

Editorial

This is the Volume 20, Number 1 issue of the OUSL Journal, the Journal of The Open University of Sri Lanka which is published biannually. The articles published in this volume include research based on the disciplines of Chemistry, Management, Health Sciences, Teaching Learning Process, and Education.

Monarakudumbiya (*Vernonia cinerea*) exhibits various pharmacological activities, including antioxidants, anti-inflammatory, and antimicrobial properties, which can be attributed to its rich phytochemical profile, comprising flavonoids, terpenoids, and phenolic compounds. The study on *Phytochemical profile and antioxidant activity of a value-added herbal tea from Vernonia cinerea and Zingiber officinale as a potent health-promoting beverage*, focuses on the development of a value-added herbal tea formulation, which includes *V. cinerea* as the primary ingredient and ginger (*Zingiber officinale*) as a secondary value-added natural ingredient. Phytochemical analysis revealed higher concentrations of phenols, flavonoids, and other bioactive compounds, which contribute to the potent antioxidant and anti-inflammatory properties of the herbal tea blend. The herbal tea further exhibited a strong free radical scavenging activity, as evidenced by its low IC₅₀ value in the 2,2-diphenyl-1-picrylhydrazyl (DPPH) assay, indicating the effective ability to reduce oxidative stress. Together, the synergistic properties of *V. cinerea* and *Z. officinale* make this herbal tea a potent health-promoting beverage, promoting immunity and reducing the risk of chronic diseases.

Entrepreneurship plays a pivotal role in economic development by generating employment opportunities that stimulate economic growth and contribute to increasing the national GDP. This study on *Challenges of Rural Entrepreneurship in the Cumilla District of Bangladesh*, aims to investigate the challenges faced by rural entrepreneurs in the Cumilla District of Bangladesh, an economy predominantly based on agriculture. To achieve this objective, the study focuses on four key agro-based sectors: poultry, nursery, dairy, and fisheries. Primary data were collected from over 80 rural entrepreneurs engaged in these sectors within the district. Using a quantitative approach, data were gathered through a structured, closed-ended questionnaire employing a five-point Likert scale. Additionally, secondary sources such as books, journal articles,

reports, websites, and newspapers were reviewed to establish a theoretical foundation on rural entrepreneurship. The primary data were analyzed using statistical techniques including mean, standard deviation, and t-tests, facilitated by SPSS software. Moreover, a sector-wise comparison was conducted to identify which areas benefit from better resources and support for entrepreneurial growth. The findings indicate that rural entrepreneurs in Cumilla face considerable obstacles, notably in capital formation, high interest rates on loans, insufficient training and skill development opportunities, limited managerial expertise, and inadequate market knowledge. A key limitation of this study is its relatively small sample size, which may restrict the generalizability of the results. Future research should aim to include a larger and more diverse sample to enhance the robustness and validity of findings.

The study on *Health-Related Quality of Life and its determinants among patients undergoing Hemodialysis at a Tertiary Care Hospital in Western Province, Sri Lanka*, presents a comprehensive analysis of the health-related quality of life (HRQOL) and its determinants among chronic kidney disease (CKD) patients undergoing hemodialysis (HD) at a tertiary care hospital in Sri Lanka. Employing a descriptive cross-sectional design with a validated KDQOL-36™ tool, the study reveals significantly compromised HRQOL across physical, mental, and kidney-specific domains, with particularly low scores in the burden of kidney disease (BKD) and mental component summary (MCS). Further, findings indicate that male gender, civil status, education level, employment status, and income levels are significantly associated with better HRQOL subscales, while symptoms like shortness of breath, ascites, and edema are strongly linked with lower HRQOL. Notably, the study identifies preserved urine output and proactive fluid management as beneficial to HRQOL, underscoring the importance of residual kidney function and patient self-management. The study shed light on the need for multi-faceted interventions targeting not just clinical symptoms but also socioeconomic and psychosocial dimensions. Overall, the manuscript adds valuable local evidence to global HRQOL discourse in CKD care and calls for policy-level integration of HRQOL assessments in routine clinical practice in resource-limited settings.

The article titled *Flipped Classroom: Impact on Student Engagement among First-Year Management Undergraduates at the Open University of Sri Lanka*, presents a qualitative investigation into the effects of

flipped learning on student engagement within a Sri Lankan higher education context. Drawing on Reeve's (2013) framework of engagement—emotional, behavioural, and cognitive—the study uses interviews, questionnaires, and observations to explore how the flipped classroom model affects first-year undergraduates enrolled in a Principles of Management course. Findings highlight that the flipped method significantly enhances student engagement by fostering independent learning, promoting critical thinking, and encouraging active participation in classroom activities. Students reported acquiring various skills such as attentiveness, socialization, and open-mindedness, while the model was praised for making lessons more interesting and accessible. However, challenges were noted, including access issues, technological literacy gaps, and adjustment difficulties, particularly among students unfamiliar with self-directed learning. The study contributes to a limited pool of Sri Lankan research on flipped learning in management education and suggests its potential as an effective pedagogical approach. Nevertheless, limitations such as the small, non-generalizable sample and subject-specific focus warrant broader future research.

Ferrocene is a stable organometallic molecule with interesting electrochemical properties. Incorporation of a ferrocenyl group on to a phosphine ligand was achieved by the condensation reaction between the phosphino hydrazone $Z\text{-PPh}_2\text{CH}_2\text{C}(\text{Bu}^t)=\text{NNH}_2$ and ferrocene carboxaldehyde, $\text{CpFe}(\text{C}_5\text{H}_4\text{CHO})$. In the article, *Mo and Pt Complexes of an Azine Phosphine with a Ferrocene Moiety*, the synthesis of the ferrocene-based azine monophosphine $Z,E\text{-PPh}_2\text{CH}_2\text{C}(\text{Bu}^t)=\text{N}=\text{N}=\text{CH}(\text{C}_5\text{H}_4)\text{FeCp}$ ($Z,E\text{-LH}$) and its complexes with molybdenum and platinum centres are presented. The reaction of $Z,E\text{-LH}$ with the labile $[\text{Mo}(\text{CO})_4(\text{nbd})]$ (nbd = norbornadiene) at room temperature afforded the orange tetracarbonyl Mo(0) complex $[\text{Mo}(\text{CO})_4(Z,E\text{-LH})]$ (**3**), $Z,E\text{-LH}$ is a bidentate ligand. The tetracarbonyl Mo(0) complex $[\text{Mo}(\text{CO})_4(Z,E\text{-LH})]$ (**3**) was converted into $[\text{Mo}(\text{CO})_4(Z,Z\text{-LH})]$ (**4**) thermally by forcing the isomerization around $-\text{N}=\text{CH}$ double bond. Treatment of $[\text{PtMe}_2(\text{cod})]$ (cod = cycloocta-1,5-diene) with the ligand $Z,E\text{-LH}$ at 20 °C formed the dimethylplatinum(II) complex $[\text{PtMe}_2(Z,E\text{-LH})]$ (**5**) in which the H^2 -proton attached to the cyclopentadienyl group showed agostic interaction with the platinum(II) centre. In boiling toluene, the C-H bond activation of this agostic proton occurred to produce the cyclometallated platinum(II) complex $[\text{PtMe}(Z,E\text{-L})]$ (**6**) with an anionic tridentate $\text{P}^-\text{N}^-\text{C}^-$ ligand.


The study on *Perception of the Internship Programme Among Undergraduate Candidates of the Bachelor of Science Honours Degree in Agribusiness Management in University of Ruhuna, Sri Lanka*, evaluates the undergraduates' perception of the internship programme of the BSc Honours in Agribusiness Management programme. The cross-sectional survey was conducted with 53 undergraduates who recently completed their internships. Results revealed that 58.8% of the students have completed their internships in the private sector, as expected by policymakers of the faculty. The study highlighted that students have obtained several skills and benefits from the internship programme, including real-life working experience, managerial skills, communication skills, time management skills, and adaptability skills, while gaining practical skills through the application of academic knowledge, followed by industry exposure and understanding, personality development and skill enhancement, networking, and public relations opportunities, which were the major benefits from the IS. While they are getting these benefits from the IS, there were training-related, personal, working environment-related, and university-related challenges as well. Moreover, the continued high unemployment rate among undergraduates raises concerns over the effectiveness of internship programmes bridging academia and industry. Moreover, persistence of external employment barriers suggests that internships alone cannot make career readiness and entrepreneurship training; strong industry linkage is also required. This study further suggests extending IS to at least 3 months, improving students' soft skills, incorporating entrepreneurship, and enhancing industry-university collaboration to improve the industrial training experience. It is recommended to conduct a study to identify the expectations and perceptions of external industry professionals and employers regarding internships to better prepare students for these experiences.

We welcome your suggestions for further improvement of this Journal. We are looking forward to publishing your current research findings in our next issue.

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