Case 2

GWR

===========================================================================

Model type Gaussian

Number of observations: 67

Number of covariates: 3

Global Regression Results

---------------------------------------------------------------------------

Residual sum of squares: 761361.700

Log-likelihood: -407.898

AIC: 821.795

AICc: 824.440

BIC: 761092.600

R2: 0.035

Adj. R2: 0.005

Variable Est. SE t(Est/SE) p-value

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X0 104.009 216.223 0.481 0.630

X1 2.385 1.703 1.400 0.161

X2 1.710 2.414 0.708 0.479

Geographically Weighted Regression (GWR) Results

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Spatial kernel: Adaptive bisquare

Bandwidth used: 19.000

Diagnostic information

---------------------------------------------------------------------------

Residual sum of squares: 53882.359

Effective number of parameters (trace(S)): 24.670

Degree of freedom (n - trace(S)): 42.330

Sigma estimate: 35.678

Log-likelihood: -319.179

AIC: 689.700

AICc: 723.652

BIC: 746.295

R2: 0.932

Adj. alpha (95%): 0.006

Adj. critical t value (95%): 2.835

Summary Statistics For GWR Parameter Estimates

---------------------------------------------------------------------------

Variable Mean STD Min Median Max

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X0 59.211 271.999 -425.155 -17.362 672.797

X1 2.553 2.246 -2.992 2.849 5.651

X2 2.479 2.870 -5.725 2.492 7.174

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Model type Gaussian

Number of observations: 67

Number of covariates: 3

Global Regression Results

---------------------------------------------------------------------------

Residual sum of squares: 1753548.769

Log-likelihood: -435.846

AIC: 877.693

AICc: 880.338

BIC: 1753279.668

R2: 0.851

Adj. R2: 0.846

Variable Est. SE t(Est/SE) p-value

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X0 -222.421 123.722 -1.798 0.072

X1 2.584 0.145 17.808 0.000

X2 5.526 1.386 3.986 0.000

Geographically Weighted Regression (GWR) Results

---------------------------------------------------------------------------

Spatial kernel: Adaptive bisquare

Bandwidth used: 14.000

Diagnostic information

---------------------------------------------------------------------------

Residual sum of squares: 102105.465

Effective number of parameters (trace(S)): 25.684

Degree of freedom (n - trace(S)): 41.316

Sigma estimate: 49.712

Log-likelihood: -340.593

AIC: 734.552

AICc: 772.129

BIC: 793.381

R2: 0.991

Adj. alpha (95%): 0.006

Adj. critical t value (95%): 2.849

Summary Statistics For GWR Parameter Estimates

---------------------------------------------------------------------------

Variable Mean STD Min Median Max

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X0 -33.732 242.180 -815.040 20.970 332.678

X1 2.718 0.858 0.317 2.720 4.243

X2 3.560 2.780 -0.874 3.629 10.744

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===========================================================================

Model type Gaussian

Number of observations: 67

Number of covariates: 3

Global Regression Results

---------------------------------------------------------------------------

Residual sum of squares: 3350735.459

Log-likelihood: -457.539

AIC: 921.078

AICc: 923.723

BIC: 3350466.359

R2: 0.698

Adj. R2: 0.689

Variable Est. SE t(Est/SE) p-value

------------------------------- ---------- ---------- ---------- ----------

X0 -160.570 241.290 -0.665 0.506

X1 2.381 0.196 12.153 0.000

X2 4.239 1.851 2.290 0.022

Geographically Weighted Regression (GWR) Results

---------------------------------------------------------------------------

Spatial kernel: Adaptive bisquare

Bandwidth used: 14.000

Diagnostic information

---------------------------------------------------------------------------

Residual sum of squares: 127277.039

Effective number of parameters (trace(S)): 28.011

Degree of freedom (n - trace(S)): 38.989

Sigma estimate: 57.135

Log-likelihood: -347.975

AIC: 753.971

AICc: 801.044

BIC: 817.930

R2: 0.989

Adj. alpha (95%): 0.005

Adj. critical t value (95%): 2.880

Summary Statistics For GWR Parameter Estimates

---------------------------------------------------------------------------

Variable Mean STD Min Median Max

-------------------- ---------- ---------- ---------- ---------- ----------

X0 86.914 426.541 -921.563 69.709 961.235

X1 2.871 0.937 0.380 2.935 4.368

X2 1.843 3.647 -5.015 1.377 10.300

===========================================================================

===========================================================================

Model type Gaussian

Number of observations: 66

Number of covariates: 3

Global Regression Results

---------------------------------------------------------------------------

Residual sum of squares: 1628427.934

Log-likelihood: -427.394

AIC: 860.789

AICc: 863.445

BIC: 1628163.986

R2: 0.857

Adj. R2: 0.852

Variable Est. SE t(Est/SE) p-value

------------------------------- ---------- ---------- ---------- ----------

X0 -121.622 94.302 -1.290 0.197

X1 2.804 0.147 19.009 0.000

X2 1.288 1.317 0.978 0.328

Geographically Weighted Regression (GWR) Results

---------------------------------------------------------------------------

Spatial kernel: Adaptive bisquare

Bandwidth used: 14.000

Diagnostic information

---------------------------------------------------------------------------

Residual sum of squares: 36505.457

Effective number of parameters (trace(S)): 27.663

Degree of freedom (n - trace(S)): 38.337

Sigma estimate: 30.858

Log-likelihood: -302.063

AIC: 661.453

AICc: 708.251

BIC: 724.216

R2: 0.997

Adj. alpha (95%): 0.005

Adj. critical t value (95%): 2.877

Summary Statistics For GWR Parameter Estimates

---------------------------------------------------------------------------

Variable Mean STD Min Median Max

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X0 -44.747 222.378 -790.556 19.016 223.426

X1 2.864 1.030 1.248 2.687 4.944

X2 2.129 3.178 -7.459 2.546 7.363

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===========================================================================

Model type Gaussian

Number of observations: 66

Number of covariates: 3

Global Regression Results

---------------------------------------------------------------------------

Residual sum of squares: 5085961.816

Log-likelihood: -464.977

AIC: 935.954

AICc: 938.610

BIC: 5085697.868

R2: 0.494

Adj. R2: 0.478

Variable Est. SE t(Est/SE) p-value

------------------------------- ---------- ---------- ---------- ----------

X0 732.637 435.360 1.683 0.092

X1 1.970 0.252 7.829 0.000

X2 -0.168 2.107 -0.080 0.937

Geographically Weighted Regression (GWR) Results

---------------------------------------------------------------------------

Spatial kernel: Adaptive bisquare

Bandwidth used: 15.000

Diagnostic information

---------------------------------------------------------------------------

Residual sum of squares: 300088.969

Effective number of parameters (trace(S)): 26.535

Degree of freedom (n - trace(S)): 39.465

Sigma estimate: 87.201

Log-likelihood: -371.582

AIC: 798.234

AICc: 840.178

BIC: 858.526

R2: 0.970

Adj. alpha (95%): 0.006

Adj. critical t value (95%): 2.862

Summary Statistics For GWR Parameter Estimates

---------------------------------------------------------------------------

Variable Mean STD Min Median Max

-------------------- ---------- ---------- ---------- ---------- ----------

X0 -8.204 884.981 -1593.295 -62.845 1980.045

X1 2.918 1.185 0.279 2.738 5.112

X2 2.567 4.142 -6.512 2.604 10.784

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STWR

===========================================================================

Model type Gaussian

Number of observations: 266

Number of covariates: 3

Global Regression Results

---------------------------------------------------------------------------

Residual sum of squares: 5085961.816

Log-likelihood: -464.977

AIC: 935.954

AICc: 938.610

BIC: 5085697.868

R2: 0.494

Adj. R2: 0.478

Variable Est. SE t(Est/SE) p-value

------------------------------- ---------- ---------- ---------- ----------

X0 732.637 435.360 1.683 0.092

X1 1.970 0.252 7.829 0.000

X2 -0.168 2.107 -0.080 0.937

Spatiotemporal Weighted Regression (STWR) Results

---------------------------------------------------------------------------

Spatial kernel: Adaptive spt\_bisquare

Model sita used: 0.000

Model alpha used: 0.080

Init Bandwidth used: 2.000

Model Ticktimes used: 4.000

Model Ticktimes Intervels: 79.721

Diagnostic information

---------------------------------------------------------------------------

Residual sum of squares: 25840.048

Effective number of parameters (trace(S)): 46.184

Degree of freedom (n - trace(S)): 219.816

Sigma estimate: 10.842

Log-likelihood: -290.661

AIC: 675.690

AICc: 696.566

BIC: 844.775

R2: 0.997

Adj. alpha (95%): 0.003

Adj. critical t value (95%): 2.970

Summary Statistics For STWR Parameter Estimates

---------------------------------------------------------------------------

Variable Mean STD Min Median Max

-------------------- ---------- ---------- ---------- ---------- ----------

X0 -28.475 183.692 -654.040 -5.121 682.889

X1 2.986 1.010 0.212 3.054 5.820

X2 2.732 1.286 0.907 2.520 4.854

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