





Home ► All Journals ► Geography ► International Journal of Geographical Information Science List of Issues ▶ Volume 24, Issue 3 ▶ Geographically and temporally weighted r ....

International Journal of Geographical Information Science > Volume 24, 2010 - Issue 3

14.416 1.045 Views

CrossRef citations to date Altmetric

**Articles** 

## Geographically and temporally weighted regression for modeling spatio-temporal variation in house prices

Bo Huang M. Bo Wu & Michael Barry

Pages 383-401 | Received 10 Apr 2008, Accepted 30 Nov 2008, Published online: 10 Mar 2010

66 Cite this article ▲ https://doi.org/10.1080/13658810802672469

> Sample our Computer Science

Full Article

Figures & data

References

**66** Citations

Metrics

Repri

Abstra

By incor model, a

(GTWR)

simult integ

spatial a scheme

of GTWR ordinary measure

from 20

We Care About Your Privacy

We and our 911 partners store and access personal data, like browsing data or unique identifiers, on your device. Selecting I Accept enables tracking technologies to support the purposes shown under we and our partners process data to provide. Selecting Reject All or withdrawing your consent will disable them. If trackers are disabled, some content and ads you see may not be as relevant to you. You can resurface this menu to change your choices or withdraw consent at any time by clicking the Show Purposes link on the bottom of the webpage . Your choices will have effect within our Website. For more details, refer to our Privacy Policy. Here

We and our partners process data to provide:

Use precise geolocation data. Actively scan device

I Accept Reject All on (GWR) Show Purpose egression tionarity **GTWR** to capture ghting pecial cases rith global

statistical

ary, Canada,

in modeling

both spatial and temporal nonstationarity simultaneously. In the test sample, the TWR,

GWR, and GTWR models, respectively, reduced absolute errors by 3.5%, 31.5%, and 46.4% relative to a global ordinary least squares model. More impressively, the GTWR model demonstrated a better goodness-of-fit (0.9282) than the TWR model (0.7794) and the GWR model (0.8897). McNamara's test supported the hypothesis that the improvements made by GTWR over the TWR and GWR models are statistically significant for the sample data.

## Keywords:

geographically and temporally weighted regression		geographically weighted regression	
spatial nonstationarity	temporal nonstationarity	housing price	Calgary

## Acknowledgments

This research is funded by the Hong Kong Research Grants Council (RGC) under CERG project no. CUHK 444107 and the Natural Sciences and Engineering Research Council (NSERC) of Canada under discovery grant no. 312166-05. Their support is gratefully acknowledged. We also thank the two anonymous reviewers for their insightful comments that have been very helpful in improving this article.



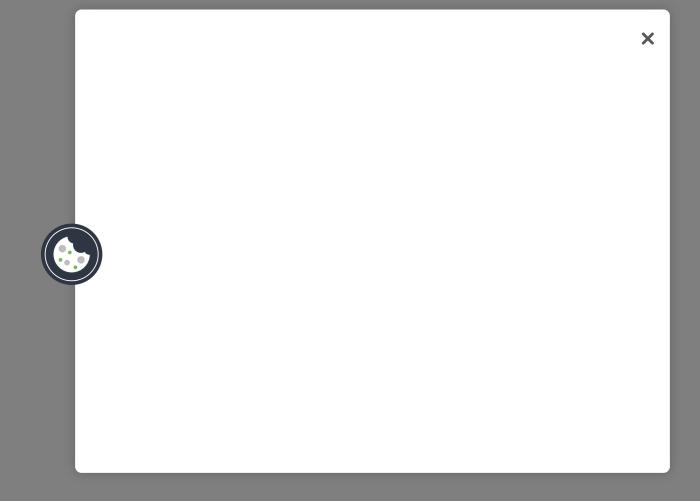
A Nonparametric Analysis of Employment Density in a Polycentric City Source: Journal of Regional Science Smoothing Parameter Selection in Nonparametric Regression Using an Improved Akaike Information Criterion Source: Journal of the Royal Statistical Society Series B (Statistical Methodology) Spatial autocorrelation and neighborhood quality Source: Regional Science and Urban Economics Space-Varying Regression Coefficients: A Semi-parametric Approach Applied to Real **Estate Markets** Source: Real Estate Economics GIS Research Infrastructure for Spatial Analysis of Real Estate Markets Source: Journal of Housing Research Statistical Tests for Spatial Nonstationarity Based on the Geographically Weighted Regression Model Source: Environment and Planning A Economy and Space The Geography of Parameter Space Source: Unknown Repository A General Framework for Estimation and Inference of Geographically Weighted Regression Models: 1. Location-Specific Kernel Bandwidths and a Test for Locational Heterogeneity Source: Environment and Planning A Economy and Space Geographically Weighted Regression: A Natural Evolution of the Expansion Method for Spati<sub>7</sub> X Sourc Geog Sourc Spati geog Sourc Some ession Sour Geog arity Sourc The D Sourc Spati Sourc Spatial Statistics and Real Estate

Source: The Journal of Real Estate Finance and Economics

Linking provided by **Schole\*\*plorer** 

## Related research 1

People also read Recommended articles Cited by 1045



Information for Open access **Authors** Overview R&D professionals Open journals Editors **Open Select** Librarians **Dove Medical Press** Societies F1000Research Opportunities Help and information Reprints and e-prints Advertising solutions Newsroom Accelerated publication Corporate access solutions Books Keep up to date Register to receive personalised research and resources by email Sign me up X or & Francis Group Copyright