
Editorial: Fostering sustainable growth in emerging sectors: key studies and insights

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Sustainable development in small and emerging industries presents unique challenges and opportunities. Investments in sustainable practices are particularly challenging in these industries due to their sometimes-limited resources. Their ability to implement eco-friendly projects may be hindered by a lack of funding, insufficient access to sustainable technologies, and a lack of technical know-how. Additionally, smaller businesses may struggle to comply with regulations and adapt to changes, which can be a significant burden without proper support and guidance. This special issue, therefore, covers studies that explore a range of issues affecting various sectors, from micro-entrepreneurship and workforce challenges to education and technology integration. Each study delves into specific factors and patterns, offering insights that can inform policy, practice, and further research in their respective fields.

Amandeep Dhaliwal's research on women-owned microenterprises in emerging economies identifies key success factors using SEM-PLS. The study finds no evidence of the influence of prior work experience or personal motivations, but it emphasises the critical roles of mentorship, work-life balance, marital status, family support, and access to capital. These insights can guide policymakers and businesspeople.

The second article by Mohd Shahril Abu Hanifah and Norazura Ismail investigates fatigue, sleepiness, and daily sleep among 416 shift workers in the electronics manufacturing industry, using the multidimensional fatigue inventory, Karolinska sleepiness scale, and sleep diary. Strong correlations between tiredness and drowsiness were found, with night shift workers being particularly affected. Since sustaining a healthy workforce is essential for long-term productivity and growth in these sectors,

management should implement control mechanisms to improve worker well-being, thereby supporting sustainable development in small and emerging industries.

Using data from 678 students at a Malaysian institution, Nur Farha bte Hassan et al. assess technology-enabled/enhanced active learning (TEAL) for engineering students, evaluating domains like blended, collaborative, practical, interactive, and online learning. The efficient learning platforms offered by TEAL aim to enhance students' employability in high-tech positions. TEAL techniques can also support small and emerging industries by fostering a trained, flexible workforce necessary for sustained development and innovation across various sectors.

A. Ismail et al. conduct a study that evaluates the integrity of aspiring TVET teachers in Malaysia, focusing on their understanding and attitudes toward ethical concepts and principles. No discernible gender differences were observed. Integrity is emphasised in teacher education to ensure that aspiring teachers maintain high moral standards, which is essential for building professionalism and trust. Integrity education helps educational institutions establish a morally responsible workforce that will sustain social and industrial growth.

The fifth article by Mohd Shahidan Shaari et al. discusses the impact of foreign workers on unemployment in Malaysia from 1982 to 2018, using the ARDL approach. They conclude that hiring more foreign workers has no immediate or long-term impact on unemployment rates, as these individuals are needed in industries like construction, where local workers are less likely to seek employment. Policymakers in small and emerging businesses might benefit from these lessons, which underscore the necessity of balanced labour policies to promote sustainable development.

W.N.F.S. Wan Azman and K.N.F. Ku Azir examine food waste patterns in leftover cooked food among Malaysians using a questionnaire. They found that younger and more educated respondents are more conscious of the problems associated with food waste. Non-working individuals show greater awareness of 'use by' dates compared to professionals. While larger households waste less food overall, they spend more on groceries. To control food waste more effectively, the study emphasises the need for legislation and technologies like AI and IoT. In small and emerging enterprises, addressing food waste is essential for sustainable growth, as it can lead to more efficient resource utilisation and a smaller environmental impact.

In her article, Noor Atikah Zainal Abidin et al. address concerns like low integrity in assessments and limited student-centred learning by evaluating the validity and reliability of a peer assessment questionnaire for TVET students in Malaysia. Using a quantitative survey of 172 students, the results show high validity and reliability, with a KMO of 0.891 and significant Bartlett's test results. The validated questionnaire is a useful tool for evaluating the integrity and quality of student work in peer assessments. Adopting strong peer assessment procedures can improve educational quality and align with the objectives of Industry 4.0 for small and emerging industries. This would assist sustainable development by producing competent and trustworthy professionals.

Through a survey of 193 participants, Haeryip Sihombing et al. investigate the emotional reactions of consumers to pen designs. Pens with a 'click' mechanism, 'clip', and 'grip' are found to be more favoured, which heightens the feelings of 'miserable-comfortable', 'irritating-convenient', and 'boring-attractive'. Pen designs and personality traits such as feeling-thinking and perceiving-judging were discovered to have significant relationships. By considering these preferences, product designers may

better align with the personalities of their customers. Leveraging such insights can result in more innovative and personalised products for emerging companies, boosting customer satisfaction and reducing waste from unsold or poorly designed items – all of which contribute to sustainable development.

The final article in this issue discusses the readiness of polytechnic lecturers in Johor, Malaysia, to incorporate Industrial Revolution 4.0 (IR 4.0) elements into their teaching. Analysing data from 222 lecturers, Chee Sern Lai et al. found a moderate level of knowledge ($M = 2.84$) and skill readiness ($M = 2.69$). The Ministry of Higher Education should enhance the training provided to teachers to better prepare them for IR 4.0. Equipping graduates with the necessary IR 4.0 skills is essential for sustainable success in small and emerging companies, as it ensures a workforce capable of fostering innovation, increasing productivity, and meeting evolving industry demands.

Together, these studies highlight the complexities and opportunities present in diverse areas such as education, industry, and social development. By addressing critical factors and emerging trends, they contribute valuable knowledge that can drive innovation and informed decision-making across multiple disciplines.