

PAPER-2

MODELLING HEALTH MAINTENANCE ORGANIZATIONS PAYMENTS UNDER THE NATIONAL HEALTH INSURANCE SCHEME IN NIGERIA***Akinyemi M.I¹, Adeleke I.², Adedoyin C.³**¹Department of Mathematics, University of Lagos, Akoka, Lagos, Nigeria.
makinyemi@unilag.edu.ng²Department of Business Administration University of Lagos, Akoka, Lagos,
adeleke22000@gmail.com³Stamford University, Birmingham, Alabama, USA
christsonade@gmail.com

Abstract: *The Nigerian National Health Insurance Scheme (NHIS) is set up to ensure equitable payment of health care bills combining and prudently reducing cost-burden distribution for residents, versus high health care costs. Health maintenance organisations (HMO) are limited liability companies which could be established by private, public or individual entities with a main aim of being players in the scheme. This paper explored logistic regression (LR), linear discriminant analysis (LDA) and random forest (RF) in determining the factors that could determine if a HMO will cover full or part of an individual's healthcare bill. The results do not show a significant difference in the classification accuracies of the three methods. Inferring that the highest number of the Nigerian residents that make use of the NHIS lie between the 31-40yrs age bracket and that largely, ailment classification and the insured's age are key determining factors of whether a HMO would cover all or part of the bill.*

Keywords: *Random forests, Linear discriminant analysis, Logistic regression, Confusion matrix, Health care insurance*
