siyambala. Leaves of *D. ovoideum thwaites* have been reported to possess antioxidant properties. Hence, this study aimed to investigate the phytochemical profile and evaluate the antioxidant properties of the ethanol extract of the bark of *D. ovoideum thwaites*. The extract was prepared using the Soxhlet extraction method and it was subjected to phytochemical screening using standard procedures. The gravimetric method was utilized to conduct the quantitative analysis of flavonoids, tannins, and saponins. Folin-Ciocalteau assay was used to determine the total phenolic content. DPPH radical scavenging and ferric-reducing power assays were used to determine the antioxidant properties. The results of qualitative phytochemical screening showed the presence of phenols, flavonoids, saponins, steroids and tannins. In quantitative analysis, the phytochemical constituents indicated 10.7% (w/w) of flavonoids, 1.1% (w/w) of tannins and 0.9% (w/w) of saponins. The total phenolic content was 233.4±22.7 mg gallic acid equivalent/g extract while the IC_{50} value for the DPPH assay was 68.5±6.3 µg/mL which is comparable to ascorbic acid (32.0±2.1 µg/mL). The reducing potential of the extract showed that it possesses a significant ($p<0.05$) reductive potential as compared with the ascorbic acid standard. Results revealed that the ethanol extract of the bark of *D. ovoideum thwaites* exhibits antioxidant properties which are positively correlated with its total phenolic content.

Keywords: Antioxidant activity, *Dialium ovoideum thwaites*, Ethanol bark extract, Phytochemical profile

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Abstract No: MDS 06 Multidisciplinary Studies

Critical evaluation of Non-Communicable Diseases (NCD) prevention health communication content on selected Facebook pages in Sri Lanka

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Non-communicable diseases (NCDs) are the leading cause of death locally and globally. Education and health promotion are vital in NCD prevention and Facebook has become a popular medium of health communication. The aim of this study was to critically evaluate the health communication theories and strategies used for NCD prevention on selected Facebook content in Sri Lanka. A Facebook content analysis was conducted on purposively selected posters, videos, and 2D/3D animations addressing physical inactivity and unhealthy diets published on the official Facebook pages of the -Non-Communicable Disease Unit and Health Promotion Bureau and Nutrition Division of Ministry of Health from 2018-2022. User engagement, the overall theme, and the adaptation of the health communication strategy (social marketing mix and Laswell's Communication model), and Health Communication Theory, based the Health Belief Model were analyzed deductively. Health communication theory and strategy used was scored between zero to three for six components each using the corresponding pre-designed marking scheme. Out of 28 videos and 109 still posts, related to unhealthy diets and physical inactivity 15 (10 videos and 05 posts) were selected based on the page published, topic and the highest engagement. Content related to physical activity was limited to 25%. The top four content with the highest social engagement content expressed a low adaptation to theory and a high level of strategic exposure. Health Communication strategy evaluation highest score (94%) was obtained by a video addressing health diets from the Nutrition Division and the highest score for health communication adaption (94%) was obtained by a salt reduction by the Health Promotion Bureau. Overall, the evaluation data reflected that the content chosen from all these Facebook pages had a high level of health communication strategic focus, but a very low level of health communication theoretical underpinning. Strategically sound content showed high user engagement.

Keywords: NCD prevention, Health communication theories, Health communication strategies, Facebook contents

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Abstract No: MDS 07 Multidisciplinary Studies

Seed extracts of true halophytes, *Salicornia brachiata* and *Suaeda maritima*, as excellent sources of anti-inflammatory and antioxidant agents

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Plant extracts have been harnessed as traditional remedies, offering a promising avenue for discovering new anti-inflammatory agents and antioxidants. Additionally, undesirable side effects of currently available anti-inflammatory drugs emphasize the demand for alternative treatments with fewer adverse effects. It has been reported that plant parts, particularly seeds, are abundant with antioxidants and also have been identified as potential sources of anti-inflammatory compounds. With previous reports of promising anti-inflammatory and antioxidant activities of two genera *Salicornia* and *Suaeda*, the objective of this study was to evaluate the *in-vitro* anti-inflammatory and anti-oxidant properties of seed extracts of *Salicornia brachiata* and *Suaeda maritima* abundantly found in Sri Lankan salt marshes. The seeds were sequentially extracted to hexane, dichloromethane (DCM), and methanol, and their *in-vitro* anti-inflammatory and anti-oxidant activities were evaluated. Anti-inflammatory activity was evaluated by the human red blood cell membrane stabilization method whereas the anti-oxidant potential was screened using the 2,2-diphenyl-2-picryl-hydrazyl (DPPH) and 2,2′-azino-bis(3-ethylbenzothiazoline-6-sulfonic acid (ABTS) antioxidant activity assays. *S. maritima* DCM extract demonstrated significantly strong anti-inflammatory activity (IC_{50}, 43.89 ±2.53µg/mL, at p=0.05), whereas methanol extract revealed moderate activities IC_{50}758.62±4.11,µg/mL) compared to the positive control aspirin (IC_{50}, 27.80±1.03 µg/ml). Although the methanol extract displayed anti-inflammatory activity of *S. brachiata* seed extracts (IC_{50},780.26±0.55), marked free radical scavenging activities of IC_{50},37.14± 1.11 in DPPH and IC_{50},51.91± 4.94 in ABTS assays were observed. Thus, the findings suggested that the methanol extract possesses an elevated ability to neutralize free radicals, which play a role in oxidative stress and inflammation. In conclusion the seed extracts of these two plant species can be considered as sources for novel anti-inflammatory and anti-oxidant agents, positioning them as suitable candidates for potential utilization in pharmaceuticals, nutraceuticals, and cosmetics.

Keywords: Antioxidants, Free radicals, Halophytes, Inflammation, Oxidative stress

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Abstract No: MDS 08 Multidisciplinary Studies

Effectiveness of school based interventions to control Dengue vector in selected schools of Gampaha District, Sri Lanka

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Aedes aegypti and *Aedes albopictus* mosquitoes can spread dengue quickly when appropriate conditions are available. According a published study in the Western Province, large number of dengue vector breeding habitats has been found in schools. Gampaha district of Sri Lanka is considered as the district with the largest residential population and second highest district for dengue incidence in the country. Therefore, the main objective of the study was to develop and determine the effectiveness of school-based interventions to control Dengue vector in the Gampaha District, Sri Lanka. The study consisted of a baseline survey and three follow-up entomological surveillances. Government schools were selected as 30 intervention schools from Kelaniya (n=15) and Gampaha (n=15) and 30 control groups from Negombo (n=15) and Minuwangoda (n=15) Educational zones of Gampaha District. After the baseline survey school-based interventions were introduced to raise the knowledge, attitude and practices (KAP) with community participation during 2016 to 2019. After the third follow-up survey Container Index was calculated. There was a significant difference between the number of dry ($p<0.001$), water holding ($p=0.027$) and infested containers ($p= 0.006$) observed at the baseline and the third follow-up surveys at the intervention schools where it was not significant for control schools; KAP and cleanliness at school premises were also enhanced with a better waste management practice at the intervention schools. Therefore, school-based interventions implemented during this research study can be suggested for future island-wide programs.

Keywords: Children, Dengue breeding places at schools, Gampaha district, Interventions

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Abstract No: MDS 09 Multidisciplinary Studies

ඉතිහාසය විෂය සඳහා නිපුණතා පාදක ඉගැන්වීමේ ක්‍රම පන්ති කාමරය තුළ ක්‍රියාත්මක වන ආකාරය පිළිබඳ විශ්ලේෂණාත්මක අධ්‍යයනයක්

ඩී. විජේසේකර[1*]

[1]පස්දුන්රට ජාතික අධ්‍යාපන විද්‍යා පීඨය, කළුතර, ශ්‍රී ලංකාව

අධ්‍යාපනයේ අරමුණක් වන්නේ බුද්ධිමත්, සදාචාරාත්මක, චිත්තවේගීය හා කායික යන අංශ සියල්ලේම සාමකාමී සංග්‍රහයක් මගින් සමබර පෞරුෂයක් ඇති පරිපූර්ණ පුද්ගලයෙකු තැනීමය. එවැනි පුද්ගලයෙකු ළඟා කරගත යුතු නිපුණතා පාසල් අධ්‍යාපනයෙන් ලබාදීම වර්තමාන අධ්‍යාපනයේ කාර්යභාරයකි. එබැවින් කනිෂ්ඨ ද්විතීයික ශ්‍රේණිවල නිපුණතා ක්‍රියාත්මක වන ආකාරය විමසීමේ අරමුණින් *10 ශ්‍රේණිය ඉතිහාසය විෂයමාලාවට අදාළව* මෙම පර්යේෂණය ක්‍රියාත්මක කෙරිණි. එහිදී විෂයමාලාවේ ක්‍රියාත්මක මට්ටම සහ ශිෂ්‍යයන් එම නිපුණතා සාධනය කරගැනීම යනාදී කරුණු හඳුනාගැනීම අවශ්‍ය විය. ඒ සඳහා *ඉතිහාසය විෂයයෙහි නිපුණතා ක්‍රියාත්මක කිරීම පිළිබඳ විවිධ පාර්ශ්වයන්ගේ අදහස් විමසාබැලීම, ඉතිහාසය විෂයට භාවිත කරන ඉගෙනුම් ඉගැන්වීම් ක්‍රම ශිල්ප විමසීම, ඉතිහාසය විෂයෙහිදී ශිෂ්‍ය නිපුණතා වර්ධනයට යොදන උපාය මාර්ග හඳුනාගැනීම, ඉතිහාසය විෂය සඳහා නිපුණතා මූලික ශිෂ්‍ය ඇගයීම් ක්‍රියාවලිය සිදුවන ආකාරය සොයාබැලීම* යන අරමුණු ඔස්සේ පර්යේෂණය සිදු කරන ලදී. *ඓතිහාසික පර්යේෂණ ප්‍රවේශය* මෙන්ම *විස්තරාත්මක පර්යේෂණ ප්‍රවේශය* ද, ජනගහනයෙන් කොටසක් අධ්‍යයනය කරන නිසා *නියැදි සමීක්ෂණ ක්‍රමවේදය* ද අධ්‍යයනයට උචිත ආකාරයෙන් යොදාගෙන තිබේ. *ප්‍රශ්නාවලි, සම්මුඛ සාකච්ඡා සහ නිරීක්ෂණ ෂෙඩ්‍යුල යන මිනුම් උපකරණ* භාවිතයෙන්, ගුරු උපදේශකවරුන්, විදුහල්පතිවරුන්, ගුරුවරුන් සහ සිසුන් 230ක නියැදියක් මෙන්ම පන්ති කාමර නිරීක්ෂණ 12ක් මගින් මේ සඳහා දත්ත රැස් කෙරිණි. එමගින් ලැබුණු ප්‍රතිචාර, අධ්‍යනයට යොදාගත් අරමුණු මත පදනම්ව, අන්තර් පරිමාණ විශ්ලේෂණ ක්‍රම යටතේ MS – Excel භාවිතයෙන් ප්‍රතිශතක වගු හා සංඛ්‍යාත්මක ක්‍රම යොදමින් විශ්ලේෂණය කර තිබේ. එමගින් කනිෂ්ඨ ද්විතීයික ශ්‍රේණිවල ඉතිහාසය විෂයෙහි නිපුණතා පාදක ඉගෙනුම් ඉගැන්වීම් ක්‍රියාවලියට බාධාකාරී වන ගැටලු පවතින බව, විෂයමාලා ප්‍රතිසංස්කරණවලින් අපේක්ෂිත ගුණාත්මක වෙනස අධ්‍යාපන ක්ෂේත්‍රයට නියමාකාරයෙන් ලැබී නොමැති බව, නිපුණතා සාධනයට යොදන ගුරු උපාය මාර්ගවල සාධනීය ලක්ෂණ දැකිය හැකි වුවද, ක්‍රියාත්මක මට්ටමේ දුර්වලතා පවතින බව, විෂයමාලාව දැඩිලෙස ශාස්ත්‍රීය අංශයට නැඹුරු වී ඇති අතර නිපුණතා වර්ධනයට ඇත්තේ සීමිත අවස්ථා බව අනාවරණය විය. එම අනාවරණ අනුව ඉතිහාසය විෂයෙහි අපේක්ෂිත නිපුණතා සාධනයට පවතින විෂයමාලාව සංශෝධනය කළ යුතු බවත්, නිපුණතා ලබාදීමේ අවශ්‍යතාවය පිළිබඳ ඉගෙනුම් ඉගැන්වීම් ක්‍රියාවලියට සම්බන්ධ සියලු පාර්ශ්වයන් දැනුවත් වියයුතු බවත්, ශිෂ්‍ය නිපුණතා සාධනය, ඇගයීම සහ ප්‍රතිකාර්ය වැඩසටහන් අධීක්ෂණය ක්‍රමවත් වියයුතු බවත්, නිපුණතා සාධනයට ශිෂ්‍ය කේන්ද්‍රීය ඉගෙනුම් වාතාවරණයක් අත්‍යවශ්‍ය බවත් නිගමනය කළ හැකිය.

මුඛ්‍ය පද: ඉගෙනුම් ඉගැන්වීම් ක්‍රියාවලිය, ඉතිහාසය, නිපුණතා

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Humanities, and Social Sciences

Abstract No: HSS 01 Humanities, and Social Sciences

An Analytical Study on the Contraction of Voiceless Glottal Fricative Sound in Spoken Hindi: Rapid Speech Context

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Contraction is a phonological process by which a sequence of sounds that constitute one or more words is reduced or fused. This reduction may be accompanied by additional changes in the sound segments. In Hindi, /h/ is the voiceless glottal fricative, also called the voiceless glottal transition or the aspirate. Compared with the other sounds in Hindi, voiceless Glottal Fricative is used in various phonological environments. This variation is common in the Hindi language, either as a historical development or as a contemporary difference between dialects, sometimes as an allophone or hypercorrection in rapid speech, and as a spelling pronunciation or out of perceived etymological correctness. Accordingly, the main objective of this study is to analyse the features of the contraction of voiceless glottal fricative /h/ sound in spoken Hindi in the rapid speech context. Particularly, attention is given to finding out the reasons for the contraction of the sound /h/ in Hindi. The data were collected using video and audio materials of the native speakers and the collected data were analysed based on phonological theories such as assimilation, consonant cluster reduction, vowel reduction, and syllable deletion. Accordingly, the key findings are based on identifying several features of the sound /h/contraction in the spoken Hindi language. This paper emphasized that according to supra-segmental features, in the spoken Hindi language, the contraction of sound /ə/ frequently happens in language, while sound /h/contraction occurs between consonants of words. Furthermore, in the middle of a word and at the end of a word, the /h/ contraction often occurs, and the peculiarity found in Hindi is that the /h/ contraction occurs at the beginning of the word, and the remaining vowel joins with the end consonant of the previous word.

Keywords: Glottal Fricative, /h/ Sound-contraction, Rapid Speech, Spoken Hindi, Voiceless

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Abstract No: HSS 02 Humanities, and Social Sciences

The implication of Canvas to enhance English language teaching and learning: A case study conducted at the Nawaloka College of Higher Studies

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Technology has had a significant impact on education over the past few decades leading to a transition from paper-based learning towards digital tools. In response, learning management systems were integrated to assist classroom management. Given that, the study aims to investigate the implication of the Canvas application to enhance English language teaching and learning at Nawaloka College of Higher Studies, Sri Lanka focusing on its effectiveness and user perceptions. Using the mixed method research approach, a questionnaire consisting of both close-ended and open-ended question types was distributed among a sample of 100 students from Engineering and Business backgrounds following the Academic and Communication Skills A module and 6 experienced English teachers. The quantitative data revealed that the standard error mean of student survey 2 (0.841) was lower than in the first (0.929), suggesting the users' improvement in their understanding of the LMS system over time through hands-on experience. Further, the comparison between student survey 2 and the teacher survey showed insignificant differences in mean values, with 42.43 for students and 43.33 for teachers. This led the researcher to conclude that experience and understanding of the Canvas LMS had a positive impact on both groups, perceiving it as an effective platform. By confirming the above results, thematic analysis exercised on the qualitative data indicated the ease of use, increased motivation and accessibility as contributing to the user's positive attitude when using the application. Thus, with the identification of benefits achieved through Canvas which outweigh the difficulties; poor network and lack of knowledge in technology, the study recommends the necessity for higher studies institutes to integrate the same for an enhanced English language teaching and learning experience in tertiary education.

Keywords: Canvas, Effectiveness, Learning Management System, Technology, User perception

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Abstract No: HSS 03 Humanities, and Social Sciences

What's Wrong with Being Gay? It's OK: A Critical Review of the Rights of Same-Sex Couples in Sri Lanka

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Human Rights have developed in stature and content over several decades, especially since the end of the Second World War. Sri Lanka, a party to most of the major human rights treaties in the world, remains reluctant to properly recognise and advance the rights of same-sex couples, where the topic is considered a social taboo. It has become controversial since it challenges the status quo of society's prevailing social, cultural, and religious values. Using the doctrinal approach embedded in the Qualitative methodology with the use of thematic analysis in reviewing primary sources of the Constitution, statutes and decided case law, and secondary sources inclusive of journal articles this study endeavours to examine whether the existing legal framework can adequately protect the rights of same-sex couples in the county. The results reveal that prevailing social, cultural, and political ideologies do not fit well with recognising or enhancing same-sex couples' rights in Sri Lanka. The existing legal framework does not provide adequate safeguards and protections for same-sex couples. The country's Penal Code criminalises sexual intercourse between people of the same sexes. While the Supreme Court has held that the proposed amendment to the Penal Code that seeks to decriminalise sexual intercourse between same-sex couples is compatible with the Constitution, the amendment remains as a Bill without much debate and discussion. Compared to Sri Lanka, even though countries such as India have decriminalised sexual intercourse between same-sex, the lack of political will and the social taboos attached to recognising or accepting same-sex couples as part and parcel of the society have negatively affected the enjoyment and worthwhile contribution of such to the community as well. Therefore, it is suggested that the authorities take adequate measures to recognise and enhance same-sex couples' rights in Sri Lanka, keeping to its international human rights obligations.

Keywords: Human Rights**,** Right to Equality, Same-Sex Couples.

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Abstract No: HSS 04 Humanities, and Social Sciences

Teachers' perspective on the influence of first language in the English as a second language classroom

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The use of the first language (L1) in the English as a Second Language (ESL) classroom is a frequently discussed topic. There are different perspectives regarding the use of L1, and the most common idea is that L1 should not be used in the ESL classroom. However, some learners encounter several issues in understanding the lesson when it is conducted without using L1. This study, therefore, aims to identify whether the use of L1 helps to improve the student's performance in the ESL classroom. The data of this study were gathered from 25 teachers who belong to a particular state university in Sri Lanka. The data collection was done based on a random basis. An online questionnaire and semi-structured interviews were conducted with ESL teachers. The study design is mixed-method. The study also employed data analysis techniques to systematically assess the impact of L1 usage on student performance in the ESL classroom. The results of the study revealed that the majority (72%) of the teachers have a positive approach toward using L1 in the ESL classroom. The teachers mentioned that the students who do not respond when the lesson is entirely delivered in the English language tend to ask questions when L1 is used. However, the teachers stated that they do not prefer to entirely use L1 but to use it only when it is necessary such as in clarifying complex content, providing instructions and feedback, explaining new vocabulary, etc. Yet, they like to support the students with the L1 whenever the students need their assistance in understanding the lesson which makes them more confident while learning English. In conclusion, it could be stated that the usage of L1 in the ESL classroom inspires the students to actively engage in the classroom as they feel more comfortable in learning.

Keywords: English as a second language, First language, Teachers' perspective

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Abstract No: HSS 05 Humanities, and Social Sciences

Women in urban slums: with special reference to two urban slums in Gampaha district in Sri Lanka

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Urbanization exerts a profound impact on societies, particularly in developing nations, giving rise to a multitude of socio-economic and political challenges, especially among vulnerable sectors within these societies. The current research aims to address a pertinent research question: "How do the social and physical characteristics influence the lives of women residing in urban slums?" Further, the study sets out to achieve two primary objectives: (a) to examine the socio-economic status of women living in slums in Sri Lanka and (b) to explore the livelihood experiences of women in these slum. Employing a qualitative research methodology, the study specifically focused on two slums, namely Peliyagodawatta and Peliyagoda Gagabada East, within the Gampaha district, utilizing a purposive sampling approach. A total of 80 in-depth interviews were conducted by the researchers. The study reveals that the majority of Tamil women who migrated and got married demonstrate a greater degree of economic independence compared to their Sinhala and Muslim counterparts within these informal settlements. However, despite this economic autonomy, it becomes apparent that poverty-driven gender biases persist within marital relationships. Notably, the study identifies that the highest degree of dowry autonomy is observed among married Sinhala women. Furthermore, the findings highlight the significant role of internalized patriarchal norms in shaping gender roles among slum-dwelling women. The study also brings to light the prevailing issues of food and sanitation insecurities faced by women in these urban slums. Moreover, the research underscores the importance of social capital as an enabler for active participation of the female population in local-level politics. Overall, it is imperative for stakeholders to identify and implement equitable solutions to effectively address the challenges faced by urban slum-dwelling women in Sri Lanka.

Keywords: Dowry autonomy, Gender role, Patriarchal norms, Social capital, Urban slum

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Abstract No: HSS 06 Humanities, and Social Sciences

Enhancing undergraduates' academic writing skills with strategy training and revision feedback: in private and state universities in Sri Lanka

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Writing is one of the essential skills that should be practiced to communicate ideas, concepts and innovations in a broad academic environment. Being undergraduates at universities, students need to attend writing in scientific and technical reports, literature reviews and long essays where they encounter difficulties like structuring paragraphs, vocabulary and grammar. Thus, the study focused on enhancing the text quality of the academic writing of the undergraduates using writing training strategies: text structure application and summarizing or writing succinctly, along with providing feedback for revising through try-again feedback. Therefore, the research aims to find whether the text structure application and summarizing benefited in producing cohesion and coherence of the text in academic writing. Moreover, the study aimed to investigate whether try-again feedback improved the students' accuracy and critical analysis in the academic writing context. Fifty undergraduates from two state and private universities participated in the study. The students were divided into five groups and each group was given a pre-task. Then, the same task as a post-task was given after the practice and training related to writing for three weeks. Each group was given an English instructor to assess the paragraphs using the rubric and ratings. Limitations of the study were the sample size was small and the results could not be generalised due to the factors like experience, language proficiency and the practice of both the participant and the evaluator. The analyses of the data revealed that academic writing skills were positively affected by summarizing and text structure application in improving cohesion, coherence, grammar and vocabulary. Furthermore, try-again feedback had a direct impact on improving critical analysis and accuracy, thus enhancing the text quality which can be applied in universities.

Keywords: academic writing skills, revising feedback, summarizing strategy, text quality and undergraduates

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Abstract No: HSS 07 Humanities, and Social Sciences

A comparative study on prejudices of Sinhalese and Tamils towards each other in the post-war reconciliation process of Sri Lanka

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This study is based on the emerging challenges and constraints in the reconciliation process between Sinhalese and Tamils in Sri Lanka. Many scholarly readings highlight that the post-war reconciliation process is still a happenstance. Therefore, the emphasis of this study was based on the research problem of "What are the pro-factors behind the delay of the post-war reconciliation between Sinhalese and Tamils in Sri Lanka"? The objectives of the study were to observe the reasons behind the delay in the process and making viable recommendations to boost it, which is a national need. The study employed a mixed method to enrich the quality of the data. The quantitative data was collected from 200 respondents in six villages of the Trincomalee District using a structured questionnaire and qualitative data was collected by means of 24 interviews of key informants such as G.S officers. The study area was observed several times to collect data. Both qualitative and quantitative data were analyzed together to enrich the reliability of each other. The quantitative primary data was analyzed making use of mean, percentage, and mode. Qualitative data was analyzed over thematic analytical methods based on themes such as "prejudices based on ethnicity". The study found that the reconciliation process is becoming multifarious especially due to the prejudices, based on ethnicity and lack of humanity-based strategies. These findings will be very supportive to enhance the reconciliation process in a new angle. The study concludes that prejudices and intra-dependencies delay the reconciliation basically. Promoting mutual and interpersional inter-dependencies and implementing humanity-based strategies are crucial strategies to develop the reconciliation process. The study recommends applying theories like Human Needs and Inter-dependency to make policies in reconciliation. The study stresses studying political behaviour and its impact on reconciliation as further research.

Keywords: Humanity, Inter-dependency, Intra-dependency, Reconciliation, Struggle

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Abstract No: HSS 08 Humanities, and Social Sciences

The potentials of the coco coir-based industry to increase export earnings in Sri Lanka: A case study of Kuliyapitiya-West divisional secretariat division

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Next to tea, coconut cultivation is the most commercial crop in Sri Lanka. The coconut fiber-based product industry plays a significant role nationally as well as internationally as a small and medium-scale enterprise (SMEs) in Sri Lanka. The main objective of this study is to identify the potential of the coco coir-based industry to increase export earnings in Sri Lanka. Other than that, focus is given to discussing the importance and structure of the industry, its sources and products, the socio-economic situation of entrepreneurs in the industry, and the challenges faced by entrepreneurs in the industry. This study was based on a questionnaire survey, interviews with entrepreneurs, and ten case studies from the selected area. Therefore, research was conducted in an area under the Kuliyapitiya - West Divisional Secretariat Division in Kurunegala District. Descriptive statistics were used to analyze the data, and the study followed the qualitative method. According to the findings, 70% of enterprises can be considered medium-sized enterprises, and 30% of enterprises can be identified as small-scale enterprises in the area. Moreover, net monthly income is more than LKR 100,000. This is because 60% of enterprises are direct exporters of products. Findings of the study reveal that geographical situation, demand for eco-friendly products, sufficient unused raw materials, unique technology and unique fiber properties, modern technology, and untapped land are the main potentials of the coir industry to increase export earnings in the country. The main challenge faced by the industry is the shortage and high cost of raw materials. This study reveals that if entrepreneurs can obtain government support for both financial and non-financial purposes, it helps boost economic growth through the creation of foreign exchange for the economy.

Keywords: Commercial crop, Eco-friendly product, Foreign exchange, SMEs

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Abstract No: HSS 09 Humanities, and Social Sciences

An analysis of the war between King *Duṭugamunu* and *Elāra* from the Perspectives of International Humanitarian Law

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The war between King *Duṭugamunu* and *Elāra i*s the most significant singular war in the realm of international armed conflict (IAC) within Sri Lanka's extensive history. A local monarch waged it to unify the nation against an invading foreign force led by a foreign ruler who seized power through regicide. This historical conflict sparked extensive debates, criticisms, and varying interpretations, contributing to distortions of factual accounts. The studies analysing this battle from the perspectives of the modern International Humanitarian Law (IHL) is minimal. The branch of public international law that deals with IAC is International Humanitarian Law (IHL). The research problem that was investigated is 'Did the Sri Lankan monarch comply with the modern principles of International humanitarian Law when there were no such laws at that time in the world and thereby, does that monarch deserve to be called as the founder of IHL? Accordingly, this study aims at analysing the motives, intentions, and conduct including the pre-conflict, in-conflict, and post-conflict behaviour of key actors and the war's outcome from the perspectives of IHL. The methodology used for this study is literature review. It is qualitative and interpretative in nature. The historical sources, international conventions and national legislations were used as primary and secondary sources for this purpose. The focus of the analysis is the evaluation of IHL principles in the context of the historical war. This study provides a unique analysis that suggests the application of principles akin to modern IHL by the ruling monarch nearly two millennia before the formal establishment of such principles. The major finding are that some 2019 years prior to the international community introduced the modern IHL principles such as humanity, avoidance of unnecessary suffering, proportionality of damages, humane treatment of prisoners of war (POW) etc., the ruling Sri Lankan monarch has recognized and applied them in this war and has recognized the new principle of Eternal Honour to POWs which is yet to recognize by IHL.

Keywords: Humanitarian, International, Law, *Vijiṭapura*, War

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Abstract No: HSS 10 Humanities, and Social Sciences

User perception of Electronic Services (E-Services) in university libraries Sri Lanka

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Electronic services in university libraries refer to the digital and E-resources, tools, and services provided by the library to support teaching, learning, research, and information access in an online environment. These services aim to enhance access to information, facilitate efficient research processes, and provide a seamless user experience for users. This study explores user perceptions of E-services in university libraries, assesses their satisfaction levels with various information services, examines difficulties faced during utilization, and intends to offer recommendations for enhancing E-service provision in researched universities. These recommendations will focus on enhancing service quality, improving accessibility, and implementing new initiatives to serve the information needs of users. The survey research method was employed, involving the division of the population into two distinct groups. The first group comprised 500 individuals chosen randomly from frequent visitors to the main libraries, while the second group consisted of 192 permanent library staff members selected through random sampling. Data was gathered through the utilization of questionnaires, observations, and interviews. Five universities were selected to represent the Western Province in this research study. The data gathered from two separate questionnaires were analyzed using the SPSS 22.0, and the results were presented as percentage values. It was observed that there is a lack of adequate infrastructure for E-services in the university libraries. Users are motivated to seek information through both traditional (0.7%), electronic (33.0%) and (66.3%) for both methods. The findings indicate that a majority of respondents utilize E-services for accessing E-books (76.0%), E-journals (37.7%), and E-past papers (54.8%), while a smaller proportion makes use of online databases (19.1%) and accesses E-tutorials. Insufficient funding for universities to sustain E-services and E-resources in the long run, frequent power outages, limited proficiency in the English language, and a lack of knowledge and research evidence have highlighted the necessity for implementing reader education programs tailored to meet the specific needs of users. Based on these findings, several recommendations are proposed. Firstly, it is crucial to ensure regular updates to the library website to keep it current and user-friendly. Furthermore, expanding the spectrum of E-resources and implementing innovative E-services are vital steps in meeting user expectations within university libraries.

Keywords: E-Services, Sri Lanka, University Library, User Perception

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Abstract No: HSS 11 Humanities, and Social Sciences

Drawing associative pictures: a mnemonic in memorizing and determining grammatical genders of german nouns

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Learning German as a foreign language is often challenged by the complications in getting familiar with German nouns and their grammatical Genders. German Grammatical Gender system consists of three genders; masculine, feminine and neutral. In the acquisition of German as a foreign language, grammatical gender has often been viewed as a problem by both learners and teachers alike (Rogers, 1987). Majority of the learners find it challenging to determine the correct gender and thus make mistakes in the grammatical structure of the sentence. Therefore, it is essential to use different strategies to learn and memorize the grammatical gender of each German noun. The purpose of the study was to examine the impact of guiding the learners to draw pictures associating the German nouns and their grammatical gender on the skill of correctly determining the genders. 30 students representing the Higher National Diploma in Tourism and Hospitality Management (SLIATE) who learn German as a foreign language have been involved in two groups as the control and the treatment groups. Pre and post tests and a focus group discussion were carried out in collecting the data followed by a paired sample t-test and a Qualitative Data Analysis (Seidel, 1998). The key findings revealed that this visual learning technique had a clear impact on the learners. The learners responded correctly to the questions of determining the grammatical gender of the nouns than earlier. Focus group discussions emphasized the novelty and the stimulation added by the method. The participants also said that they begin to remember the pictures that they drew and it helps them to determine the gender of a particular noun correctly. The study accordingly recommends German teachers and learners to use the associative illustration method in learning and the grammatical genders of the German nouns.

Keywords: Associative pictures, German as a foreign language, German Grammatical Gender, Learner attitude, Pedagogy

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Abstract No: HSS 12 Humanities, and Social Sciences

Translating titles of literary works: A study based on Sherlock Holmes Stories translated by Chandana Mendis

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The title of a literary work shapes the view of the readers and makes them hold a preliminary conclusion on the composition they are about to read, by providing them with some indications of the content and plot. The purpose of the present study has been to examine the procedures utilized in translating work titles, with reference to Sherlock Holmes stories translated from English into Sinhalese by Chandana Mendis. A total of 191 translated stories published so far, based on Arthur Conon Doyle's canon of fifty-six short stories and four novels and 131 extracanonical stories written by different authors, were considered for the comparative analysis through which the differences between the titles appearing in the originals and translations were observed. Accordingly, it was revealed that three different procedures, namely, literally translating the original title, creating a target-language title relevant to the original title, and creating an entirely new target-language title that has no relevance to the original title, have been utilized by the translator. Creating a target language title relevant to the original has been the first-choice procedure, with 108 instances. Omitting and neutralizing some of the words appearing in the originals and adding new words are its primary attributes. Creating an entirely new target-language title has been the second most preferred procedure, with forty-seven instances. Although these titles are not relevant to the originals, they summarize the overall sense of the stories. These two procedures permit freedom and creativity to the translator and enable deviation from the original title to various extents. Literally translating the original title has been the least preferred procedure, with only thirty-six instances. These translations are grammatically accurate target language versions, produced by directly transferring the words of the originals. The findings of this study emphasize the free and creative nature of literary translation.

Keywords: literary translation, prose translation, Sherlock Holmes stories, titles, translation procedures

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Abstract No: HSS 13 Humanities, and Social Sciences

Expo-writing: A Strategy to Minimize Grammatical Errors

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This study aimed to minimize grammatical errors that occurred in the Professional Writing subject of ESL learners who follow the Higher National Diploma in English (HNDE) Programme at the Sri Lanka Institute of Advanced Technological Education (SLIATE). The research was undertaken with an experimental quantitative research design. This study was carried out on 150 students comprising full-time and part-time. Students of the Department of English from one of the Advanced Technological Institutes (ATI) in SLIATE were the samples for this study. To examine the grammatical errors such as omission, addition, misformation and misordering in the subject of Professional Writing, a pre-test was administered to the samples. Expo-writing was used as a strategy for the target group. Samples were instructed to exhibit all the learning activities assigned in professional writing contexts at the Expo-writing event conducted at the department at the end of the second semester of the 2020 Academic year. To observe whether there was a statistically remarkable difference between the pre-test and post-test, a paired samples t-test was administered to the experimental groups using SPSS statistical software. As per the performance in the post-test, the results showed that there was a statistically significant difference between the post-test scores of control group (M=70.9200, SD=2.60851) and experimental group (M=79.5067, SD=4.20544) with respect to the type of treatment ($t(74) = -16.072$, $p<.005$). Therefore, it can be said that those who received instruction through expo-writing learning activities showed significantly higher performance in their writing performance than those who received the instruction in the control group since expo-writing was used as a strategy to minimize grammatical errors. In addition, when ESL learners were supposed to exhibit their art of writing to others, expo-writing created a positive competitive exposure to communicate their thoughts via a written form using the least grammatical errors. Further, learning by seeing others' writings led ESL learners to a positive culture in improving professional writing.

Keywords: ESL, Exhibits, Expo-writing, Learning-activity, Professional-writing

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Abstract No: HSS 14 Humanities, and Social Sciences

The Impact of the medium of instruction on the grammatical errors committed by the English second language learners

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This study is aimed at investigating the interference of the medium of instruction on the grammatical errors committed by the learners in Deniyaya semi-urban area in order to explore the efficacy of the medium of instruction in the selected school in located in a semi-urban area. Here, the research problem highlights the fact that in the selected area even the English medium students have rare opportunities to use English outside of school as they are exposed to English language only in the school context. Accordingly, here the researcher examines the causes and the types of errors committed by the students' belonging to both medium classes as a case study. On this concern, by using the purposive sampling method a total of twenty students were selected on and were asked to write an essay on 'My Future Ambition '. The collected data were analysed both quantitatively and qualitatively. As discovered, the hypotheses assumed were supported by the findings. Accordingly, Compared to the English medium students, Sinhala medium Students have committed more inter – lingual errors. Moreover, it could be proved, as hypothesized, that there was a difference in the ranks of the errors done by English and Sinhala medium students, as omission was the most committed error type of the English medium students. Moreover, it was detected that there was a significant difference between the frequency of errors done by the English and Sinhala medium students, and it was also discovered that the medium of instruction has a direct influence on their language learning process. Based on the findings, the researcher presents solutions by suggesting the English teachers of Deniyaya area to use innovative and practical teaching methods and to enhance the exposure of the students to English.

Keywords: Addition, Error Analysis, Mis-information, Mis-ordering, omission

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Abstract No: HSS 15 Humanities, and Social Sciences

An analysis of the health communication characteristics of Buddhist Teaching

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Many Sri Lankans oppress by chronic illnesses and other acute illnesses. It is indicated by the National Survey on Self-reported Health in Sri Lanka 2014 report presented by the Department of Census and Statistics. A society suffering from diseases cannot be transformed into a developed society and a sick society is a hindrance to the development of a country. However, the community must empower to prevent this society from falling victim to diseases. It should be investigated through Buddhist teaching can be used for this social empowerment. This is because Sri Lankan society has created culture, art and crafts as well as ideas based on Buddhism. But to empower the community, it is necessary to find out there are health communication characteristics in the teachings of Buddhism. Accordingly, the problem of this research is whether are there health communication features in Buddhism? Can Buddhism be used to empower society in terms of health? This is a content analysis research and only the Vinaya pitaka is used from the Tripitaka, which contains the basic teaching of Buddhism. The Buddha has laid down various disciplinary rules for the healthy survival of monks and nuns. Unhealthy behaviour in the monk society itself has caused disciplinary rules to be imposed. And the Buddha defined in Dhammapada health excels all gains. Also, the definition of "Health" made by the World Health Organization is used to identify health issues. But here focus to physical health characteristics in Buddhist teaching. Social leaning theory, Reasoned action theory, and Convergence theory are used to analyse health communication characteristics. These theories are employed in health communication to influence and modify human behaviours. This is qualitative research. Accordingly, there are health communication features in Buddhist teaching, and society can be empowered in terms of health by using health communication theories.

Keywords: Buddhist philosophy, communication, health, health communication, society

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Abstract No: HSS 16 Humanities, and Social Sciences

Identifying the spatial distribution of drought risk zonations in the North Central Province of Sri Lanka

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Drought is a complex natural phenomenon induced by climate change, and it negatively affects many sectors creating massive socio-economic and environmental losses. North Central Province (NCP) of Sri Lanka is one area undergoing severe drought. Much research has been carried out on drought using different perspectives, but limited research is available on drought risk. The main objectives of this research were to identify the spatial distribution of drought risk and create a map. Multi-Criteria Decision Making (MCDM) method was utilised, where a hierarchy was developed using 16 factors under two main categories, i.e. hazard and vulnerability. Secondary data were collected from different institutions and databases. Pairwise comparison metrics were created to compare the 16 criteria, and Analytic Hierarchy Process (AHP) was used to find the weight of each criterion incorporating the views of 20 experts. Sixteen thematic map layers were created using Geographic Information System (GIS) arc map 10.8 and finally created the drought risk map using the weighted overly technique of GIS. Drought risk was classified into five classes: very low, low, moderate, high and very high. Results were presented by Divisional Secretariat (DS) levels. The results highlighted that drought risk has been distributed over NCP by different proportions. When analysing drought risk spatial distribution of NCP, 13%, 33%.23%, 22% and 9% belong to very low, low, moderate, high and very high categories, respectively. Especially the southern parts of the NCP belong to very low and low categories, and the west and east parts correlate with moderate categories. Towards the north parts of the NCP aligned with high and very high categories. This research will help for the decision-makers and the planers.

Keywords: AHP, Drought Hazard, MCDM, Risk, Vulnerability

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Abstract No: HSS 17 Humanities, and Social Sciences

Right to Participation of Students in Teaching- Learning Process

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This study aims to investigate the right to participation of children in the teaching-learning process. The objectives of the study include identifying the nature of participation rights in the teaching-learning process of grade 10 students, understanding the perception of teachers and principals regarding the right to participation in the teaching-learning process in selected schools, examining the strengths and weaknesses of participation rights in the teaching-learning process and providing recommendations to improve participation rights. The Sri Lankan education system, despite 32 years of ratifying the Convention on Rights of the Child, lacks significant implementation of participation rights in teaching and learning process which helps to create productive citizen through independent learning. Participation Right is one of the guiding principles of four guiding principles of United Nations Convention of Rights of Children Which is mainly woven on Article 12 and clusters with article 13,14,15,16,17,27 and 29 of UNCRC. The total sample included 103 students of grade 10, 63 teachers, and 5 principals from the Dehiwala Educational Division in the Western province. A descriptive survey research design was adopted. This gave a total sample of 171 respondents. The random sampling was used to sample out the students and the teachers and Purposive sampling for principals The data collection instruments have been included a questionnaire for teachers and students and an interview schedule for the principals, Document analysis was used to gather data on UNCRC. Findings are as follows: The study reveals a higher awareness of children's participation rights among principals, teachers and students, but also highlights challenges in implementing these rights in the teaching-learning process and Teachers should modify their attitudes and methodologies, and provide more opportunities with full of independency such as child-friendly schools to enhance participation rights in their teaching-learning process.

Key words : Participation Rights, Secondary Education, Teaching Learning Process

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Abstract No: HSS 18 Humanities, and Social Sciences

Perception of Using "Padlet" as a Multimodal Text to Enhance the first Year Undergraduates' Academic Writing Skills

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The possibility of incorporating all the means of meaning-making into efficient learning techniques has been made clear by the use of technology-based multimodal texts. The teaching atmosphere of online academic writing classes can be changed using technology-based multimodal texts. Therefore, the present study is attempted to identify the perceptions of using "Padlet" as a multimodal text to enhance the learners' academic writing skills for the first-year undergraduates of the Faculty of Science, University of Kelaniya. The study consisted of two research questions; a) what are the perceptions of the undergraduates on the usage of "Padlet" as a multimodal text to improve learners' academic writing? b) what are the learners of attitudes towards the "Padlet" as a collaborative interactive tool in the online class context? The sample was 100 first-year undergraduates from the Faculty of Science who follow the Academic Literacy II course in their second semester. The course was completely conducted online for thirteen weeks and all the writing tasks were carried out using "Padlet" as either individual or group writing tasks. The qualitative data were gathered using questionnaires, and semi-structured interviews. The collected data were analyzed using thematic analysis. The analysis of the data indicated that the learners have positive attitudes towards "Padlet" as a multimodal text to improve learners' academic writing skills as they found it allows them to easily interact with their peers in the online learning context, to read and comment on others' writings and thereby do the necessary editing and so on. Furthermore, it indicated its usage could enhance collaborative writing tasks in the online learning context. The findings of the present study will inform teachers on the usefulness and efficiency of integrating "Padlet" to enhance not only academic writing skills but also writing skills in general in both online and physical teaching contexts as a way to raise students' motivation, interest and engagement in the subject matter.

Keywords: Academic Writing, Multimodal Texts, Online Teaching, Padlet

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Abstract No: HSS 19 Humanities, and Social Sciences

The Effectiveness of Flipped Classroom Approach in Improving Writing Skills of First Year Undergraduates of University of Kelaniya, Sri Lanka

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Language practitioners, educators and researchers study on various teaching practices and simultaneously propose new methods to bring out the most productive and effective teaching practices to address the changing conditions of language needs of the learners. Nonetheless, literature claims that adult ESL learners lack English writing skills in required contexts. Hence, the present study is an attempt to address this issue by investigating (1) the effectiveness of the flipped classroom (FC) approach in improving writing skills of ESL learners (2) learners' perceptions towards integrating the FC approach and (3) challenges faced by lecturers using the FC approach. The ESL tertiary education institution was chosen as the research context and the study comprised a sample of stratified-randomly selected 120 firstyear undergraduates of the University of Kelaniya, whose proficiency was at the elementary level. The sample comprised of four groups; two control and two experimental groups, where traditional teaching and flipped based teaching was applied respectively. The data were collected utilizing a mixed method research paradigm including a pre-test / post-test design, an attitudinal questionnaire and semi-structured interviews. Accordingly, a Paired Samples T-test was used to determine the statistical significance of the undergraduates' test scores. Thus, a thematic analysis was conducted to analyze the open ended questionnaire items and the semi structured interviews. The findings reported that the mean scores of the post-test marks of experimental groups have surpassed the ones of the control group. As such, it points towards the effectiveness of the FC approach in improving writing skills of learners. The questionnaire analysis on undergraduates' perceptions towards this approach revealed their satisfaction whereas a few challenges were identified based on the lecturers' responses at the semi structured interviews. Conclusively, the researcher recommends ESL practitioners integrate the FC approach as it improves learners' writing skills.

Keywords: Challenges, English as a second language (ESL) context, Flipped classroom (FC) approach, Learner perceptions, Writing skills

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Abstract No: HSS 20 Humanities, and Social Sciences

Productivity of machine translation in translating technical documents: an analysis of Google Translate output

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Translation studies is a significant area in Applied Linguistics that has expanded its scope during the past years. In the early days, the translation process was performed manually as a human process, but technological advancement paved the way for upgrading the translation process easier and faster. As a result, Machine Translation, the method of translating a text using a Computer System gained vast popularity amidst some issues in the quality of the translation. Therefore, this study aims to examine the productivity of Machine Translation in translating six types of Technical Documents: a newspaper article, a notice, a job interview advertisement, an academic article, a circular, and a press release using Google Translate Output. Giving priority to the sentence pattern and the morphological difference in both language and the translation, the source texts were analysed. All these texts are in English and expect to be translated into Sinhalese using Google Translate. Apart from that, the present study plans to check the role of the post-editing process of technical documents. The results are analysed using the Mixed Research Method. As findings of this study, it was identified that Google Translate could identify most of the technical terms in the notice and the job advertisement out of all the documents. In much longer phrases in the newspaper article and the academic article, the content of the translation became complex to convey the exact meaning as there were few grammatical errors. In some instances, it was not productive enough to get a clear and faithful translation. However, these findings paved the way to conclude that, when comparing the productivity of these documents mentioned above, Google Translate is more applicable in more informative texts such as the notice and the advertisement in Technical Translation. However, post-editing process is required to deliver an accurate and high-quality output faithful to source text when translating technical documents**.**

Keywords: Machine translation, Post-editing, Quality, Technical documents

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Abstract No: HSS 21 Humanities, and Social Sciences

The influence of social media on the lives of the undergraduates of the Arts Faculties of the University of Kelaniya

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With the Covid-19 pandemic, the online education became vital in the higher education system in Sri Lanka. Therefore, the online education spread throughout the country irrespective of the practical problems such as unavailability of technical devices, poor internet connections, poor access to mobile data, financial difficulties etc. With the increase of the use of internet and online education, the use of social media has also increased. The undergraduates who were ignorant about the use of social media before the pandemic have learnt to use social media for different purposes only after the introduction, promotion and considerable advancement of the online education. This has a huge impact on the lives of the undergraduates. Hence, a study was conducted in June 2023 analyzing 50 responses for a questionnaire distributed among arts undergraduates of the University of Kelaniya, to evaluate the influence of social media on their lives. According to the responses, the most popular social media network among undergraduates of arts faculties of the University of Kelaniya was WhatsApp compared to Facebook, Viber, IMO and Instagram. WhatsApp was used by 68% of the students as their mainly used social media network. The majority (68%) of the undergraduates deem that they essentially need to use social media daily. Fifty percent of the undergraduates spend around six hours daily on social media. Ten percent of the undergraduates spend the whole day on social media daily. Only a 44% of the undergraduates think that they get stressed due to the usage of social media. The majority (94%) of the undergraduates deem that they gain happiness and mental satisfaction from social media. These results depend on their level of perception and understanding of the concept of happiness and mental satisfaction. According to the results, the social media have considerably influenced the lives of undergraduates.

Keywords: Mental Satisfaction, Online, Social Media, Undergraduates

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Abstract No: HSS 22 Humanities, and Social Sciences

Objectification of women in television advertising in Sri Lanka

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Today, women have become objects of marketing, and the ethics of women have indeed been disrupted due to the careless actions of television advertisers. Women are more vulnerable to objectification compared to men, which, in practice, leads to the reproduction of inequality. Consequently, the topic used to study is the Objectification of women in television advertising in Sri Lanka. The main objective of this paper was to identify the impacts of the objectification of women in television advertising in Sri Lanka. This study aimed to identify how women's stereotyping, sexual objectification, and patriarchy are prevalent in Sri Lankan advertising, mainly through a gender perspective. This paper discussed do advertisements force women to uphold certain body standards and do they affect women's self-esteem and value in society. The research methodology is based on secondary data from articles, journals, and websites on the subject and covers issues, particularly in the context of Sri Lanka. The research questions were studied by gathering both qualitative and quantitative data. Accordingly, a mixed-method research design was used for the study. The analysis was performed both qualitatively and quantitatively. Findings indicate that many advertisements are built on extreme sexist ideologies and heavily influence the way women are treated in real life. Television advertising in Sri Lanka is considered a powerful propagator of gender stereotypes. These advertisements promote women to uphold certain body standards and an unreachable beauty that can harm individuals. The study suggests that there is a contemporary need for mass media literacy programs targeting both media organizations and the public. It also suggests that an impartial policy framework is required. These research findings will assist television companies and relevant government authorities in adopting gatekeeping mechanisms to censor and control certain advertisements that exploit women for erotic and obscene purposes.

Keywords: Gender stereotypes, Objectification of women, Sex objects, Television advertising

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Abstract No: HSS 23 Humanities, and Social Sciences

Female use of cosmetics during the Roman Empire according to Juvenal

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The use of cosmetics by females in the Roman Empire (27 BCE - 476 CE) was a complex and contested issue. There was a wide range of opinions on the matter, from those who saw it as a sign of vanity and deceit to those who saw it as a way for women to enhance their natural beauty. This paper examines the use of cosmetics by females in the Roman Empire according to Juvenal's 'Sixteen Satires'. Juvenal was a Roman satirist who lived in the 1st century CE, and his satires provide a unique perspective on the social and cultural norms of the time. A close reading of Juvenal's 'Sixteen satires' will be done to examine his views on the use of cosmetics by females while being aware of literary biases and the voice of the poet. It will also draw on secondary scholarship on Juvenal, Roman culture, and the history of cosmetics. It is evident that Juvenal's views on the use of cosmetics by females are complex and contradictory. On one hand, he frequently condemns the practice, calling it excessive, vain, and unnatural. On the other hand, he also seems to accept, and even endorse, the use of cosmetics to a certain extent. Juvenal's satires provide a valuable lens through which to examine these different attitudes towards cosmetics. Subsequently, there can be seen a cultural expectation on Roman women to use cosmetics other than their personal preference. Moreover, there is a presence of male pressure on females to use cosmetics appropriately as they were ready with criticism for those who overdo it. Interestingly a common agreement can be identified on the fact that virtuous women must avoid the use of cosmetics. Juvenal's satires are still relevant today, as it provides an insight on how the views on the use of cosmetics are shaped by social and cultural factors.

Keywords: Women, Cosmetics, Empire, Deceitful, Beauty

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Abstract No: HSS 24 Humanities, and Social Sciences

A study on the influence of European heraldic visual designs on emblem designs of Sri Lanka

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Since the colonial period of Sri Lanka, emblems were used widely to identify different entities attached to the government. By the end of British rule, the use of emblems seems to have been widespread. It can be observed that many of these emblems have a similar appearance in the structure, use of shapes, and use of decorative visual elements. The problem of this research is, to what extent the European heraldic visual designs influenced the emblem designs of Sri Lanka? The objective is, to identify the influence of European heraldic visual designs in Sri Lankan emblem designs and to examine the visual representation of these emblems in relation to their context. This exploratory research uses qualitative methods to collect and examine data. Visual semiotics is used to analyze the visual representation of 40 emblems that were created during the latter half of the 19th century and in the 20th century. All the emblems selected for this study are of public entities in Sri Lanka. The results suggest that the majority of the selected emblems have a visual structure similar to European heraldic visual designs such as the British Royal coat of arms, combining several visual elements and text in a specific manner. However, the overall shape and the visual elements used in Sri Lankan emblems are entirely unique and inspired by traditional Sinhalese decorative design elements. There are also many common elements such as the lion passant, *Dharmachakra*, lotus petals, and sheaves of paddy signifying the Sri Lankan identity and communicating various ideas relevant to the entity that it represents. Despite the absence of a common regulation for creating emblems, there is a coherent nature in the visual structure of many of these emblems. It suggests that the visual structure of these emblems is influenced by European heraldic visual designs.

Keywords: emblem design, European heraldic visual design, Sri Lanka

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Abstract No: HSS 25 Humanities, and Social Sciences

An analysis of the employment among the undergraduates of the Arts Faculties of the University of Kelaniya

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The university system is facing a lot of new challenges as many other governmental, non-governmental and semi-government institutions in Sri Lanka. The economic crisis is one of the main issues faced by the university community i.e. university staff and undergraduates. As higher education system was adequately funded by the government and non-governmental sources before the economic crisis, the financial input was sufficient for the sustainability of the higher education systems i.e. UGC, state universities and Higher Educational Institutions etc. The most affected group within the higher education system of Sri Lanka during this financial crisis is the undergraduates. Hence, a study was conducted in June 2023 to quantitatively analyze the employment among the undergraduates of the Arts faculties of the University of Kelaniya. Fifty responses were collected randomly for a questionnaire. From the sample, 68% of the undergraduates were females while the rest i.e. 32% were males. As the income from scholarships and the money provided by the family are not sufficient for the studies, 44% of the respondents are engaged in some kind of employment. From them, 18% are involved in full-time employment while 28% are involved in part-time employment. Only a 10% are working on weekends. The majority (62%) of the respondents who are engaged in employment receive an income of 20,000-40,000 LKR per month from their employments. Only a 12% receives an income less than 20,000 LKR per month from their employments while 26% receive income of 40,000-60,000 LKR per month. According to the results, a considerable number of Arts undergraduates are facing financial difficulties and hence, engaged in employment during university education even though they want to spend much time on studies. This unnecessary employment causes an extra pressure and stress on the students and affects their success in education and productivity negatively.

Keywords: Employment, Income, Undergraduates

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Abstract No: HSS 26 Humanities, and Social Sciences

A socio-cultural study of taboo rendition in Sinhalese Fansubbing

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Audio-visual Translation is of utmost importance in the context of cultural and linguistic constraints that Sri Lankan society faces regarding access to foreign film products because of a variety of ideologies. This research examines the translation of taboo words in English language films subtitled into Sinhalese by Sri Lankan fansubbers. The corpus of the study is the English movie *Deadpool* and its' Sinhalese fansubs available on *baiscope.lk*, a leading fansub-providing website in Sri Lanka. The corpus was mainly selected based on two criteria: (1) a wide range of taboos used, and (2) availability of fan-produced Sinhalese subtitles. The present study attempts to investigate how taboo words, according to the ideologies in contemporary Sri Lankan society are presented. More specifically, this study addresses the following questions; 1) What are the strategies used by the translator in rendering taboo words in the target language? and 2) Does the translator tend to preserve the norms of the source or the target language in the rendition of taboo words? Two theoretical frameworks have been used for the classification of taboos, and analysis of translation strategies of taboos respectively. To identify and classify the taboo terms and expressions of the movie, the typology of taboo elements by Sharif and Darchinian was used. To analyse the translation strategies used to render them, translation strategies of taboos by Lovihandrie, Mujiyanto, and Sutopo were adopted. Based on the results, the translators' most used strategies for the translation of taboo words were identified as taboo for taboo, substitution, euphemism, omission, and translation by a more general word. Further analysis suggested that the translator's approach was influenced by the source culture norms rather than the target culture norms shown by the translator's attempts to preserve as many taboos as possible despite the cultural ideologies ingrained in Sri Lankan society.

Keywords: Audio-Visual Translation, Fansubbing, Subtitling, Taboo language, Translation Strategies

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Abstract No: HSS 27 Humanities, and Social Sciences

A study of the role of television political talk show in creating political public relations

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Television political talk shows function strongly as an intermediary between the politician and the public in building political public relations. The purpose of this study is to study the role played by television political talk shows in creating political public relations. To create political public relations, the role of the political talk show for the politician and the role of the political talk show for the people were studied separately. The research has been conducted as a mixed research method based on both qualitative and quantitative methods as study methodologies. To collect qualitative data, two political talk shows broadcast on the government channels National Television and ITN and two political talk shows broadcast on the private channels Derana and Sirasa were subjected to thematic content analysis. To collect quantitative data, data was collected by selecting 100 people who watch political talk shows in Gampaha district, which has the highest number of registered voters in Sri Lanka. SPSS (Statistical Package for the Social Sciences) was used for data analysis. Findings showed that television political talk shows provide politicians with the opportunity and sufficient airtime to express their views, state their policies, and respond to current events or controversies through live engagement with viewers. On the other hand, political talk shows were found to help create political awareness among viewers, shape public opinion, influence attitudes, raise the standing of politicians in the eyes of the public, and bring people closer to the political process and the politician. Accordingly, it can be indicated that television political talk shows play a major role as a force for creating political public relations between the public and the politician.

Keywords: Political awareness, Political public relations, Political talk show, Public opinion, Television talk show

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Abstract No: HSS 28 Humanities, and Social Sciences

Factors affecting students' acceptance of E-learning in Sri Lanka: Evidence from social sciences undergraduates of University of Kelaniya

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E-learning is fast becoming an essential tool that is widely used and implemented by educational institutes and universities across the globe. Although elearning initiatives have advanced in developed countries, it is still in its early phases in many developing countries, including Sri Lanka. This study aims to uncover the factors influencing students' acceptance of e-learning among social sciences undergraduates at the University of Kelaniya. To accomplish this goal, employed a quantitative research approach and collected data through a structured questionnaire. The study utilized a convenient sample method, with 252 undergraduates participating in the survey. The sample size was determined using Morgan's Theory. To analyze the received questionnaire data, SPSS (Statistical Package for the Social Science) was used. To interpret the gathered data, descriptive statistical techniques, including mean, mode, standard deviation, correlation coefficients, and simple regression were used. This study identified key factors significantly affecting students' intention to use e-learning. These factors include system quality, information quality, content quality, computer self-efficacy, subject norm, and accessibility. These elements strongly influence students' inclination to embrace e-learning for their educational pursuits. In contrast, the factors of enjoyment and playfulness demonstrated a weak relationship with student's intention to use e-learning. To enhance learner engagement, we recommend incorporating audio-visual aids, animated simulations, and experiment videos within e-learning content. Additionally, instructors, designers, and developers should prioritize creating user-friendly interfaces to improve the acceptance and adoption of e-learning systems. This research contributes to the literature on technology acceptance theory by developing a comprehensive model tailored to social sciences undergraduates at the University of Kelaniya. Our findings offer actionable insights for educational policymakers, emphasizing the significance of system quality, information quality, content quality, computer self-efficacy, subject norm, and accessibility in promoting e-learning adoption. Addressing these factors, along with incorporating engaging multimedia elements, can enhance the success of e-learning initiatives, especially in developing countries like Sri Lanka. In summary, this study provides valuable recommendations for policymakers in the education sector to improve e-learning outcomes, addressing the evolving needs of students in the digital age.

Keywords: E-learning, Higher education, Students' acceptance, TAM

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Abstract No: HSS 29 Humanities, and Social Sciences

Exploring the impact of Focus on Form instruction in teaching grammar to ESL undergraduates in the Sri Lankan context

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A preponderance of ESL undergraduates find it challenging to develop their grammatical knowledge to express themselves accurately and fluently in speech or writing despite the years of learning grammar with the use of form-focused instruction and meaning-focused instruction at their secondary schools. This action research thus explored the impact of using the twin-track approach, Focus on Form (FonF) instruction in teaching grammar to ESL undergraduates to determine whether this approach can address issues the undergraduates experience in terms of developing and implementing grammatical knowledge. In this pursuit, the first-year undergraduates of the Faculty of Humanities and Social Sciences of the University of Ruhuna were selected as the sample for the study. The FonF instruction was then implemented to the experimental group and the control group experienced traditional methods for a semester. A pretest and posttest design was utilized to obtain quantitative data for the study whilst semi-structured group interviews were administered to the experimental group to accumulate qualitative data to explore the impact of the intervention. It was discovered that the FonF instruction has positively contributed to the grammar development of the undergraduates. The priming effect acquired by the undergraduates through consciousness-raising tasks and the corrective feedback provided by the facilitator in terms of the perceived problems with production and comprehension has profoundly facilitated the process of their interlanguage development. The experimental group prefers the FonF instruction to traditional methods since it has enabled them to witness their own progress and confidence in the production of the target language irrespective of the inevitable developmental errors. Moreover, the scores obtained for the pretest and posttest ensured the aforementioned progress gained through the FonF instruction that has aided the undergraduates to draw their attention to linguistic code features in communicative contexts in enhancing their grammatical development and production.

Keywords: focus on form, grammar, production

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Abstract No: HSS 30 Humanities, and Social Sciences

New approach for translations of literature written in lesser-known languages based on creative strategies of ancient Sinhala literary translation traditions

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Mainstream translation studies is largely dominated by western or dominant non-western approaches to translation. Western and dominant non-western theorists have evolved these approaches from their own dominant cultural contexts based on their own cultural traditions. These approaches fail to do justice to translations of literature written in lesser-known languages. In spite of the rich translation traditions of lesser-known cultures, lesser-known traditions remain a neglected area of study. The aim of the current study was to examine the translation processes of ancient translators of lesser-known cultures focusing on the differences between the ancient translation processes of lesser-known translators regarding the use of creativity and modern western and non-western approaches to translational creativity. The research question of the study was; what were the creative strategies used by ancient Sinhala translators and how can these strategies be applied to translate literature written in a lesser-known language translated into dominant languages. The study analyzed Pali to Sinhala translation processes of 12-13th century Sri Lanka, namely; Gurulugomi's "Amavatura" and its Pali source texts; Dharmasena's "Saddharmaratnavaliya" and its source text, Buddhaghosa's "Dhammapadatthakatha." The analysis revealed the translators had used two forms of creative strategies; creative cultural interventions and creative aesthetic interventions. These ancient Sinhala creative strategies were compared with approaches to creativity from dominant cultures; Boas-Brier and Holmans' western approach to creativity advocating familiarization and Spivak's dominant non-western approach to creativity advocating defamiliarization. The findings indicated the ancient Pali to Sinhala translators have used an approach that deviates from dominant approaches. This approach based on creative strategies of ancient Sinhala translators can be applied to translations of literature written in lesser-known languages. We have named this new approach the Majjima Patipada approach.

Keywords: Creativity, dominant non-western approaches, Lesser-known translation tradition, Western approaches

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Abstract No: HSS 31 Humanities, and Social Sciences

Unveiling citation patterns and scholarly impact: analysis of the Journal of Tropical Forestry and Environment from 2012 -2021

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Citation analysis is a popular and important tool employed by academic libraries to assess the impact and relevance of scholarly publications. This study presents a comprehensive citation analysis of the "Journal of Tropical Forestry and Environment", covering a decade (2012 – 2021). This is published by a prominent state university in Sri Lanka, and have a substantial recognition within the country, and indexed in the Directory of Open Access Journals (DOAJ). It addresses the research problem of understanding citation patterns of the journal aiming to identify the diversity of scholarly communication and its significance for academic libraries. The total number of articles published (148) during the 10-year timeframe was collected, and within this dataset, a total of 4,382 citations were analyzed. Analysis shows that, average citations per article was 30. Scholarly journals were the most prevalent type cited by researchers, 2,941 citations (67%), followed by books (14%), Reports (9%) conference papers (4%) and other resources. Most heavily cited journal was “Forest Ecology & Management”, An Elsevier publication. Authorship patterns revealed that citations with more than three authors were the most prominent, (26.8%) followed by two-authorship (25.4%) and single-authorship (24.2%). Total collaborative percentage is 68.8% which indicates the high collaborative nature of research studies. The contribution of corporate authorship was low (5.9%). The mean half-life of citations within the journal was 11 years, which indicates the longevity and impact of publications in the field. The findings guide collection development decisions of the library, subscriptions to journals, and supporting researchers in this field. It will empower libraries to promote collaboration, interdisciplinary connections, and enhance resource discovery.

Keywords: Academic libraries, Citation analysis, Journal of Tropical Forestry and Environment, Scholarly communication, Sri Lanka

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Abstract No: HSS 32 Humanities, and Social Sciences

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එල්. ජී. එස්. යූ. සඳරුවන්[1]*

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විසි වන සියවසයේ කතාබහට ලක්වූ ප්‍රධාන විෂය ධාරාවක් ලෙස ජනමාධ්‍ය හැඳින්විය හැක. ලෝකයේ ඕනෑම වෘත්තියකට අදාළව පවතින නිශ්චිත ආචාරධර්ම මාලාවක් ඇත. ඒ අනුව මෙම ජනමාධ්‍ය වෘත්තිය ද ආචාරධර්ම මාලාවකින් සමන්විත වේ. ආචාරධර්ම යනු ප්‍රකාශන ක්‍රියාවලිය තුළ නියැළෙන පුද්ගලයන් විසින් ගොඩනගා ගන්නා ලද වාරණ සමූහයකි. මෙය රටින් රටට වෙනස් වේ. පෞද්ගලිකත්වයේ අයිතිය යනු සරලවම යමෙකුට ඔවුන්ගේ පෞද්ගලික කරුණු සහ සබඳතා රහසිගතව තබා ගැනීමට ඇති අයිතියයි. මාධ්‍යකරණයේ යෙදෙන විට හා මාධ්‍යකරණය සඳහා තොරතුරු හඹා යන විට මෙම පෞද්ගලිකත්වයේ අයිතිය පිළිබඳව විශේෂ අවධානයක් යොමු කළ යුතුය. මෙම පර්යේෂණයේ, පර්යේෂණ ගැටලුව ලෙස මාධ්‍ය ආචාරධර්ම තුළ පෞද්ගලිකත්වයේ අයිතිය ආරක්ෂා කිරීමට ශ්‍රී ලංකා නීති පද්ධතියේ දායකත්වයක් තිබේද යන්න විමර්ශනය කෙරේ. මාධ්‍ය ආචාරධර්ම තුළ ඇති පෞද්ගලිකත්වයේ අයිතිය ආරක්ෂා කිරීමට ශ්‍රී ලංකා නීතියේ ඇති දායකත්වය අධ්‍යයනය කිරීම මෙහි ප්‍රධාන අරමුණ වේ. මෙම අධ්‍යයනය සඳහා ප්‍රාථමික දත්ත, ද්විතීක දත්ත හා තෘතීය දත්ත ද භාවිතා කෙරුණි. ප්‍රාථමික දත්ත සපයා ගැනීමේදී අදාළ ව්‍යවස්ථා ප්‍රතිපාදන පරිශීලනයෙන් හා සම්මුඛ සාකච්ඡා මාර්ගයෙන් තොරතුරු සපයා ගත් අතර, ද්විතීක දත්ත ලබාගැනීමේ දී දේශීය ග්‍රන්ථ හා වාර සඟරා පරිශීලනය කරන ලදී. තෘතීක දත්ත සපයා ගැනීමේදී මූලික වශයෙන් අන්තර්ජාලය හා පුවත්පත් භාවිත කෙරුණි. මේ සඳහා යෝජිත පර්යේෂණ ක්‍රමවේදය ලෙස මිශ්‍ර පර්යේෂණ ක්‍රමවේදය යොදා ගැනුණි. ගුණාත්මක පර්යේෂණ ක්‍රමවේදය යටතේ සම්මුඛ සාකච්ඡා මඟින් තොරතුරු එක්රැස් කරගැනීම සඳහා නීතිය පිළිබඳව පර්යේෂණය කරන ශ්‍රී ලංකා විවෘත විශ්වවිද්‍යාලයේ කථිකාචාර්යවරුන් දෙදෙනෙකු සමඟ සාකච්ඡා කෙරුණු අතර, ප්‍රමාණාත්මක පර්යේෂණ ක්‍රමවේදය යටතේ මාධ්‍ය ක්ෂේත්‍රයේ සේවය කරන නීති වෘත්තිකයන් පස් දෙනෙකු හා මාධ්‍යවේදීන් පස් දෙනෙකු තෝරාගෙන ඔවුන්ට ප්‍රශ්න මාලාවක් ලබාදී ප්‍රමාණාත්මක දත්ත එක්රැස් කර ගැනුණි. පෞද්ගලිකත්වයේ අයිතිය ආරක්ෂා කිරීමට ශ්‍රී ලංකාව තුළ නිශ්චිත නීති පද්ධතියක් ඇති බව මෙම අධ්‍යයනයේ දී සොයා ගැනුණි. එමෙන්ම මාධ්‍ය ආචාරධර්ම තුළ පෞද්ගලිකත්වයේ අයිතිය ආරක්ෂා කිරීමට ජාත්‍යන්තර සම්මුතීන්ට පවා ශ්‍රී ලංකාව බැඳී සිටින බව මෙම අධ්‍යයනයේ දී හෙළිවිය. මෙම අධ්‍යයනය මඟින් දැනට පවතින නීති තත්වය මූලික වශයෙන් අධ්‍යයනය කෙරුණු අතර, පවතින නීතිවල හිඩැස් පිරවීම සඳහා යෝජනා හා නිර්දේශ මෙම අධ්‍යයනය මඟින් සපයා ඇත.

මුඛ්‍ය පද : ආචාරධර්ම, ජනමාධ්‍ය, නීතිය, පෞද්ගලිකත්වයේ අයිතිය, වෘත්තිය

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Abstract No: HSS 33 Humanities, and Social Sciences

අංගම්පොර සටන් කලාවේ නිරායුධ සටන් ශිල්ප ආශ්‍රිත අස්පර්ශ්‍ය සංස්කෘතික උරුම දැනුම පිළිබඳ අධ්‍යයනයක්

ඒ. පී. කුමාරසිංහ[1]*

[1]පුස්තකාල හා විඥාපන විද්‍යා අධ්‍යයන අංශය, සමාජීය විද්‍යා පීඨය, කැලණිය විශ්වවිද්‍යාලය, ශ්‍රී ලංකාව

අංගම්පොර සටන් කලාවේ නිරායුධ සටන් ශිල්ප ආශ්‍රිත අස්පර්ශ්‍ය සංස්කෘතික උරුම දැනුම පිළිබඳ අධ්‍යයනයක් යන මාතෘකාව යටතේ මෙම පර්යේෂණය සිදුකරන ලදි. එහි දී ඓතිහාසික යුගයේ සිට ශ්‍රී ලංකාවේ පවතින අස්පර්ශ්‍ය සංස්කෘතික උරුම දැනුම සහිත විද්‍යාත්මක සටන් කලාවක් වන අංගම්පොර ශාස්ත්‍රයේ එන අංගම් නම් නිරායුධ සටන් ශිල්පය ආශ්‍රිත අස්පර්ශ්‍ය දැනුම පිළිබඳ අධ්‍යයනය කරන ලදි. පර්යේෂණය සඳහා කොළඹ, අනුරාධපුර හා මහනුවර යන දිස්ත්‍රික්ක තුනෙහි අංගම් සටන් ශාස්ත්‍රයෙහි නිපුණ ප්‍රවීණයන් 30ක් සමඟ පැවැත් වූ සම්මුඛ සාකච්ඡා තුළින් ද පුස්කොළ පොත් ආශ්‍රයෙන් ද ප්‍රාථමික දත්ත රැස්කරන ලදි. පර්යේෂණයේ ප්‍රධාන අරමුණ වූයේ අංගම්පොර සටන් කලාවේ නිරායුධ සටන් ශිල්ප ආශ්‍රිත අස්පර්ශ්‍ය සංස්කෘතික උරුම දැනුම පිළිබඳ අධ්‍යයනය කිරීමයි. පෞරාණික සටන් ශාස්ත්‍රයක් වශයෙන් හඳුනාගෙන ඇති අංගම්පොර සටන් කලාවේ එන අංගං යනු අවි ආයුධ රහිතව කරනු ලබන සටන් කලාවක් ය යන්න උපන්‍යාසය ලෙස යොදාගත්හ මෙම පර්යේෂණය සඳහා යොදාගනු ලැබූ පර්යේෂණ ක්‍රමවේදය වන්නේ මානව වංශ පර්යේෂණ ක්‍රමවේදය යි ඒ ඔස්සේ දියත් කළ පර්යේෂණය මගින් අංගං ශාස්ත්‍රයේ එන අත් ප්‍රහාර පා ප්‍රහාර අතින් හා පයින් කරන වැළකුම් පොර හරඹ ගැට හරඹ පැනුම් පිනුම් හා කරණම් යන ශිල්පීය ක්‍රමවේදයන් ද විවිධ ශාරීරික අභ්‍යාස පිළිබඳව ද අධ්‍යයනය කරන ලදි එහි දී සහභාගීත්ව නිරීක්ෂණය මගින් ප්‍රමාණාත්මක දත්ත ලෙස යොදාගත් නියැදිය වන අංගං ශිල්පීන් 30 දෙනා අංගං ශාස්ත්‍රයේ පවතින විවිධ විෂයය ක්ෂේත්‍රයන් අනුව වර්ග කර ඔවුන් භාවිත කරන එකිනෙකට වෙනස් නිරායුධ සටන් ශිල්පයන් වන අත් පහරවල් පා ප්‍රහාර ගැට ක්‍රම නිල ප්‍රහාර පොර හරඹ හා මායා අංගං ක්‍රමවේද පිළිබඳ අධ්‍යයනය කලහ දීර්ඝ ඉතිහාසයක පටන් ශ්‍රී ලංකාව සතුව පවතින අංගං සටන් ශාස්ත්‍රයේ එන අංගම් හෙවත් නිරායුධ සටන් ශිල්පය තුළ පවතින අස්පර්ශ්‍ය සංස්කෘතික උරුම දැනුම් සම්භාරය තුළ මිනිස් ශරීරයේ අත් පා හා හිස උපයෝගීතාවයෙන් සිදු කරන තාක්ෂණික හා විද්‍යාත්මක සටන් ශාස්ත්‍රයක් හා ඒ ආශ්‍රිත ගැට පොර හා ශාරීරික අභ්‍යාස මෙන්ම පැනුම් හා කරණම් යන ශිල්පයන් ද පවතින බවත් මෙම සටන් ශිල්පය සඳහා කිසිදු අවි ආයුධයක් භාවිත නොකරන බවත් නිගමනය කරමි. විවිධ හේතූන් නිසා මෙම ශිල්පීය ක්‍රමවේදයන් වර්තමානය වන විට වියැකෙමින් යන බවට ද නිගමනය කරන අතර විවිධ මුද්‍රිත හෝ අමුද්‍රිත මෙන්ම පුද්ගල මූලාශ්‍රය ආශ්‍රයෙන් ෂත්‍ය අංගම් ශාස්ත්‍රය ආශ්‍රිත අස්පර්ශ්‍ය දැනුම අධ්‍යයනය කොට එම දැනුම අනාගත පර්යේෂකයන් උදෙසා වාර්තා කිරීම හා සංරක්ෂණය කිරීම සිදුකළ යුතු බව යෝජනා කරමි.

මුඛ්‍ය පද : අංගංපොර, අස්පර්ශ්‍ය සංස්කෘතිය, නිරායුධ සටන් ශිල්ප, ගැට හරඹ, පොර හරඹ

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Abstract No: HSS 34 Humanities, and Social Sciences

බඹර වළල්ල සිනමා කෘතියෙන් නිරූපිත සමාජ ස්තරායණය පිළිබඳ අධ්‍යයනයක්

එම්. ජේ. එස්. ආර්.හේමචන්ද්‍ර[1*]

[1]නාට්‍ය, සිනමා හා රූපවාහිනී අධ්‍යයන අංශය, කැලණිය විශ්වවිද්‍යාලය, ශ්‍රී ලංකාව

විවිධ සාධක මත තීරණය කරනු ලබන ධූරාවලි මත පදනම්ව තමන් සහ අනෙකුත් සාමාජිකයන් වර්ග කිරීමක් සිදු කිරීම සමාජ ස්ථාරායණය ලෙස හැඳින්වේ. එහි අර්ථය පදනම් වී ඇත්තේ විවිධ ස්තර හෝ ස්තරවලට සාපේක්ෂව සමාජය බෙදීම මත ය. වර්තමාන සමාජවල වඩාත් වැදගත් සමාජ ස්තරායණ ක්‍රමය ලෙස සමාජ පන්තිය දැකිය හැකිය. සමාජ ප්‍රතිදාන සමාජ පන්ති ස්තරායණයට සම්බන්ධව පවති. ප්‍රමුඛව කාර්ල් මාක්ස් සහ මැක්ස්වේබර් විසින් ඔවුන්ගේ සමාජ විද්‍යා න්‍යායන් විග්‍රහයන් තුළ සමාජ පංති බිහිවීමට පිළිවෙළින් ආර්ථිකය,සමාජ තත්වය හා බලය බලපාන බව සඳහන් කරනු ලැබ ඇත. අතුල ලියනගේ විසින් අධ්‍යක්ෂණය කරන ලද බඹර වළල්ල චිත්‍රපටය මෙරට ග්‍රාමීය සහ අර්ධ නාගරික සමාජ ස්තරයන් වටා නිර්මාණය වූ සිනමා කෘතියකි.මෙහි මැල් මහත්තයා නැමති චරිතය සහ පොඩි එකා නැමති චරිතය ප්‍රධාන චරිත ලෙස නිරූපණය වේ. මෙම පර්යේෂණයේ අරමුණ ලෙස මෙම චිත්‍රපටයේ නිරූපිත චරිතවල ස්වභාවය අනුව ඔවුන්ට සමාජයේ විවිධ ස්තරායණයන් හිමිවී ඇත්තේ කුමන සාධක මතද යන්න සහ සෙසු අරමුණු ලෙස කාර්ල් මාක්ස් සහ මැක්ස්වේබර් ගේ සමාජ පන්ති නිර්මාණය වීමට බලපාන සාධක ලාංකේය ජන සමාජය නිරූපණය කෙරෙන බඹර වළල්ල චිත්‍රපටය තුළ නිරූපණය වී ඇත්ද යන්න විමර්ශනය කිරීම දැක්විය හැක. මෙම පර්යේෂණයේ පර්යේෂණය ක්‍රමවේදය ලෙස ගුණාත්මක පර්යේෂණ ක්‍රමවේදය යොදාගෙන ඇති අතර ප්‍රාථමික දත්ත මූලාශ්‍ර ලෙස චිත්‍රපටය , අධ්‍යක්ෂකවරයාගේ සහ නළුනිළියන්ගේ ප්‍රකාශයන් සහ සමාජ විද්‍යා විෂය ප්‍රාමාණිකයන් සමඟ සහ කැලණිය විශ්වවිද්‍යාලයේ සිනමා හා රූපවාහිනී අධ්‍යයන විෂය හදාරන විද්‍යාර්ථීන් 10 දෙනෙකු සමඟ සිදුකළ සම්මුඛ සාකච්ඡා යොදාගත් අතර ද්විතීක මූලාශ්‍රය ලෙස කාර්ල් මාක්ස්ගේ සමාජ පන්ති බිහිවීම පිළිබඳ න්‍යාය සහ මැක්ස්වේබර් ගේ ධනය බලය හා ආධිපත්‍ය පිළිබඳ න්‍යාය යොදාගන්නා ලදී. මෙම පර්යේෂණය ඔස්සේ ලාංකේය ජන සමාජයේ මැල් නැමති චරිත සහ පොඩි එකා නැමති චරිත බිහිවීමට මැක්ස් වේබර් විසින් නිර්වචනය කරන ලද ධනය බලය සහ ආධිපත්‍ය යන සංකල්ප සහ කාර්ල් මාක්ස්ට අනුව ආර්ථිකය යන සාධක බහුලව හේතුවන අතර කුලය වැනි සාධක වර්තමානයේ සමාජ ස්තරායණය නිර්මාණය වීමට හේතු නොවන බව තහවුරු විය. තවද මෙම අධ්‍යයනය තුළින් සමාජ ස්තරායණය බිහිවීමට අධ්‍යාපනය ද ඍජු සාධකයක් වන බව තහවුරු විය.

මුඛ්‍ය පද : ආධිපත්‍ය, කාර්ල් මාක්ස්, සමාජ ස්තරායණය, සමාජ පන්ති, මැක්ස්වේබර්

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Abstract No: HSS 35 Humanities, and Social Sciences

මැදපෙරදිග රටවල විදේශගත වන ශ්‍රී ලාංකික කාන්තා ශ්‍රමිකයන්ගේ මානසික ගැටලු

එන්. එම්. එල්. විමලරත්න[1*], එච්. ජී. එම්. ශානිකා[1]

[1]දේශපාලන විද්‍යා අධ්‍යයනාංශය, සමාජීය විද්‍යා පීඨය, කැලණිය විශ්ව විද්‍යාලය, ශ්‍රී ලංකාව

යම් රටක ආර්ථිකයක් හැසිරවීමේදී එම රටේ ආනයනය සහ අපනයනය යනු තීරණාත්මක සාධකයකි. ප්‍රධාන වශයෙන් මෙරට රැකියා වියුක්ත ස්ත්‍රීහුද, සාපේක්ෂව ඊට අඩු වශයෙන් පුරුෂ පාර්ශ්වයද විදෙස් රැකියා සඳහා සංක්‍රමණය වෙති. මෙලෙස රැකියා සඳහා ශ්‍රමිකයන් ලෙස කාන්තාවන් විදේශයන්ට සංක්‍රමණය වීමෙන් ඔවුහු විශාල ලෙස සමාජ, කායික සහ මානසික ගැටලු රැසකට මුහුණ දෙති. විදේශ සේවා නියුක්ති වාර්තාවන්ට අනුව පසුගිය කාල සීමාවේ ගල්ෆ් ප්‍රදේශයේ සිට මෙරටට සංක්‍රමණය වූ කාන්තාවන් 71 දෙනෙකු උමතුව සහ බලවත් චිත්ත පීඩාවෙන් රෝගාතුරව ඇත. ශ්‍රමිකයන් විදේශගත වීමේදී සිය පෞද්ගලික සෞඛ්‍ය පිළිබඳව අඩු තක්සේරුවක යෙදෙන්නේ ඔවුන් තමන්ට බලපාන සෞඛ්‍ය ගැටලු මොනවාද යන්න නොදන්නා නිසාවෙනි. ඒ අනුව මැදපෙරදිග රටවල රැකියා සඳහා යොමුවන කාන්තාවන්ගේ මානසික ගැටලු මොනවාද යන්න අධ්‍යයනය කිරීම මෙම පර්යේෂණයේ මූලික පරමාර්ථය විය. ඊට අමතරව කාන්තාවන් විදේශගත වීමෙන් ඔවුන් මුහුණදෙන මානසික ගැටලුවලට විසඳුම් සොයා බැලීමද මෙහිදී සිදු කරනු ලැබේ. දත්ත ලබා ගැනීම සඳහා ශිල්ප ක්‍රම ලෙස ප්‍රශ්නාවලි සහ ව්‍යුහගත සම්මුඛ සාකච්ඡා ක්‍රමය යොදා ගනු ලැබීය. අදාළ නියදිය ලෙස සරල සසම්භාවී නියදීම ක්‍රමය යටතේ රත්නපුර දිස්ත්‍රික්කයේ කහවත්ත, මාදම්පේ, ගොඩකවෙල, පැල්මඩුල්ල, සන්නස්ගම යන ප්‍රාදේශීය ලේකම් කොට්ඨාස තුළින් කාන්තාවන් 50 දෙනෙකු තෝරා ගෙන ප්‍රශ්නාවලි සහ ව්‍යුහගත සම්මුඛ සාකච්ඡා යටතේ ඔවුන්ගෙන් දත්ත ලබා ගන්නා ලදී. ඒ අනුව දත්ත විශ්ලේෂණය සංඛ්‍යානමය මෘදුකාංග සහයෙන් සිදුකරන ලදී. දත්ත විශ්ලේෂණයේදී අනාවරණය වූයේ අධික රුධිර පීඩනය, දියවැඩියාව, හතිය, ස්නායු රෝග, අක්ෂි රෝග, හෘද රෝග වැනි ශාරීරික ආබාධ මෙන්ම මානසික ගැටලු ලෙස නුපුරුදු පරිසරයට ඇති බිය, භාෂාමය ගැටලු, පවුලෙන් ඈත් වීම යනාදී ගැටලු පවතින බව අනාවරණය විය. පුද්ගලයන් 52%කට මානසික ගැටලු ඇති බව තහවුරු විය. තවද රැකියා තත්වය අනුව විදෙස්ගත වීමේදී සෞඛ්‍ය රක්ෂණයක් හිමිවන බව හෙළිදරව් විය. විදේශගත වන කාන්තාවන්ගේ ගැටලු අවම කර විදේශගත කිරීම තුළින් ඵලදායී සේවාවන් ලබාගත හැකි බව සහ රජයේ අවධානය ඒ කෙරෙහි වැඩි වශයෙන් යොමු විය යුතු බව අවසාන වශයෙන් නිගමනය කළ හැකිය.

මුඛ්‍ය පද : විදේශගත, කාන්තා ශ්‍රමිකයන්, මැදපෙරදිග, ගැටලු

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Abstract No: HSS 36 Humanities, and Social Sciences

සමකාලීන සිංහල භාෂා භාවිතය මුහුණුපොතෙහි මීම්ස් තුළ පිළිබිඹු වන ආකාරය පිළිබඳ වාග්විද්‍යාත්මක අධ්‍යයනයක්

ඩබ්. එම්. එන්. කේ. කේ. හුලුගල්ල[1*]

[1]වාග්විද්‍යා අධ්‍යයනාංශය, කැලණිය විශ්වවිද්‍යාලය, ශ්‍රී ලංකාව.

භාෂාව සෑම කලෙක ම එකම ස්ථාවරත්වයේ නොපවතී. වෙනස්වන ලෝකයත් සමඟ නිරන්තරව නව්‍යකරණයට ලක්වීම එහි යථා ස්වභාවයයි. භාෂාවෙහි වාක්කෝෂය, ව්‍යාකරණය ආදී සෑම ක්ෂේත්‍රයක් තුළ ම මෙකී පරිණාමීය ලක්ෂණ දැක ගත හැකි වේ. ස්වකීය භාෂකයා සිය අදහස්, මතවාද සමාජගත කිරීමේහිලා සජීවීව භාවිත කරන භාෂණය වූ කලී සමකාලීන අර්බුද, නව්‍යතා ආදිය මත ශීඝ්‍රයෙන් වෙනස් වන්නකි. ඒ අනුව, මෙම පර්යේෂණයෙහි මුඛ්‍ය අරමුණ වනුයේ සමාජ මාධ්‍ය ජාලයක් වන මුහුණුපොතෙහි *මීම්ස්* තුළ පිළිබිඹු වන සමකාලීන සිංහල භාෂා භාවිතයෙහි යථා ස්වරූපය පිළිබඳ වාග්විද්‍යාත්මක විවරණයක යෙදීමයි. මෙම පර්යේෂණය හුදෙක් සිංහල භාෂාවේ භාෂණ පක්ෂයට පමණක් සීමා වේ. තාක්ෂණයේ දියුණුවත් සමඟ වයස, දැනුම් මට්ටම, තරාතිරම ආදියෙහි භේදයක් නොමැතිව සෑම කුලකයකට ම අයත් පුද්ගලයෝ සමාජ මාධ්‍ය ජාල භාවිත කරති. ඒ අනුව සමාජ මාධ්‍ය ජාලයක් වන මුහුණු පොත තුළ සිංහල භාෂාවේ තවත් එක් උපභාෂාත්මක ස්වරූපයක් නිර්මාණය වී ඇති ආකාරයක් දක්නට ලැබේ. ඒ අනුව, මෙහි පර්යේෂණ ගැටලුව වනුයේ සමකාලීන සිංහල භාෂා භාවිතය මුහුණුපොතෙහි *මීම්ස්* තුළ කවරාකාරයෙන් පිළිබිඹු වේ ද? යන්නයි. මෙහි පර්යේෂණ ක්‍රමවේදය වශයෙන් ප්‍රාථමික මූලාශ්‍රය වන මුහුණුපොතෙහි *මීම්ස්* ආශ්‍රයෙන් රැස් කරගත් දත්ත වාග්විද්‍යාත්මක සිද්ධාන්ත ආශ්‍රයෙන් විශ්ලේෂණය කර ඇති අතර මුහුණුපොතෙහි සෙවුම් යන්ත්‍රයෙන් පරීක්ෂා කිරීමේ දී *මීම්ස්* නැමැති ශීර්ෂය සහිතව හමු වන පළමු මුහුණුපොත් පිටු දහය ආශ්‍රයෙන් පමණක් දත්ත රැස්කරගන්නා ලදි. පර්යේෂණයට අදාළ පොත්-පත්, සඟරා ආදිය ද්විතීයික මූලාශ්‍රය ලෙස භාවිත කර ඇත. මුහුණුපොතෙහි මීම්ස් මඟින් සිංහලයට පැමිණි සෘණිත පද, වෙනත් භාෂාවලින් සෘණිත සිංහලීකරණය කරගන්නා ලද පද, අලුතින් නිර්මාණය කරගත් පද, ඉංග්‍රීසි පද සමග සිංහල පදයක් එක් කර සකසා ගත් මිශ්‍රිත පද ආදී වශයෙන් සිංහල භාෂා භාවිතය මුහුණුපොතෙහි *මීම්ස්* තුළ පිළිඹිබු වන අයුරු අනාවරණය කරගැනීමට හැකි වීම මෙම පර්යේෂණයේ ප්‍රතිඵල වේ. ඒ අනුව, මෙම පර්යේෂණයේ අවසන් නිගමනය වනුයේ මුහුණුපොතෙහි *මීම්ස්* මඟින් සිංහල භාෂාවෙහි සමකාලීන භාෂා භාවිත ස්වරූපය මොනවට පිළිබිඹු වන බවයි.

මුඛ්‍ය පද : මුහුණුපොත, මීම්ස් , වාග්විද්‍යාව, සමකාලීන අර්බුද, සිංහල භාෂාව

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Abstract No: HSS 37 Humanities, and Social Sciences

ලාංකේය සිනමාව, කර්මාන්තමය දුබලතා සහ ප්‍රචාරණ ක්‍රමවේද පිළිබඳ අධ්‍යයනයක්

ඒ. එම්. ටී. ඩී. අබේසිංහ[1*]

[1]ජනලේඛන හා සංඛ්‍යාලේඛන දෙපාර්තමේන්තුව

සිනමාව කලාවක් ද කර්මාන්තයක් ද වේ. ලාංකේය සිනමාවේ කර්මාන්තමය ස්වරූපය සහ ප්‍රචාරණ ක්‍රමවේද පිළිබඳ අධ්‍යයනයේ දී ගෝලීය හා කලාපීය වශයෙන් සාර්ථක කලාත්මක සිනමාවක් දේශීය සිනමාව තුළ හඳුනාගත හැකිය. නමුත් සිනමාව කර්මාන්තයක් ලෙස වර්ධිත ලොව සෙසු රටවල හඳුනාගත හැකි කර්මාන්තමය ලක්ෂණ ලාංකේය සිනමාව තුළ හඳුනාගැනීම අසීරුය. කර්මාන්තමය වශයෙන් වර්ධිත හොලිවුඩ් සහ බොලිවුඩ් ප්‍රමුඛ කලාපීය රටවල සිනමා කර්මාන්ත තුළ හඳුනාගත හැකි ලක්ෂණ මොනවාද යන්නත්, ඒවා ලාංකේය සිනමාව තුළ කවරාකාරයකින් ක්‍රියාත්මක වී ඇති ද යන්නත් අධ්‍යයනයට පාත්‍ර වී ඇත. එසේම කලාපීය රටවල සිනමාව ප්‍රචාරණය සඳහා භාවිත දියුණු තාක්ෂණික හා නිර්මාණාත්මක ක්‍රමවේද මොනවාද යන්නත්, ලාංකේය සිනමාව ප්‍රචාරණය සඳහා භාවිත ප්‍රචාරණ ක්‍රමවේදයන්ගේ ස්වරූපය කවරාකාරද යන්නත් මෙහි මූලික පර්යේෂණ ගැටලුව ලෙස හඳුනාගෙන ගැනේ. සසම්භාවී නියැදි ක්‍රමය යටතේ ජීවත්වන ප්‍රදේශය (නාගරික, අර්ධ නාගරික, ග්‍රාමීය), ස්ත්‍රී පුරුෂ ගතිකත්වය, වයස, වෘත්තිය හා මාසික ආදායම යන විචල්‍ය මත පදනම්ව අහඹු ලෙස තෝරාගත් ප්‍රේක්ෂකයන් වෙත ප්‍රශ්නාවලියක් ඉදිරිපත් කරමින් දත්ත ඒකරාශී කරන ලදි. එම දත්ත ඉහත විචල්‍ය සමග සංසන්දනය කරමින් වෙන් වෙන් වශයෙන් තේරීමට බඳුන් කර විශ්ලේෂණයට ලක් කෙරිණි. ඒ අනුව ලාංකේය සිනමා ප්‍රේක්ෂකයාගේ සිනමාව විෂයෙහි පවත්නා රුචිකත්වය කවරාකාරද යන්නත්, ලාංකේය සිනමාවේ කර්මාන්තමය පසුබිම වර්ධනය උදෙසා භාවිත කළ හැකි ක්‍රමවේද මොනවාද යන්නත් අධ්‍යයනය මගින් හඳුනාගත හැකි විය. ලාංකේය ප්‍රේක්ෂකයා තුළ සිනමාව හා සම්බන්ධ ගැඹුරු සාවධාන හෘදයංගම ඇසුරක් ගොඩනැගීම සඳහා භාවිත කළ හැකි ප්‍රචාරණ මාධ්‍යයන් මොනවාද යන්න අනාවරණය කොටගත හැකි විය. එසේම ලාංකේය ප්‍රේක්ෂක විඤ්ඤාණයට ආමන්ත්‍රණය කළ හැකි චිත්‍රපට සහ වඩාත් රුචිකත්වයක් දක්වන සිනමා ශානරවලට අයත් සිනමා කෘති නිර්මාණය ඔස්සේ සිනමා ශාලාව හැර ගිය ප්‍රේක්ෂකයා යළි සිනමා ශාලාව වෙත රැගෙන ඒමට ඉහළ අවකාශයක් පවතින බව අනාවරණය විය. සිනමා ප්‍රේක්ෂකයාගේ රුචිකත්වය මත පදනම්ව ප්‍රචාරණ මාධ්‍යය තෝරාගැනීමත්, ඒ ඔස්සේ සිනමාව ජනගත කිරීම තුළින් ඉහළ ප්‍රේක්ෂකත්වයකට ආමන්ත්‍රණය කිරීමටත් අවකාශ හිමි වන බව හඳුනාගත හැකි විය.

මුඛ්‍ය පද : ප්‍රචාරණය, ප්‍රචාරණ මාධ්‍ය, ප්‍රේක්ෂකත්වය, ප්‍රේක්ෂක විඤ්ඤාණය, සිනමා ශානර

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Abstract No: HSS 38 Humanities, and Social Sciences

නූතනත්වය ස්ත්‍රී චින්තනයට සිදුකරන බලපෑම පිළිබඳ විමර්ශනාත්මක අධ්‍යයනයක්: උෂා ප්‍රියන්වදාගේ කෙටිකතා ඇසුරෙන්

ආර්. එම්. පී. එස්. එම්. රත්නායක[1*]

[1]විද්‍යා පීඨය, කැලණිය විශ්වවිද්‍යාලය, ශ්‍රී ලංකාව

හින්දී සාහිත්‍යයේ නූතන යුගයට අයත් 'නයී කහානී' (නව කෙටිකතා ව්‍යාපාරය) නම් සාහිත්‍ය සම්ප්‍රදායට නව මුහුණුවරක් ලබා දීමේ දී උෂා ප්‍රියන්වදාගේ භූමිකාව අද්විතීය වේ. නූතන හින්දී සාහිත්‍යයේ විශේෂ ධාරාවක් වන ප්‍රවාසී හින්දී සාහිත්‍යයේ අග්‍රගණ්‍ය ලේඛිකාවක වන ඇය තම නිර්මාණශීලී ලේඛනය සමාජගත කරන්නේ කෙටිකතාව සහ නවකතාව පාදක කොටගෙන ය. ඒ අතරිනුත් වඩාත් කැපී පෙනෙන්නේ ඇයගේ කෙටිකතාවයි. කෙටිකතාකාරිණියක ලෙස උෂා ප්‍රියන්වදාගේ කේන්ද්‍රීය අවධානය ලක්වූයේ ස්ත්‍රී පැවැත්ම, ස්ත්‍රී ආත්මය සහ ස්ත්‍රියගේ සමාජ භාවිතය සූක්ෂම ලෙස විදාරණය කිරීමට බව ඇයගේ කෙටිකතා විමර්ශනය කිරීමේ දී නිරීක්ෂණය කළ හැකි ය. උෂා ප්‍රියන්වදාගේ කෙටිකතා සාහිත්‍යය මුල් අවධියේ සහ පසු අවධියේ ලියන ලද නිර්මාණ ලෙස කොටස් දෙකකට බෙදා විමර්ශනයට ලක්කළ යුතු ය. එයට මූලික ම හේතුව මුල් අවධියේ කෙටිකතාවලට ඇය ජීවත් වූ භාරත භූමියේ පසුබිමත් පසු අවධියේ කෙටිකතාවලට ඇමරිකාවේ පුරවැසියෙකු ලෙස ජීවත්වීමේ පසුබිමත් කේන්ද්‍රය බවට පත්වීමය. එම වෙනස දෘෂ්ටිවාදාත්මකව දැවැන්ත බලපෑමක් ඇතිකළ ආකාරය නිරීක්ෂණය කළ හැකි ය. නූතනත්ව ව්‍යාපෘතිය ස්ත්‍රී පැවැත්මට ධනාත්මක සහ ඍණාත්මක යන දෙයාකාරයෙන් ම බලපෑමක් කර ඇති ආකාරය හඳුනාගත හැකිය. එහෙත් උෂා ප්‍රියන්වදාගේ කෙටිකතා සාහිත්‍යයේ ස්ත්‍රී චරිත නිරීක්ෂණය කිරීමේදී ඇයගේ පසු අවධියේ ලියන ලද කෙටිකතාවේ ස්ත්‍රියගේ නූතනත්ව ව්‍යපෘතියට මුහුණදීම සෑමවිටම, වේදනාවක්, අසහනකාරීභාවයක්, තනිකමක්, පීඩාවක් පවුල් කේන්ද්‍රීය සුරක්ෂිතභාවය අහිමිවීමක් ලෙස නිරූපණය වූ ආකාරය මා විසින් ගවේෂණය කරන ලදී. නූතනත්ව ව්‍යපෘතිය විසින් ස්ත්‍රී චින්තනයට සිදුකරන ලද බලපෑම කුමන ආකාරයේදැයි විමර්ශනයට ලක්කිරීම ප්‍රස්තුත අධ්‍යයනයේ අරමුණ වේ. පෙරදිග සහ අපරදිග සම්ප්‍රදාය තුළ ස්ත්‍රියගේ සමාජ ආත්මීය වෙනස අධ්‍යයයනයට ලක්කිරීම මෙම අධ්‍යයනයේ වැදගත්කම ලෙස තහවුරු කළ හැකි ය. නූතනත්වය ස්ත්‍රී චින්තනයට සිදුකරන බලපෑම උෂා ප්‍රියන්වදාගේ කෙටිකතා ඇසුරෙන් අධ්‍යයනයට ලක්වීම මා දන්නා තරමින් මෙතෙක් සිදු වී නැත. ප්‍රස්තුත අධ්‍යයනය සඳහා උෂා ප්‍රියන්වදාගේ කෙටිකතා සාහිත්‍යය ප්‍රාථමික දත්ත මූලාශ්‍රය ලෙස ද විෂයබද්ධ ශාස්ත්‍රීය ලිපි, සඟරා, සහ ග්‍රන්ථ ද්විතීය දත්ත මූලාශ්‍රය ලෙස ද භාවිත කරනු ලැබී ය. නූතනත්වය විසින් ඇතිකරන ප්‍රතිවිරෝධ ස්ත්‍රී පැවැත්මට බලපෑම් කරන ආකාරයත් ස්ත්‍රී ආත්මය එහි දී අර්බුදයට නතුවන ආකාරයත් චිත්‍රණය කිරීම උෂා ප්‍රියන්වදාගේ කෙටිකතා සාහිත්‍යයේ කේන්ද්‍රගත අනුභූතිය බව ප්‍රස්තුත අධ්‍යයනයේ නිගමනය ලෙස දැක්විය හැකි ය.

මුඛ්‍ය පද : උෂා ප්‍රියන්වදා, නයී කහානී, නූතනත්වය, ප්‍රවාසී සාහිත්‍යය, ස්ත්‍රී පැවැත්ම

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Abstract No: HSS 39 Humanities, and Social Sciences

ජනවාර්ගික අර්බුදයේදී යුද හමුදා සෙබළුන් ආබාධිත භාවයට පත්වීම පවුල් සංස්ථාව තුළ කලත්‍ර භූමිකාවට සිදුකළ බලපෑම

එස්. ඒ. අයි. මදුවන්ති[1*]

[1]සමාජීය විද්‍යා පීඨය, කැලණිය විශ්වවිද්‍යාලය, ශ්‍රී ලංකාව

දශක 3ක් පුරාවට ශ්‍රී ලංකාවේ පැවති කුරිරු ත්‍රස්තවාදය වෙනුවෙන් සටන් වැදි තරුණයන් බොහෝමයක් යුද්ධයෙන් දිවි පිදූ අතර තවත් බොහෝදෙනෙක් ආබාධිත බවට පත්වූහ. සෙබළුන්ගේ ආබාධිත වීම ඔවුන්ට පමණක් නොව සිය පවුල් සංස්ථාවටද විශාල ගැටළුවක් බවට පත්විය. සෙබළුන් යුද්ධයේ දී ආබාධිත වීම හේතුවෙන් ඔවුන්ගේ කලත්‍ර භූමිකාවට ඇති කෙරෙන බලපෑම යන මාතෘකාව යටතේ මෙම අධ්‍යයනය සිදු කෙරිණි. ඒ අනුව, සෙබළුන්ගේ ආබාධිත වීම නිසා ඔවුන්ගේ පවුල් ජීවිතයට ඇති කෙරෙන බලපෑම පිළිබඳ අධ්‍යයනය කිරීම මෙහි ප්‍රධාන අරමුණ වූ අතර, පුනරුත්ථාපන ආයතන තුළින් අබාධිත සෙබළුන්ගේ පවුල් කෙරෙහි දක්වන සහයෝගය පිළිබඳවත්, අබාධිත සෙබළුන්ගේ මානසිකත්වය පිළිබඳවත් අධ්‍යයනය මෙහි සෙසු අරමුණු විය. මෙම අරමුණු මත පිහිටා මා විසින්ම සමීක්ෂණ ක්‍රමය යටතේ ප්‍රශ්නාවලි, සම්මුඛ සාකච්ඡා සහ දුරකථන සංවාද ආදී ක්‍රම යොදාගෙන පර්යේෂණය සිදුකරන ලදි. ගම්පහ දිස්ත්‍රික්කයට අයත් රාගම රණවිරු සෙවන පුනරුත්ථාපන ආයතනය මේ සඳහා තෝරාගන්නා ලදි. මෙහි මුළු ආබාධිත සෙබළුන් 100ක් පමණ වූ බැවින් 'විවාහක පදනම' යටතේ විවාහක මුළු ආබාධිත සෙබළුන් 35ක් පමණ සසම්භාවී නියැඳුම් ක්‍රමය යටතේ නියැදිය වශයෙන් තෝරාගන්නා ලදි. තව ද, විවාහක සෙබළුන් 15 දෙනෙකුගේ භාර්යාවන් සමඟ සිදු කළ සම්මුඛ සාකච්ඡා සහ දුරකථන සංවාද මඟින් පර්යේෂණයට අවශ්‍ය දත්ත ලබාගන්නා ලදි. මෙම නිරීක්ෂණයන් මඟින් පුනරුත්ථාපන ආයතනය තුළ සිටින විවාහක ආබාධිත සෙබළුන්ගේ කලත්‍ර භූමිකාව තුළ ගැටළු රාශියක් පවතින බවත් ඔවුන්ගේ පවුල් පසුබිම තුළ ආර්ථිකය, ආරක්ෂාව, ලිංගිකත්වය, සෞඛ්‍ය, අධ්‍යාපනය මෙන්ම සමාජ සම්බන්ධතා පැවැත්වීම වැනි අංශ යටතේ ගැටළුකාරී තත්ත්වයන් පවතින බවත් අනාවරණය විය. එහි දී ප්‍රශ්නාවලි හා සම්මුඛ සාකච්ඡාවන්හි ප්‍රතිඵල පරීක්ෂා කිරීමේ දී ඉන් 95%ක් පමණ අදහස වූයේ, ඔවුන්ගේ ආබාධිතවීම සිය කලත්‍ර භූමිකාව කෙරෙහි බලපෑම් සිදු කළ බවයි. ඔවුන්ගේ භාර්යාවන් මඟින් ලබා ගත් දත්ත තුළින් ද අනාවරණය වූයේ සෙබළුන්ගේ ආබාධිත වීම ඔවුන්ගේ පවුල් ජීවිතයට බලපෑමක් ඇති කරන බවයි.

මුඛ්‍ය පද: ආබාධිත රණවිරුවෝ, කලත්‍ර භූමිකාව, පුනරුත්ථාපන ආයතන, මානසික මට්ටම, ත්‍රස්තවාදය

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Abstract No: HSS 40 Humanities, and Social Sciences

සිංහල වන්දනා කාව්‍යයන්හි විද්‍යමාන භාෂා ලක්ෂණ පිළිබඳ විමර්ශනාත්මක අධ්‍යයනයක් (තෝරා ගත් කෘති ඇසුරෙන්)

එන්. එම්. පතිරණ[1*]

[1]සිංහල අධ්‍යයනාංශය, පශ්චාද් උපාධි අධ්‍යයන පීඨය, කැලණිය විශ්වවිද්‍යාලය, ශ්‍රී ලංකාව

පද්‍ය සාහිත්‍යයෙහි උපශානරයක් වශයෙන් සිංහල වන්දනා කාව්‍ය වෙසෙස් වෙයි. මහින්දාගමනයත් සමග ලාංකේය සමාජයෙහි ඇති වුණු බෞද්ධාගමික ප්‍රබෝධය හේතුවෙන් රජවරුන් විසින් අනුගමනය කරන ලද විශාල පුණ්‍යකර්මයක් වූයේ සිද්ධස්ථාන වන්දනා කිරීමට යාමයි. එහි යනෙන අතරතුර දුෂ්කර ගමනෙහි විඩාව සංසිඳුවා ගැනීමට කවි කීම ආරම්භ විය. එහි ප්‍රතිඵලයක් වශයෙන් පශ්චාත්කාලීන ව වන්දනා කාව්‍ය නමැති සාහිත්‍යාංගය බිහි වූ අතර මධ්‍යකාලීන අවධිය වන විට වන්දනා කාව්‍ය රචනා කිරීම වර්ධනය විය. සිංහල වන්දනා කාව්‍යයන්හි සාර්ථකත්වයට හේතු වී ඇති භාෂා ලක්ෂණ කවරේ ද? යන්න පර්යේෂණ ගැටලුවයි. සිංහල වන්දනා කාව්‍යයන්හි විද්‍යමාන වන භාෂා ලක්ෂණ පිළිබඳ ව අධ්‍යයනය කිරීම පර්යේෂණ අරමුණයි. මෙහි පර්යේෂණ සීමාව වන්නේ ශ්‍රී පාදස්ථානය විෂය කොට ලියැවුණු වන්දනා කාව්‍ය වන *ශ්‍රීපාදපත්මය වන්දනා ගාථා සහ අභිනව හිමගත වර්ණනාව, පුරාණ සමනල හැල්ල* කෘති ද්විත්වයේ භාෂා ලක්ෂණ පමණක් අධ්‍යයනය කිරීමයි. මෙම පර්යේෂණය *ගුණාත්මක පර්යේෂණ ක්‍රමවේදය* යටතේ පුස්තකාලය සහ අන්තර්ජාලය භාවිතයෙන් සපයා ගන්නා ලද ප්‍රාථමික හා ද්විතීයික මූලාශ්‍රය දත්ත ආශ්‍රයෙන් සිදු කරන ලදී. කාව්‍ය නිර්මාණකරුවාගේ ප්‍රධාන මෙවලම වනාහි භාෂාවයි. කිසියම් කෘතියක භාෂා ලක්ෂණ එම කෘතියෙහි අගය තීව්‍ර කිරීම උදෙසා හේතු වේ. ශ්‍රී පාදස්ථානය වස්තු විෂය කරගෙන ජන කාව්‍ය ශෛලියෙන් ලියැවුණු මෙම වන්දනා කාව්‍ය කෘති ද්විත්වයේ ම සරල ප්‍රකාශන රීතිය සහ ගැමි බස් වහර, දේශීය උපමා රූපක යෝජනය, එළිසමය ආරක්ෂා කිරීම, අනුප්‍රාස ජනනය, රිද්මානුකූල භාෂා විලාසය නිරූපණය වේ. එසේ ම සංක්ෂිප්ත භාෂා ශෛලිය, සම්භාව්‍ය සාහිත්‍යයේ දී දෝෂයක් ලෙස සැලකූ පුනරුක්තය උපක්‍රමශීලී ව භාවිතය, *ශ්‍රීපාදපත්මය වන්දනා ගාථා සහ අභිනව හිමගත වර්ණනාව* කෘතියෙහි සංස්කෘත හා පාලි ආභාසය මෙම කෘතිවල අන්තර්ගත වී ඇති භාෂා ලක්ෂණ වශයෙන් හඳුනා ගත හැකි ය. එබැවින් සිංහල වන්දනා කාව්‍ය නිර්මාණකරුවා මෙවැනි භාෂා ලක්ෂණ අනුගමනය කිරීමට පෙලඹීම හේතුවෙන් ජන කාව්‍ය නිර්මාණකරුවෙකු වුවත්, උපක්‍රමශීලී ව භාෂාව හැසිරවීමෙහි ලා ඔහු සතු නිසර්ග ප්‍රතිභාව විශද කරවන අතර එය කෘතියේ රසය තීව්‍ර කරමින් සාර්ථක නිර්මාණයක් බිහි කිරීමට ඉවහල් වී ඇති වැදගත් ව්‍යූහාත්මක අංගයක් බවට පත් වී ඇති බවත් නිගමනය කළ හැකි ය.

මුඛ්‍ය පද : භාෂා ලක්ෂණ, මධ්‍යකාලීන අවධිය, මහින්දාගමනය, ශ්‍රී පාදස්ථානය, සිංහල වන්දනා කාව්‍ය

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Abstract No: HSS 41 Humanities, and Social Sciences

පාරිභෝගිකයා සංජානමය ලෙස පෙළඹවීම සඳහා වෙළඳ දැන්වීම්කරණයේ දී භාවිත කරන නිර්මාණාත්මක උපක්‍රම (කොකා - කෝලා නිෂ්පාදනයට විශේෂිතව)

ඩබ්ලිව්. ඒ. සඳමාලි විජේසිංහ[1*]

[1]නාට්‍ය, සිනමා හා රූපවාහිනී අධ්‍යයන අංශය, මානව ශාස්ත්‍ර පීඨය, කැලණිය විශ්වවිද්‍යාලය.

භාණ්ඩ හා සේවා මිලදී ගන්නා ආකාරය සහ භාවිත කරන ආකාරය පිළිබඳ ව පාරිභෝගිකයා දැනුවත් කිරීම සඳහා වෙළඳ ප්‍රචාරණයේ දී යොදාගන්නා එක් සන්නිවේදන ක්‍රමවේදයක් ලෙස වෙළඳ දැන්වීම්කරණය හඳුනාගත හැකිය. භාණ්ඩ හා සේවා මිලදී ගැනීම සඳහා පාරිභෝගිකයා *සංජානමය* ලෙස පෙළඹවීමක් එමඟින් ඇතිකරනු ලබයි. *AIDA* නම් සංකල්පය වෙළඳ දැන්වීම් නිර්මාණයේ දී යොදාගනී. මෙම ක්‍රියාවලියේ දී ආයතන තම *කථිපයාධිකාරීත්වය* ඉස්මතු කිරීමට මෙන්ම පාරිභෝගිකයා තුළ සංජානමය වෙනසක් ඇතිකර භාණ්ඩ මිලදී ගැනීමට පෙළඹවීමක් ඇතිකිරීම සඳහා නිර්මාණකරුවන් විවිධ උපක්‍රම භාවිත කරන බව හඳුනා ගත හැකිය. මෙහිදී නිර්මාණාත්මක උපක්‍රම ප්‍රධාන වේ. මෙලෙස වෙළඳ දැන්වීමක් කලාත්මක ගුණයන්ගෙන් අනුන ව නිර්මාණය කිරීමේ දී යොදාගන්නා නිර්මාණාත්මක උපක්‍රම මොනවාද යන්න හඳුනා ගැනීම මෙම පර්යේෂණයේ ප්‍රධාන අරමුණ වේ. වෙළඳ ප්‍රචාරණය සඳහා යොදාගන්නා රූපවාහිනිය, ගුවන්විදුලිය, පුවත්පත්, සඟරා සහ අන්තර්ජාලය වැනි විවිධ මාධ්‍යයන් අතරින් රූපවාහිනිය, ඔස්සේ ප්‍රචාරණය වන වෙළඳ දැන්වීම් මෙම පර්යේෂණය සඳහා යොදාගැනිණ. විවිධ නිෂ්පාදන හා සේවා සම්බන්ධ වෙළඳ දැන්වීම් අතරින් මෙම පර්යේෂණයේ නියැදිය ලෙස කොකා-කෝලා නිෂ්පාදනය සම්බන්ධ වෙළඳ දැන්වීම් තෝරාගන්නා ලදී. පර්යේෂණ ක්‍රමවේදය ලෙස ප්‍රමාණාත්මක හා ගුණාත්මක ක්‍රමවේදයන් යොදාගත් අතර දත්ත රැස්කිරීම සඳහා ප්‍රාථමික හා ද්විතියික මූලාශ්‍රය භාවිත කෙරිණ. මෙහිදී වෙළඳ දැන්වීම් නිර්මාණකරුවන් සහ පාරිභෝගිකයන් සමඟ සම්මුඛ සාකච්ඡා පැවැත්වීම මෙන්ම අලෙවිකරණය සහ දැන්වීම්කරණය සම්බන්ධ ව ලියැවී ඇති ග්‍රන්ථ පරිශීලනය කරන ලදී. වෙළඳ දැන්වීම් නිර්මාණයේ දී ආකර්ෂණීය වර්ණ භාවිතය, රූප ඡේදනය, ආලෝකය භාවිතය, භාෂාව සහ ඉදිරිපත් කිරීමේ විලාසය, සංගීතය වැනි නිර්මාණාත්මක උපක්‍රම වැඩි වශයෙන් යොදාගන්නා බව මෙහිදී හඳුනා ගැනීමට හැකිවිය. පාරිභෝගිකයා වෙළඳ දැන්වීමක් දුටු සැණින් ඒ කෙරෙහි ආකර්ෂණය වීමට මෙවැනි උපක්‍රම හේතු වේ. මෙවැනි නිර්මාණාත්මක උපක්‍රම යොදාගැනීමෙන් පාරිභෝගිකයා ස'න්ජානමය වශයෙන් පෙළඹවීමක් කර තම කථිපයාධිකාරීත්වය ද පවත්වාගනිමින් අලෙවිකරණය ඉහළ නංවා ගැනීමට වෙළඳ ප්‍රචාරණ ආයතනවලට හැකියාව ලැබෙන බව මෙයින් නිගමනය කල හැකිය.

මුඛ්‍ය පද : නිර්මාණාත්මක උපක්‍රම, පාරිභෝගිකයා, වෙළඳ දැන්වීම්කරණය, ස'න්ජානමය පෙළඹවීම

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Abstract No: HSS 42 Humanities, and Social Sciences

ගෘහස්ථ ප්‍රචණ්ඩත්වයට ලක් වූ ශ්‍රී ලාංකික කාන්තාවන්ගේ සංකූටිත භාර්යා සහලක්ෂණය පිළිබඳ අධ්‍යයනයක් (Battered women syndrome)

කේ. පී. එච්. එම්. කාරියවසම්[1*]

[1]සමාජීය විද්‍යා පීඨය, කැලණිය විශ්වවිද්‍යාලය, ශ්‍රී ලංකාව

ගෘහස්ථ ප්‍රචණ්ඩත්වය කාන්තාවට එරෙහිව සමස්ත ලෝකය තුළම පොදුවේ සිදුවන බරපතල අපරාධයකි. ශ්‍රී ලංකාව තුළ වර්තමානය වන විට ගෘහස්ත ප්‍රචණ්ඩත්වය සුලභව වාර්තාවන අපරාධයක් බවට පත්ව ඇත. මෙයට ලක්වන කාන්තාවන් කායික, මානසික සහ සාමාජීය වශයෙන් විශාල පීඩනයකට පත්වී ඇත. එවැනි කාන්තාවන් දක්වන කායික, මානසික හා චර්යාමය ප්‍රතිචාර සමුහයක් ලෙස *සංකූටිත භාර්යා සහලක්ෂණය (Battered women syndrome)* හැඳින්වේ. ගෘහස්ථ ප්‍රචණ්ඩත්වයට ලක් වූ ලාංකික කාන්තාවන් තුළ සංකූටිත භාර්යා සහලක්ෂණය පවතී ද යන්න අධ්‍යනය කිරීම මෙම පර්යේෂණයේ මූලික අරමුණ විය. සංකූටිත භාර්යා සහලක්ෂණය සමග වෙනත් මානසික රෝග ඇති වීම අතර සහසම්බන්ධතාවය හදුනාගැනීම, එහි බලපෑමෙහි වෙනස අධ්‍යනය කිරීම සෙසු අරමුණ විය. ගෘහස්ථ ප්‍රචණ්ඩත්වයට ලක් වූ වයස අවුරුදු 18ත් 45ත් අතර කාන්තාවන් 15 දෙනකු නියැදිය ලෙස ගනිමින් සංකූටිත භාර්යා සහලක්ෂණයේ ලක්ෂණ ඇතුළත් ප්‍රශ්නාවලියක් ලබා දෙමින් දත්ත රැස්කර ඒවා ප්‍රමාණාත්මකව විශ්ලේෂණය කරන ලදී. පර්යේෂණ ප්‍රතිඵල අනුව සංකූටිත භාර්යා සහලක්ෂණයට අයත් කායික, මානසික හා චර්යාමය ලක්ෂණ අවම වශයෙන් එක් ලක්ෂණය බැගින් *ගෘහස්ථ ප්‍රචණ්ඩත්වයට* ලක් වූ කාන්තාවන් තුළ දක්නට ලැබෙන බවත් කායික ලක්ෂණවලට සාපේක්ෂව මානසික හා චර්යාමය ලක්ෂණ සංඛ්‍යානමය වශයෙන් වැඩි අගයක් පෙන්වන බවත් සොයා ගැනිණි. සංකූටිත භාර්යා සහලක්ෂණය තීව්‍ර මට්ටමින් පරීක්ෂාමාණීන් තුළ පවතින බවත්, වෙනත් මානසික රෝග ඇති වීම හා එහි රෝග ලක්ෂණ අතර ඉහළ ධනාත්මක සහසම්බන්ධයක් පවතින බවත් පර්යේෂණ ප්‍රතිඵල අනුව සොයා ගැනිණි. ගෘහස්ථ ප්‍රචණ්ඩත්වයට ලක් වූ කාන්තාවන්ගේ මානසික සෞඛ්‍ය නගා සිටුවීම සඳහා *උපදේශන සහ මනෝ ප්‍රතිකාර* වැඩසටහන් ක්‍රියාත්මක කිරීමත් ඔවුන් ඒ සඳහා යොමු කිරීම අවශ්‍ය සාධකයක් ලෙස පර්යේෂණයේ දී තහවුරු විය. අනාගත පර්යේෂණයක් සඳහා සමාජය තුළ ප්‍රචණ්ඩ ක්‍රියාවන්ට ලක් වූ පුරුෂයන් තුළ සංකූටිත පුද්ගල ව්‍යසන ලක්ෂණ පවතී ද යන්න අධ්‍යනය කිරීම සහ සංකූටිත ව්‍යසන සහලක්ෂණයේ බලපෑම අතර සහසම්බන්ධතාව සෙවීම සුදුසු යැයි යෝජනා කළ හැකිය.

මුඛ්‍ය පද : උපදේශන සහ මනෝ ප්‍රතිකාර ක්‍රම, ගෘහස්ථ ප්‍රචණ්ඩත්වය, මානසික රෝග, ශ්‍රී ලාංකික කාන්තාවන්, සංකූටිත භාර්යා සහ ලක්ෂණය

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Abstract No: HSS 43 Humanities, and Social Sciences

ස්වාධීන රූපවාහිනී නාලිකාවේ විකාශය වූ ටෙලි නාට්‍යවල වර්තමාන ප්‍රගමනය පිළිබඳ ප්‍රේක්ෂක මතය

ජේ. ඒ. ටී. මාධව[1*]

[1]මානවශාස්ත්‍ර පීඨය, කැලණිය විශ්වවිද්‍යාලය, ශ්‍රී ලංකාව

ලාංකේය රූපවාහිනී මාධ්‍යයේ පුරෝගාමී හා පැරණිතම රූපවාහිනී නාලිකාව වන ස්වාධීන රූපවාහිනී නාලිකාවේ විකාශය වන ටෙලි නාට්‍යවල අන්තර්ගතයේ මූලාරම්භයට වඩා මේ වන විට වෙනසක් දක්නට ලැබේ. ස්වාධීන රූපවාහිනී නාලිකාවේ විකාශය වන ටෙලි නාට්‍ය, ප්‍රේක්ෂක ආකර්ෂණය දිනා ගැනීමට සමත් වන ආකාරයට තරුණ පරපුරේ අවශ්‍යතාවන් හඳුනා ගනිමින් විවිධ තේමාවන්, ජීවන චරිත හා සමාජ පැතිකඩ නිරූපණය කරමින් වර්තමානය වන විට නිෂ්පාදනය කරමින් පවතියි. එම නාට්‍යවල තේමාවන් හා රූප රාමු පිළිබඳ මේ වන විට සමාජයේ මතවාදාත්මක කථිකාවතක් ගොඩනැගෙමින් පවතියි. මෙම පර්යේෂණයේ මූලික අරමුණ වනුයේ ස්වාධීන රූපවාහිනී නාලිකාවේ විකාශය වන ටෙලි නාට්‍යවල සංයුතියේ වෙනස්වීම පිළිබඳ ප්‍රේක්ෂක මතවාදය අධ්‍යයනය කිරීමයි. ප්‍රේක්ෂක මතවාදය අධ්‍යයනය සඳහා ප්‍රශ්නාවලි ක්‍රමය භාවිත කළ අතර, එය ස්වාධීන රූපවාහිනී නාලිකාව නරඹන බස්නාහිර පළාතේ ගම්පහ දිස්ත්‍රික්කය ආශ්‍රිත පුද්ගලයන් 50 දෙනෙකු නිශ්චිත නියදි ක්‍රමය මගින් තෝරා ගන්නා ලදි. මෙහි දී ස්වාධීන රූපවාහිනී නාලිකාවේ වසර 05ක් තුළ රාත්‍රී 8.00න් පසු සති අන්ත දිනවල විකාශය වූ ටෙලි නාට්‍ය තෝරා ගෙන එම ටෙලි නාට්‍යවල සංයුතිය (තේමාව, නළු නිළියන්, චරිත, පසුතල) පිළිබඳ ප්‍රේක්ෂක අදහස් සම්බන්ධයෙන් අධ්‍යයනයක් සිදු කරන ලදි. ගුණාත්මක පර්යේෂණ ක්‍රමවේදය මෙම දත්ත ලබා ගැනීම සඳහා භාවිත කරන ලද අතර, දත්ත විශ්ලේෂණයේ දී අන්තර්ගත විශ්ලේෂණ ක්‍රමවේදය භාවිත කරන ලදි. දත්ත විශ්ලේෂණයෙන් අනාවරණය වූ කරුණුවලට අනුව ස්වාධීන රූපවාහිනී නාලිකාව 2018 වසරේ සිට 2023 වසර දක්වා කාලය තුළ විකාශය කරන ලද ටෙලි නාට්‍ය තරුණ වයසේ පසුවන ප්‍රේක්ෂකයන්ගෙන් වැඩි පිරිසක් නැරඹීමට පෙළඹී ඇත. සීමිත කථාංග ගණනකින් යුත්, මතවාදාත්මක සමාජ මාතෘකා සහිත, වික්‍රමාන්විත, ගුණාත්මක බවින් වැඩි, නව අධ්‍යක්ෂවරුන්ගේ හා නිෂ්පාදකවරුන්ගේ ටෙලි නාට්‍ය සඳහා ප්‍රමුකත්වයක් ලබා දී තිබේ. ස්වාධීන රූපවාහිනී නාලිකාව තම ආයතනයේ සම්ප්‍රදායන් බැහැර කරමින් ප්‍රේක්ෂක රුචිකත්වයට මුල් තැන දෙමින් නාට්‍ය නිෂ්පාදනය කිරීම හේතුවෙන් ලංකාවේ සංස්කෘතීන්ට, සාම්ප්‍රදායන්ට හා සදාචාරයන්ට අහියෝගාත්මක ආකාරයේ ටෙලි නාට්‍ය නිෂ්පාදයේ ප්‍රවණතාවයක් ඇතිවීම පිළිබඳව විවේචනාත්මක කථිකාවතක් සමාජය තුළ ගොඩ නැගී ඇත.

මුඛ්‍ය පද : ස්වාධීන රූපවාහිනිය, ටෙලි නාට්‍ය, වර්තමාන ප්‍රගමනය, ප්‍රේක්ෂක මතය

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Abstract No: HSS 44 Humanities, and Social Sciences

ආර්ථික සහභාගීත්වය හා මූල්‍ය ප්‍රාග්ධන ප්‍රවේශයන් තුළ වැඩිහිටියන් මුහුණ දෙන ගැටලු හා අභියෝග

පී. සී. හෙට්ටිආරච්චි[1*], කේ. එම්. ජී. අමරතුංග

[1]ජාතික සමාජ සංවර්ධන ආයතනය, කැලණිය විශ්වවිද්‍යාලය

වත්මන් *ප්‍රජා විද්‍යාත්මක ප්‍රවණතා* හමුවේ ලාංකේය සමාජ සන්දර්භය තුළ වැඩිහිටි ජනගහනයේ වැඩි වර්ධනයක් දක්නට ලැබේ. වැඩිහිටි ජනගහන අවකලනයන් ආර්ථික නිෂ්පාදනය, පරිභෝජනය හා ඉතුරුම් යන ක්ෂේත්‍රයන්ට ද සුවිශේෂී බලපෑමක් සිදු කර තිබේ. පුද්ගල ජීවන තිරසරභාවයට ආර්ථික සහභාගීත්වය හා මූල්‍ය ප්‍රාග්ධනය වැදගත් වේ. මෙහි පර්යේෂණ ගැටලුව ආර්ථික සහභාගීත්වය හා මූල්‍ය ප්‍රභවයන් වෙත ප්‍රවේශවීමේ දී වැඩිහිටියන් මුහුණදෙන ගැටලු හා අභියෝග මොනවාද යන්න ගවේෂණය කරගැනීමයි. පර්යේෂණ ක්‍රමවේදය මිශ්‍ර ක්‍රමවේදය වේ. වැඩිහිටියන් (25)කු සසම්භාවී නියදිය අනුව, තංගල්ල ප්‍රාදේශීය ලේකම් කොට්ඨාශයේ රන්න (බටහිර) ග්‍රාම නිලධාරී වසම තුළින් තෝරා ගෙන ඇත. ප්‍රාථමික හා ද්විතික මූලාශ්‍ර භාවිතයෙන් දත්ත රැස්කරණු ලැබූ අතර, දත්ත ප්‍රමාණාත්මක හා ගුණාත්මකව විශ්ලේශණය සිදුකර තිබේ. පර්යේෂණ අනාවරණයන්ට අනුව නියදිය තුළ ප්‍රතිචාරකයින් (68%) ආර්ථික සහභාගීත්වය හා මූල්‍ය වත්කම් වෙත ප්‍රවේශවීමේ දී විවිධ දුෂ්කරතාවයන්ට පත් වී තිබේ. සෞඛ්‍ය ගැටලු හේතුවෙන් වැඩිහිටියන්ගේ ආර්ථික කෘත්‍යයන් මඟහැරී තිබෙන අතර, දීර්ඝකාලීනව ප්‍රතිකාර ගැනීමට සිදු වීමෙන් ඉතුරුම් හා අනාගත ආයෝජන වෙත ප්‍රවේශවීමට බාධකයක් වී ඇත. ප්‍රතිචාරකයින් අතුරින් බහුතරයක් අවිධිමත් අංශයේ රැකියාගතවුවන් බැවින්, විශ්‍රාම හෝ අර්ථසාධක ප්‍රතිලාභ හිමිකම් නොලබයි. මේ තුළ වැඩිහිටි වැන්දඹු කාන්තාවන් වඩාත් ආර්ථික අනාරක්ෂිතභාවයකට පත් පිරිස බවට පත් වී තිබේ. නියදිය තුළ වැඩිහිටියන් සුළු පිරිසකට විශ්‍රාම වැටුප් හිමිවුවත්, තවදුරටත් සිය දරුවන්ගේ ආධාර හා උපකාර මත යැපෙන තත්ත්වයකි. එමෙන්ම පවුල තුළ ආර්ථිකමය වශයෙන් තීන්දු තීරණ ගැනීමේ දී වැඩිහිටියන්ගේ සහභාගීත්වය අවම මට්ටමක පවතී. සිය දරුවන්ට දේපළ පවරාදීමෙන් බොහෝ වැඩිහිටියන්ට ආදායම් මූලාශ්‍ර ද අහිමි වී තිබේ. ආර්ථික සහභාගීත්වය හා මූල්‍ය ප්‍රාග්ධන විෂමතාවය, වැඩිහිටියන් තුළ ආකල්පමය වශයෙන් පරාධීන හා ස්ථාරයනය රටාවක් ද නිර්මාණය කර ඇත. එබැවින් වැඩිහිටියන් උදෙසා සැකසෙන සමාජ-ආර්ථික ප්‍රතිපත්තීන් තුළ දී වැඩිහිටියන්ගේ ආර්ථික සහභාගීත්වය හා මූල්‍ය ප්‍රාග්ධනයේ ගමාවීම් පිළිබඳ ගවේෂණය කර ගැනීම වඩාත් කලෝචිත වන අතර, වැඩිහිටිවියේ ජීවන තිරසරභාවය හා යහපැවැත්ම සහතිකකර ගැනීමේ දී එය සහයක් බවට පත්කර ගත හැකිය.

මුඛ්‍ය පද : ප්‍රජා විද්‍යාත්මක ප්‍රවණතා, වැඩිහිටි, ආර්ථික සහභාගීත්වය, මූල්‍ය ප්‍රාග්ධනය, ජීවන තිරසරභාවය.

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Author Index

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ABSTRACT VOLUME

කැලණිය විශ්වවිද්‍යාලය
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