**Table S2a. Adjusted R-square and Akaike Information Criterion of Meteorological Factors (MF) using Generalized Additive Modeling (GAM)**

|  |  |  |
| --- | --- | --- |
| **Meteorological Factors (MF)** | **R-Square (adj)** | **AIC** |
| All Meteorological Factors | 0.45 | 286.18 |
| Minimum+Average+Maximum Temperatures+ Southern Oscillation Index | 0.39 | 297.34 |
| Relative Humidity | 0.27 | 324.27 |
| Flood+Total Rainfall+Relative Humidity | 0.28 | 325.41 |
| Maximum Temperature | 0.26 | 328.69 |
| Mean Temperature | 0.21 | 344.69 |
| Rainfall | 0.16 | 355.17 |
| Minimum Temperature | 0.13 | 364.66 |
| Average Wind Speed+Minimum+Maximum Wind Directions | 0.14 | 367.97 |
| Flood | 0.08 | 373.08 |
| Minimum Wind Speed | 0.08 | 373.37 |
| Wind Speed | 0.04 | 386.05 |
| Southern Oscillation Index | 0.02 | 386.38 |
| Maximum Wind Speed | 0.01 | 389.26 |

**Table S2b. Adjusted R-square and Akaike Information Criterion of Lagged Meteorological Factors (LG) using Generalized Additive Modeling (GAM)**

|  |  |  |
| --- | --- | --- |
| **Lagged Meteorological Factors (LG)** | **R-Square (adj)** | **AIC** |
| All Meteorological Factors | 0.67 | 145.81 |
| Minimum+Average+Maximum Temperatures+ Southern Oscillation Index | 0.52 | 203.63 |
| Flood+Total Rainfall+Relative Humidity | 0.52 | 238.42 |
| Mean Temperature | 0.38 | 255.96 |
| Maximum Temperature | 0.34 | 265.89 |
| Relative Humidity | 0.43 | 268.71 |
| Minimum Temperature | 0.36 | 274.83 |
| Rainfall | 0.38 | 290.87 |
| Average Wind Speed+Minimum+Maximum Wind Directions | 0.13 | 311.52 |
| Maximum Wind Speed | 0.03 | 330.09 |
| Southern Oscillation Index | 0.03 | 332.93 |
| Flood | 0.14 | 350.13 |
| Minimum Wind Speed | 0.1 | 350.92 |

**Table S2c. Model Quality of Seasonal Autoregressive Integrated Moving Average (SARIMA) Model ((p,d,q)(P,D,Q)m) with Meteorological Factors (MF) as Exogenous Variables based on the Akaike Information Criterion**

|  |  |  |  |
| --- | --- | --- | --- |
| **Model with Exogenous Variables (MF factors)** | | **Best Model** | **AIC** |
| Dengue Incidence | - | (0,1,0)(0,0,1)[52] | -144.72 |
| Dengue Incidence | All MeteorologicalFactors | (2,1,3)(1,0,0)[52] | -200.67 |
| Dengue Incidence | Average Wind Speed+Minimum+Maximum Wind Directions | (2,1,2)(1,0,0)[52] | -201.75 |
| Dengue Incidence | Total Rainfall | (3,1,2)(1,0,0)[52] | -202.86 |
| Dengue Incidence | Flood | (3,1,2)(1,0,0)[52] | -202.99 |
| Dengue Incidence | Minimum Wind Direction | (3,1,2)(1,0,0)[52] | -204.39 |
| Dengue Incidence | Southern Oscillation Index | (0,1,0)(1,0,0)[52] | -204.54 |
| Dengue Incidence | Minimum+Average+Maximum Temperatures+ Southern Oscillation Index | (3,1,3)(1,0,0)[52] | -204.63 |
| Dengue Incidence | Average Temperature | (0,1,0)(0,0,1)[52] | -204.65 |
| Dengue Incidence | Average Wind Speed | (3,1,2)(1,0,0)[52] | -205.23 |
| Dengue Incidence | Maximum Temperature | (3,1,2)(1,0,0)[52] | -205.30 |
| Dengue Incidence | Maximum Wind Direction | (0,1,0)(0,0,1)[52] | -206.27 |
| Dengue Incidence | Minimum Temperature | (3,1,0)(1,0,0)[52] | -207.17 |
| Dengue Incidence | Flood+Total Rainfall+Relative Humidity | (3,1,2)(1,0,0)[52] | -207.31 |
| Dengue Incidence | Relative Humidity | (0,1,0)(0,0,1)[52] | -209.22 |

**Table S2d. Model Quality of Seasonal Autoregressive Integrated Moving Average (SARIMA) Model ((p,d,q)(P,D,Q)m) with Lagged Meteorological Factors (LG) as Exogenous Variables based on the Akaike Information Criterion**

|  |  |  |  |
| --- | --- | --- | --- |
| **Model with Exogenous Variables (LG factors)** | | **Best Model** | **AIC** |
| Dengue Incidence | All MeteorologicalFactors | (0,1,0)(1,0,0)[52] | -125.94 |
| Dengue Incidence | Minimum+Maximum Wind Directions | (4,1,0)(1,0,0)[52] | -191.80 |
| Dengue Incidence | Maximum Wind Direction | (4,1,0)(1,0,0)[52] | -193.34 |
| Dengue Incidence | Maximum Temperature | (0,1,0)(1,0,0)[52] | -200.35 |
| Dengue Incidence | Minimum Temperature | (0,1,0)(1,0,0)[52] | -201.04 |
| Dengue Incidence | Southern Oscillation Index | (3,1,0)(1,0,0)[52] | -201.61 |
| Dengue Incidence | Minimum+Average+Maximum Temperatures+ Southern Oscillation Index | (0,1,0)(0,0,1)[52] | -203.27 |
| Dengue Incidence | Minimum Wind Direction | (0,1,0)(1,0,0)[52] | -204.54 |
| Dengue Incidence | Flood | (0,1,0)(1,0,0)[52] | -208.06 |
| Dengue Incidence | Flood+Total Rainfall+Relative Humidity | (0,1,0)(1,0,0)[52] | -208.35 |
| Dengue Incidence | Total Rainfall | (0,1,0)(1,0,0)[52] | -209.56 |
| Dengue Incidence | Relative Humidity | (0,1,0)(1,0,0)[52] | -212.47 |
| Dengue Incidence | Average Temperature | (0,1,0)(1,0,0)[52] | -212.82 |