

# 10 Reasons To Find Out More About Geographically Weighted Regression

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## **ABSTRACT**

The local modelling technique of Geographically Weighted Regression (GWR) has been an evolving research area of the Spatial Analysis Research Group at Newcastle for the past six years. GWR is a powerful technique for exploring spatial non-stationarity which provides a great deal more information on spatial aspects of relationships than is produced in the traditional global forms of analysis. In a typical global regression analysis for example, a single parameter estimate is produced for the relationship of  $Y$  and  $X_1$ . This single parameter estimate represents an average of the study region in which  $Y$  and  $X_1$  are measured. GWR allows the relationship between  $Y$  and  $X_1$  to be examined at many locations within the study region and provides an estimate of the regression parameters at each location. The results may then be visualised in a GIS as surfaces and integrated with other relevant spatial data (for example, administrative boundaries to provide locational guides).

In this paper I will describe the basic mechanics of GWR and then will present 10 reasons why you might want to look at GWR in more detail. The presentation will be illustrated throughout with empirical applications of GWR in various contexts.