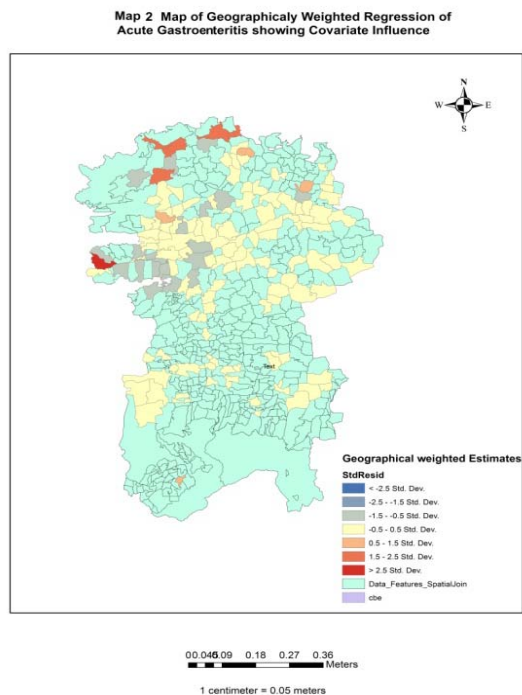
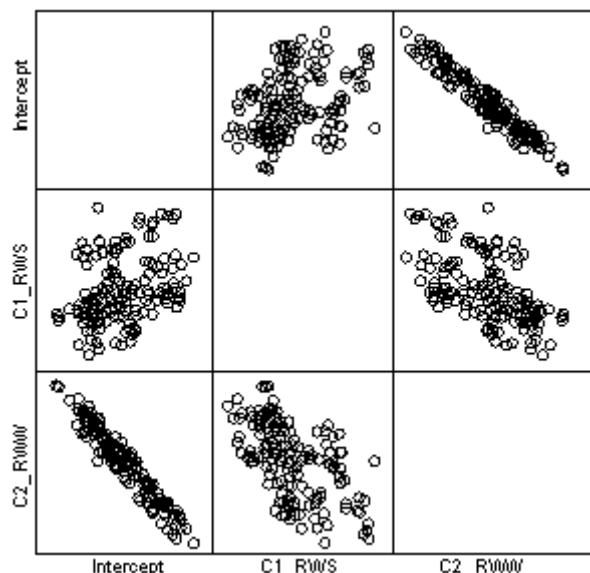


Table 3: Geographically Weighted Regression (GWR)

Estimates			
Parameter	Minimum	Maximum	Standard error
Intercept	-0.04083	-0.04085	0.012
RWW	0.00007	0.0008	0.00003
RWS	0.0003	0.00038	0.00109
Condition Number	17.98		
Adjusted R ²	0.149		
AIC	-668.647		



Map2 shows more regions of high incidences than that of Map 1. This shows how well the GWR model replicated the incidences rates with rainfall. It was obvious that the value was not homogeneously distributed in all villages, and the overall GWR regression fitted best in villages Ikkaraiboluvampatti, Marudur, Chikkasampalayam, Odanthurai, Irrumbarai, and Muduthurai. This model did not fit well in other regions, and this could imply additional covariates were needed to explain the IR in Coimbatore district. Map.2 helped us realize whether additional explanatory factors were required and where could those factors be applied. The condition number shown in Table3 and the matrix scatter plot of the GWR coefficients suggested multicollinearity was not serious (Figure 1).



The GWR models have high explanatory power with the parameters being very significant and a residual deviance value close to the number of degrees of freedom (d_f). The diagnosis of the parameters shows that significant independent variables and dependent variables exhibit high spatial variability and more geographical heterogeneity. The overall map of GWR and Acute Gastroenteritis shows that rainfall, influence the risk of Acute Gastroenteritis in these regions and the influence of pit latrines and open drainages have to be further probed.

6. Conclusion

This study provides further indications that the relationships of Incidence rates and rainfall were spatially non-stationary in Coimbatore region. In regression maps, it is clear that the intensity and directions of the influence of rainfall during summer and winter on Acute Gastroenteritis incidence were different in the study area. This result gives the policy makers more ideas how to better adopt specific control and prevention strategies to specific areas.

7. Acknowledgement

The authors would like to thank the District Directorate of Health and Preventive Medicine, Coimbatore for providing the disease data and the District Collectorate of Coimbatore for providing the rainfall and sanitation data.

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