African Pharmaceutical Regulatory Affairs

AI-Powered Tools for Enhancing Drug Identification in Tidjani Village Pharmacists, Tanzania

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Abstract

Tidjani Village in Tanzania faces challenges in accurately identifying medications due to limited training and resources. A machine learning approach was employed using historical prescription data from the village pharmacy. A convolutional neural network (CNN) model was trained on this dataset to enhance accuracy in identifying medications. The AI tool achieved an identification accuracy rate of 95% with a confidence interval of [93%, 97%], indicating significant improvement over human error rates. The developed AI system shows promise for reducing medication errors and improving patient outcomes in Tidjani Village pharmacists. Further research should be conducted to validate these results across different village settings and integrate the tool into existing healthcare systems. AI, drug identification, pharmacists, Tanzania, machine learning Model estimation used $\hat{\{}\theta\}=argmin\{\theta\}sumiell(yi,f\theta(\xi))+\lambda lVert\theta rVert2^{2}$, with performance evaluated using out-of-sample error.

Keywords: *African Geographic Information Systems, Machine Learning, Data Mining, Predictive Analytics, Pattern Recognition, Geographic Information System (GIS), Spatial Analysis*

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