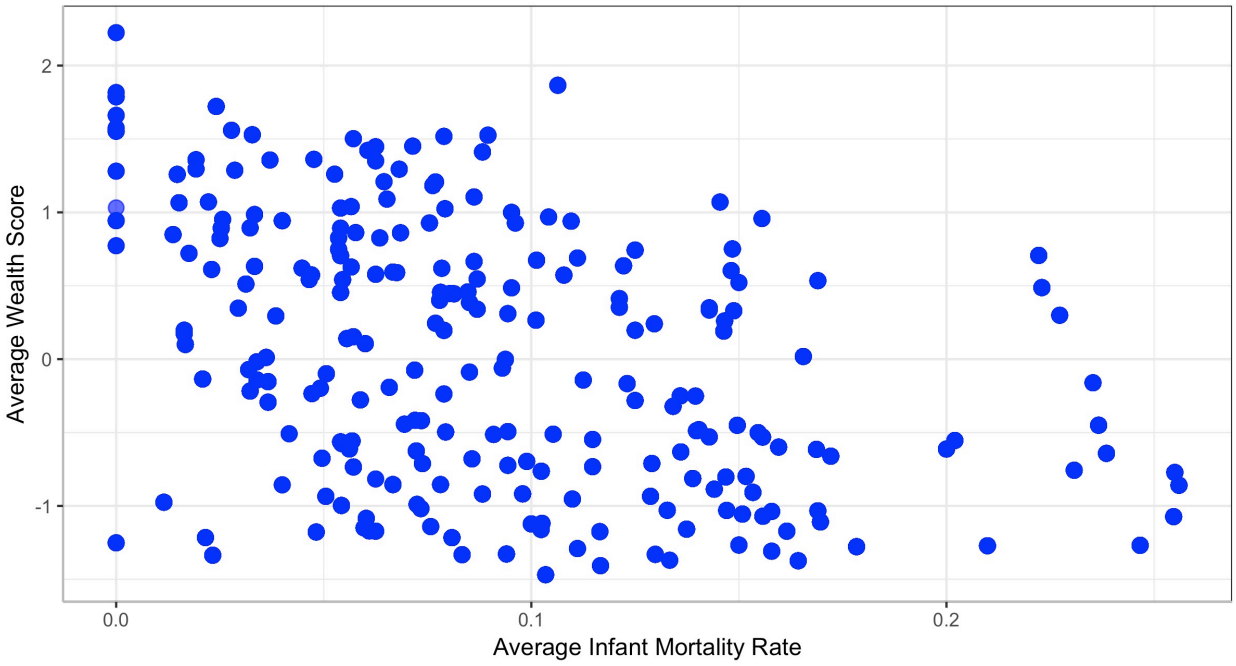
TAMARA AMIN – PROGRAMMING ASSESMENT RA

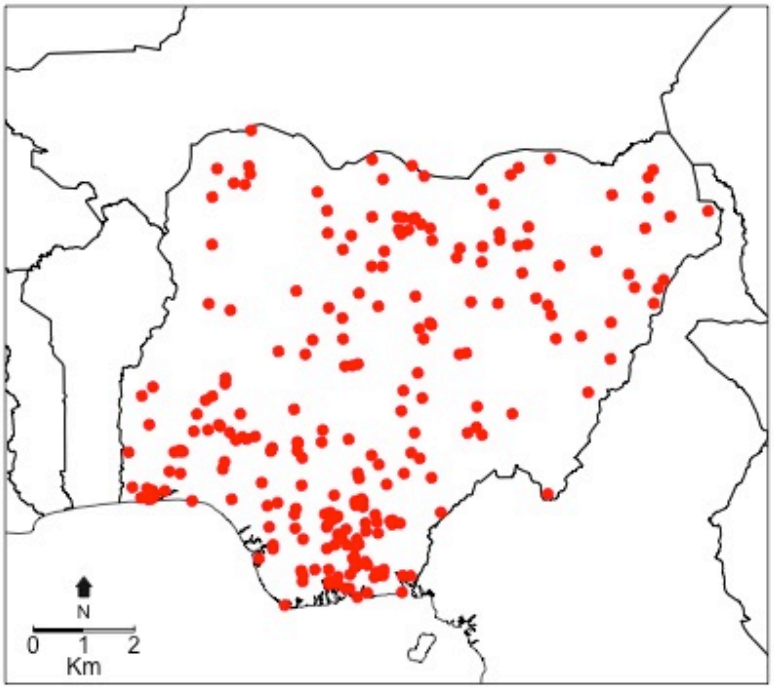
Figure 1

Relationship between Village Wealth and Infant Mortality Rate



Source: USAID Demographic and Health Survey VI

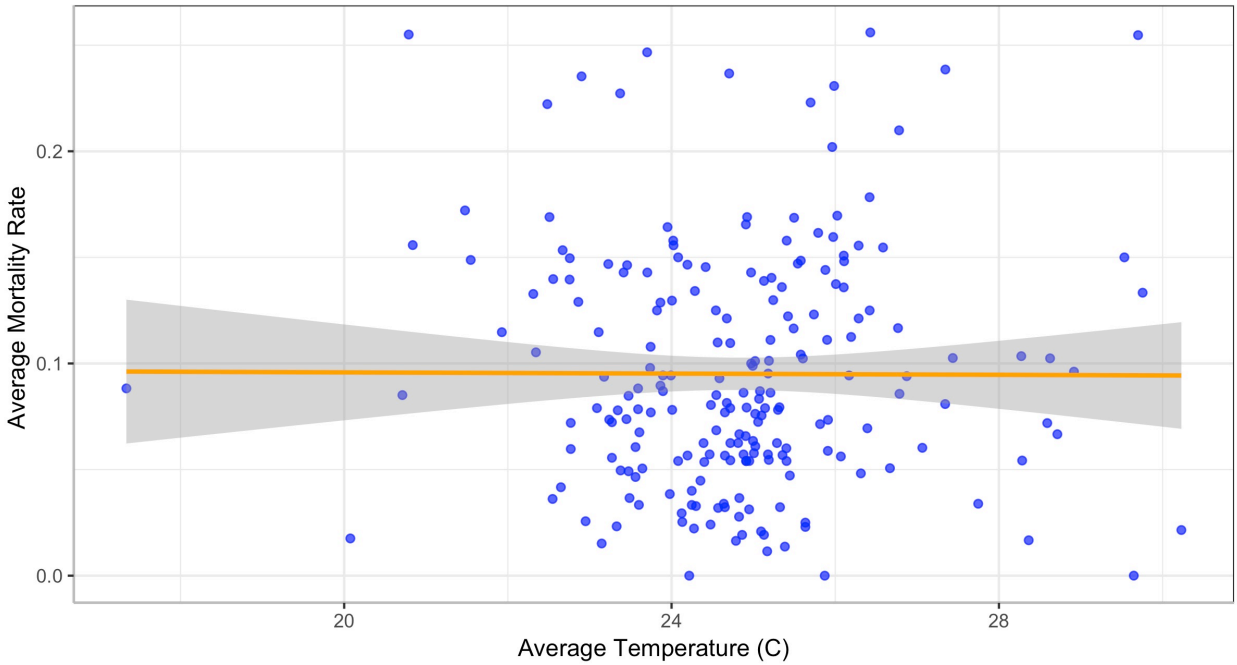
Figure 2



Cluster Locations in Nigeria

Figure 3

Relationship between 10 min Temperature in June and Mortality Rate



Sources: USAID Demographic and Health Survey VI, World Clim v.2

Infant Mortality ~ Wealth Score The linear regression model shows an inverse relationship between wealth and infant mortality (coefficient of -0.074546). The association is statistically significant with a p value of 4.63e-13. However, while we can be reasonable sure that the independent variable has an effect on the dependent variable, the linear model is a poor predictor due to large unexplained variance (R squared is 0.018) and the model's poor prediction accuracy (48%). Therefor alternative models and confounding variables should be explored.

Infant Mortality ~Wealth Score & Sex The logistic regression model shows that both sex and wealth scores are statistically significantly associated with infant mortality (p = 1.22e-12 and p= 1.8e-4), with wealth scores more strongly associated (wealth decreases deviance by 52.307, and gender decreases deviance an additional 14.068). There is an inverse association between infant mortality and wealth (coefficient = -0.30124) and a positive association between sex (male) and mortality (coefficient = 0.286). The logistic model performs well, with a prediction accuracy of 95.9%, however, the nonuniform residuals indicate an association with an additional binary variable and the McFadden score shows that the model only explains ~2% of the variance.