

GEOGRAPHICAL WEIGHTED REGRESSION

This is a partial listing of GWR-related publications that appeared between 2000 and 2007.

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The publications are grouped by general themes (health; environment/natural resources; social sciences; economics/urban economics; methods). Note that publications can appear multiple times depending on substantive and methodological fit.

Health

Disease

Nakaya, T., Fotheringham, A. S., Brunsdon, C., & Charlton, M. (2005). Geographically weighted Poisson regression for disease association mapping. *Statistics in Medicine*, 24(17), 2695.

Heart Disease

Weng, N. (2007). *Analyzing spatial variations in heart disease mortality : a geographically weighted regression approach*. Unpublished Dissertation, Kansas State University.

Fertility

Isik, O., & Pinarcioglu, M. M. (2006). Geographies of a silent transition: a geographically weighted regression approach to regional fertility differences in Turkey. *European Journal of Population/Revue europeenne de demographie*, 22(4), 399-421.

Environment/Natural Resources

Species/Endangered species

Osborne, P. E., Foody, G. M., & Suárez-Seoane, S. (2007). Biodiversity Research. *Diversity and Distributions*, 13(3), 313.

Forestry/Agricultural Activity

Cho, S. H., Chen, Z., Yen, S. T., & English, B. C. (2007). Spatial variation of output-input elasticities: Evidence from Chinese county-level agricultural production data. *Papers in Regional Science*, 86(1), 139-157.

Lazarus, B. E., Schaberg, P. G., Hawley, G. J., & DeHayes, D. H. (2006). Landscape-scale spatial patterns of winter injury to red spruce foliage in a year of heavy region-wide injury. *Canadian Journal of Forest Research*, 36(1), 142.

Zhang, L., & Shi, H. (2004). Local Modeling of Tree Growth by Geographically Weighted Regression. *Forest Science*, 50(2), 225.

Pollution/Environmental Regulation

Atkinson, P. M., German, S. E., Sear, D. A., & Clark, M. J. (2003). Exploring the relations between riverbank erosion and geomorphological controls using geographically weighted logistic regression. *Geographical Analysis*, 35(1), 58-82.

Mennis, J. L., & Jordan, L. (2005). The distribution of environmental equity: Exploring spatial nonstationarity in multivariate models of air toxic releases. *Annals of the Association of American Geographers*, 95(2), 249-268.

Social Sciences

Crime

Cahill, M., & Mulligan, G. (2007). Using geographically weighted regression to explore local crime patterns. *Social Science Computer Review*, 25(2), 174-193.

Malczewski, J., & Poetz, A. (2005). Residential burglaries and neighborhood socioeconomic context in London, Ontario: Global and local regression analysis. *Professional Geographer*, 57(4), 516-529.

Political Science

Calvo, E., & Escolar, M. (2003). The local voter: A geographically weighted approach to ecological inference. *American Journal of Political Science*, 47(1), 189-204.

Sociology

Jordan, L. M. (2006). *Religion and demography in the United States: A geographic analysis*. Unpublished Dissertation, University of Colorado At Boulder.

Waller, L. A., Zhu, L., Gotway, C. A., Gorman, D. M., & Gruenewald, P. J. (2007). Quantifying geographic variations in associations between alcohol distribution and violence: a comparison of geographically weighted regression and spatially varying coefficient models. *Stochastic Environmental Research and Risk Assessment*, 21(5), 573-588.

Economics/Urban Economics

Labor

Dell'Aringa, C., Lucifora, C., & Origo, F. (2007). Public Sector Pay and Regional Competitiveness. a First Look at Regional Public-Private Wage Differentials in Italy. *The Manchester School*, 75(4), 445.

McMillen, D. P. (2004). Employment densities, spatial autocorrelation, and subcenters in large metropolitan areas. *Journal of Regional Science*, 44(2), 225-243.

Meurs, D., & Edon, C. (2007). France: a Limited Effect of Regions on Public Wage Differentials?*. *The Manchester School*, 75(4), 479.

Land Use

Dendoncker, N., Rounsevell, M., & Bogaert, P. (2007). Spatial analysis and modelling of land use distributions in Belgium. *Computers Environment and Urban Systems*, 31(2), 188-205.

Jensen, R. R., Gatrell, J. D., & McLean, D. D. (2005). *Geo-spatial technologies in urban environments*. Berlin: Springer.

Platt, R. V. (2004). Global and local analysis of fragmentation in a mountain region of Colorado. *Agriculture Ecosystems & Environment*, 101(2-3), 207-218.

Poverty/Welfare

Benson, T., Chamberlin, J., & Rhinehart, I. (2005). An investigation of the spatial determinants of the local prevalence of poverty in rural Malawi. *Food Policy*, 30(5-6), 532-550.

Farrow, A., Larrea, C., Hyman, G., & Lema, G. (2005). Exploring the spatial variation of food poverty in Ecuador. *Food Policy*, 30(5-6), 510-531.

Kam, S. P., Hossain, M., Bose, M. L., & Villano, L. S. (2005). Spatial patterns of rural poverty and their relationship with welfare-influencing factors in Bangladesh. *Food Policy*, 30(5-6), 551-567.

Longley, P. A., & Tobon, C. (2004). Spatial dependence and heterogeneity in patterns of hardship: An intra-urban analysis. *Annals of the Association of American Geographers*, 94(3), 503-519.

Minot, N., Baulch, B., & Epprecht, M. (2006). *Poverty and inequality in Vietnam : spatial patterns and geographic determinants*, Research Report 148 International Food Policy Research Institute, Washington DC. (available at <http://www.ifpri.org/pubs/abstract/148/rr148.pdf>).

Partridge, M. D., & Rickman, D. S. (2007). Persistent pockets of extreme American poverty and job growth: Is there a place-based policy role? *Journal of Agricultural and Resource Economics*, 32(1), 201-224.

Wheeler, B. W., Rigby, J. E., & Huriwai, T. (2006). Pokies and poverty: problem gambling risk factor geography in New Zealand. *Health Place*, 12(1), 86-96.

Economic Growth/Productivity

Yu, D. L. (2006). Spatially varying development mechanisms in the Greater Beijing Area: a geographically weighted regression investigation. *Annals of Regional Science*, 40(1), 173-190.

Externalities/Spillovers/Agglomeration

Huang, Y., & Leung, Y. (2002). Analysing regional industrialisation in Jiangsu province using geographically weighted regression. *Journal of Geographical Systems*, 4(2), 233.

Marketing

Clark, S. D. (2007). Estimating local car ownership models. *Journal of Transport Geography*, 15(3), 184-197.

Mittal, V., Kamakura, W. A., & Govind, R. (2004). Geographic patterns in customer service and satisfaction: An empirical investigation. *Journal of Marketing*, 68(3), 48-62.

Property/Land Value

Bitter, C., Mulligan, G. F., & Dall'erba, S. (2007). Incorporating spatial variation in housing attribute prices: a comparison of geographically weighted regression and the spatial expansion method. *Journal of Geographical Systems*, 9(1), 7-27.

Hernández, T., Yeates, M., & Lea, T. (2003). *Residential property valuation : an application of geographically weighted regression (GWR)*. Toronto: Ryerson University, Centre for the Study of Commercial Activity.

Kestens, Y., Theriault, M., & Des Rosiers, F. (2006). Heterogeneity in hedonic modelling of house prices: looking at buyers' household profiles. *Journal of Geographical Systems*, 8(1), 61-96.

Yu, D. (2007). Modeling owner-occupied single-family house values in the city of Milwaukee: A geographically weighted regression approach. *GIScience & Remote Sensing*, 44(3), 267-282.

Monetary Policy

Ali, L., & Kestens, Y. (2006). Contagion and crises clusters: Toward a regional warning system? *Review of World Economics*, 142(4), 814-839.

Transportation

Adhikari, S. (2006). *Application of spatial autocorrelation and geographically-weighted regression analysis for improved predictability of urban intersection vehicle crashes*. Unpublished Dissertation, Illinois Institute of Technology.

Lloyd, C., & Shuttleworth, I. (2005). Analysing commuting using local regression techniques: scale, sensitivity, and geographical patterning. *Environment and Planning A*, 37(1), 81-103.

Paez, A. (2006). Exploring contextual variations in land use and transport analysis using a probit model with geographical weights. *Journal of Transport Geography*, 14(3), 167-176.

Travel demand and land use, 2006. (2006.). Washington, D.C.: Transportation Research Board.

Travel survey methods, information technology, and geospatial data. (2006.). Washington, D.C.: Transportation Research Board.

Methods

Bayesian

Assuncao, R. M. (2003). Space varying coefficient models for small area data. *Environmetrics*, 14(5), 453-473.

Geographically-weighted regression methods

Ali, K., Partridge, M. D., & Olfert, M. R. (2007). Can Geographically Weighted Regressions Improve Regional Analysis and Policy Making? *International Regional Science Review*, 30(3), 300.

Fotheringham, A. S., Brundson, C., & Charlton, M. (2002). *Geographically weighted regression : the analysis of spatially varying relationships*. Hoboken, NJ: Wiley.

Fotheringham, S., Brundson, C., & Charlton, M. (2002). *Geographically weighted regression & associated techniques*. Chichester: Wiley.

LaFary, E. W. (2006). *People, pixels, & weights: some novel applications of remote sensing and geographically weighted regression for Evansville, Indiana*. Unpublished Disstertation, Indiana State University.

Lebreton, M. (2005). The NCSTAR model as an alternative to the GWR model. *Physica a-Statistical Mechanics and Its Applications*, 355(1), 77-84.

Leung, Y., Mei, C. L., & Zhang, W. X. (2000). Statistical tests for spatial nonstationarity based on the geographically weighted regression model. *Environment and Planning A*, 32(1), 9-32.

Leung, Y., Mei, C. L., & Zhang, W. X. (2000). Testing for spatial autocorrelation among the residuals of the geographically weighted regression. *Environment and Planning A*, 32(5), 871-890.

Mei, C. L., Wang, N., & Zhang, W. X. (2006). Testing the importance of the explanatory variables in a mixed geographically weighted regression model. *Environment and Planning A*, 38(3), 587-598.

Mei, C. L., He, S. Y., & Fang, K. T. (2004). A note on the mixed geographically weighted regression model. *Journal of Regional Science*, 44(1), 143-157.

Nakaya, T. (2001). Local spatial interaction modelling based on the geographically weighted regression approach. *GeoJournal*, 53(4), 347.

Paez, A., Uchida, T., & Miyamoto, K. (2002). A general framework for estimation and inference of geographically weighted regression models: 1. Location-specific kernel bandwidths and a test for locational heterogeneity. *Environment and Planning A*, 34(4), 733-754.

Paez, A., Uchida, T., & Miyamoto, K. (2002). A general framework for estimation and inference of geographically weighted regression models: 2. Spatial association and model specification tests. *Environment and Planning A*, 34(5), 883-904.

Paez, A. (2004). Anisotropic variance functions in geographically weighted regression models. *Geographical Analysis*, 36(4), 299-314.

Shi, H., Zhang, L., & Liu, J. (2006). A new spatial-attribute weighting function for geographically weighted regression. *Canadian Journal of Forest Research*, 36(4), 996.

Sikdar, K. C. (2003). *Application of geographically weighted regression for assessing spatial non-stationarity*. Unpublished Dissertation, Memorial University of Newfoundland.

Wheeler, D., & Tiefelsdorf, M. (2005). Multicollinearity and correlation among local regression coefficients in geographically weighted regression. *Journal of Geographical Systems*, 7(2), 161.

Wheeler, D. C., & Calder, C. A. (2007). An assessment of coefficient accuracy in linear regression models with spatially varying coefficients. *Journal of Geographical Systems*, 9(2), 145-166.

Zhang, L., & Gove, J. H. (2005). Spatial Assessment of Model Errors from Four Regression Techniques. *Forest Science*, 51(4), 334.

Mapping

Mennis, J. (2006). Mapping the results of geographically weighted regression. *Cartographic Journal*, 43(2), 171-179.