**Appendix 1**

Global Moran’s I statistics for spatial autocorrelation is given as:

Where *n* was the total number of rural district, is AAIRMI of *i*’th rural district, was the mean of AAIRMIs and W*i,j* was the spatial weight between *i*’th rural district and *j*’th rural district.(21)

Getis-Ord G statistic is given as:

Where *Xj* was AAIRMI for j rural district, W*i,j* was the spatial weight between *i*’th rural district and *j*’th rural district and n was the total number of rural district in this study.(24)

Anselin local Moran’s I is given as:

Where *Xj* was AAIRMI for *j*’th rural district, W*i,j* was the spatial weight between *i*’th rural district and *j*’th rural district and n was the total number of rural district in this study.(33)