Machine learning offers older adults the healthy drinks option

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Machine learning can be used in the classification of health-drink preferences for older people, according to research published in the *International Journal of Industrial and Systems Engineering*.

The work undertaken in Thailand during the height of the COVID-19 pandemic showed that the complexities of preference and dietary requirements could be used to help health drinks manufacturers develop products that will be better received by the target market. Moreover, the same work could guide older people and caregivers and health care workers allowing them to stick more closely to the recommendations of the World Health Organization (WHO) for such products in terms of nutritional and other benefits.

Athakorn Kengpol and Jakkarin Klunngien of King Mongkut's University of Technology North Bangkok explain that as the world population continues to "age," there is a pressing need to address the nutritional requirements of this growing demographic. With a larger number of older people, there is likely to be a greater incidence of chronic health complaints and nutritional problems. Advances in medicine can address some of the illnesses to varying degrees. However, nutrition plays an important role in staving off illness or helping in the maintanance of general health despite the common issues of multiple conditions.

The emergence of the novel coronavirus, SARS-CoV-2, and the ensuing world pandemic it caused complicated this issue still further. The WHO offered guidance on how older people, who would likely be more vulnerable to the potentially devastating symptoms of the disease, might be protected. Part of the guidance was focused on improved nutrition.

The team's work has led to a decision-support system based upon a machine learning model for classifying the beverages. A neural network trained using particle swarm optimization could then be incorporated into a drinks vending machine to guide users to the most appropriate health beverage.

More information: Jakkarin Klunngien et al, Design of a machine

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learning to classify health beverages preferences for elderly people: an empirical study during COVID-19 in Thailand, *International Journal of Industrial and Systems Engineering* (2021). DOI: 10.1504/IJISE.2021.10038478

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