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Neural network prediction for efficient waste management in Malaysia (Article)

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Abstract

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Maintaining current municipal solid waste management (MSWM) for the next ten years would not be efficient anymore as it has brought many environmental issues such as air pollution. This project has proposed Artificial Neural Network (ANN) based prediction algorithm that can forecast Solid Waste Generation (SWG) based on population growth factor. This study uses Malaysian population as sample size and the data for weight is acquired via authorized Malaysia statistics" websites. All data will be normalized in the pre-processing stage before proceeding to the prediction using Visual Gene Developer. This project evaluated the performance using R2 value. Two hidden layers with ten and five nodes were used respectively. The result portrayed that there will be an increase of 29.03 percent of SWG in year 2031 compared to 2012. The limitation to this study is that the data was not based on real time as it was restricted by the government. © 2018 Institute of Advanced Engineering and Science. All rights reserved.

Author keywords

(Ann prediction algorithm) (MSWM in Malaysia) (Prediction of SWG) (R2) (Visual gene developer)

Funding details

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FRGS17-038-0604	Ministry of Higher Education, Malaysia	MOHE	

Funding text

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