

ORIGINAL ARTICLE

Advancing Ergonomics Practice and Policy in Malaysia: A Call for Integration, Research, and Action.

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ABSTRACT

This letter highlights the need for a comprehensive approach to ergonomics and human factors (HFE) in Malaysia, emphasizing recent policy developments i.e amendment of OSH Act 2022, research findings, and international collaborations. Key areas of focus include addressing research gaps in ergonomics, integrating HFE principles and domain into national policies, evolving industrial practices in the context of Industry 4.0, and expanding educational, talent and capacity-building opportunities in the field of HFE. The letter calls for unified efforts among stakeholders to establish a recent national research agenda, integrate ergonomics into regulatory frameworks, promote systems-thinking interventions, and expand certified training pathways.

Keywords: Human Factors and Ergonomics (HFE), Macro ergonomics, Industry 4.0 Readiness, Ergonomics Training and Certification, Occupational Safety and Health (OSH) Policy Integration.

Dear Editor,

I am writing to discuss the future of ergonomics and human factors in Malaysia. With recent policy changes in term of the new amendment of the Act, research developments, and international collaborations, it's important for our local experts to work together to tackle current and new challenges.

1. Addressing Research Gaps in Malaysian Ergonomics Landscape

Although Malaysia has seen an uptick in ergonomics-related research in sectors such as manufacturing and transportation, several gaps remain. Notably, informal workers, gig economy workers, and agricultural laborers remain underrepresented in both academic literature and ergonomic interventions.

Among the three, agricultural workers have more studies compared to informal and gig economy workers. Furthermore, while ergonomics risk assessments such as Musculoskeletal survey, ERA 2017 Guidelines by Department of Occupational Safety and Health (DOSH), ROSA, REBA, and RULA are commonly employed, few studies validate these tools against local anthropometric, biomechanical data and epidemiological evidence such as prospective study. There is also a scarcity of other domain of ergonomics studies that consider organizational culture, cognitive workload, and psychosocial risk factors

2. Recent Policy Milestones and Global Engagement

Malaysia's ratification of the ILO Convention No. 155 in June 2024 marked a historic milestone in our national commitment to occupational safety and health. This complements the existing ratification of Convention No. 187 and strengthens the legislative framework for the integration of HFE principles based on ILO Convention No. 127, ILO/IEA Principles and Guidelines (2021) and ILO/IEA Review Report on laws and practice related to Human factors/Ergonomics and manual handling at the workplace (2023) into national policy. Moreover, our ongoing participation in the ILO/IEA writing group for the development of a background document toward a new ILO Convention on ergonomics/human factors positions Malaysia as a global contributor. This global engagement should translate into local policy harmonization and capacity-building at institutional levels.

3. Industrial Development and Practice Challenges

With the rise of digitalization, automation, and Industry 4.0 adoption in Malaysia, emerging gig economy and informal work indicate the need for ergonomics practice to evolve. Current ergonomics programs are often reactive, focusing on musculoskeletal symptoms post-incident, rather than in prevention education awareness and being embedded in design processes. Macro ergonomics approaches, such as those outlined in the Macro Ergonomics Workplace Assessment (MerWA) tool developed in Malaysia, offer a promising framework for integrating physical, cognitive, and organizational ergonomics. However, their adoption remains limited beyond academic institutions. We recommend embedding ergonomics into national occupational health strategies and incorporating HFE as a mandatory criterion in the coming Industrial Code of Practice (ICOP).

4. Educational and Capacity-Building Opportunities

At present, formal ergonomics training is still confined to a handful of academic programs. There is no tertiary education among Malaysian Universities at Degree level that focus on HFE alone. Mostly embedded within the Engineering and OSH Program due to market demand. The demand is only from those in the oil and gas sector, where the degree in HFE is a requirement. There is an urgent need for expanding certified training pathways, including the Certified Professional Ergonomist (CPE) program being developed by HFEM and endorsed by IEA. Interdisciplinary education, incorporating HFE principles in design, engineering, psychology, HCI and organizational curricula, is essential to prepare the next generation of practitioners. Institutions such as Universiti Putra Malaysia are piloting such integrative approaches in master's and PhD in HFE, and broader institutional support by other Universities is necessary.

Conclusion and Call to Action

As Malaysia strengthens its role in global ergonomics advocacy, it is imperative to unify Malaysian efforts in research, policy, practice, and education. We invite HFEM members, government agencies, universities, and industry leaders to collaborate on:

- Establishing a national research agenda for human factors and ergonomics.
 - Integrating comprehensive ergonomics principles into regulatory and design frameworks.
 - Promoting systems-thinking in ergonomic interventions.
 - Expanding and certifying ergonomics training and professional pathways.
- This collaboration aims to ensure that ergonomics in Malaysia meet international standards and are comparable to those in other Southeast Asian countries.

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