INTRODUCTION TO REGRESSION AND SPATIAL ANALYSIS USED IN MASS APPRAISAL

Market Analysis Basics, Review of Linear Regression, Market Models Using Non Linear Regression and Spatial Analysis

April 28-29, 2014

Sheraton Fort Lauderdale Airport Hotel
1825 Griffin Road
Fort Lauderdale, Florida
USA

This seminar is approved for 16 hours of continuing education credits with the International Association of Assessing Officers
Introduction
The International Property Tax Institute is offering this two day seminar focusing on an introduction to regression and spatial analysis. The focus will be on market analysis basics, review of linear regression, market models using non-linear regression and spatial analysis.

Target Audience and Organizations
Although technical in nature, emphasis will be placed on updating these appraisal approaches, benefiting those who are:

- Assessors and mass appraisers seeking to gain an understanding of their local markets;
- Geographic information professionals required to perform or assist with market analysis of real property;
- New appraisers and individuals with a mathematical background intending to enter the field;
- Managers in a position to influence how the market values are developed in their jurisdiction or organization;
- Policymakers considering transition from dependence on cost-based or sales comparison formulas to those derived directly from the market.

All government organizations including assessment authorities and private firms engaged in mass appraisal of real property; property tax regulatory agencies and academics with an interest in real world application of advanced market modeling methods will find this series of seminars invaluable.

“Take-Home Value”
Statistical quality of research papers and presentation regression will be discussed with tabular and graphic results. Moving regression formulas from statistical software to an existing computer-assisted mass appraisal (CAMA) system is facilitated by the ability to reduce non-linear regression models to decomposed models to unit value tables (cost approach) for use in CAMA systems.

The seminar will review statistical models and location concepts. These concepts will be tied together in statistical models. Demonstration of statistical model decomposition will support movement of market driven and supportable valuation formulas to an existing CAMA system that may or may not provide regression components within an assessment jurisdiction’s CAMA system.

If the attendees have laptop computers, instructors will provide NCSS software prior to the seminar. Seminar registrants will receive access to NCSS software to load on to their laptops. Attendees will have hands on experience through following the demonstration of an instructor.

Faculty
Patrick M. O’Connor, ASA: Instruction and software demonstration. Pat has 40 years’ experience in mass appraisal industry. His roles have included appraisal and management positions in large assessment jurisdictions including New York City and demonstrated his leadership in computer assisted appraisal for over 30 years. One of his contributions to the appraisal profession is the concept of location value response surface as a modern method to analyze locational influences in real estate. Mr. O’Connor is an international consultant in mass appraisal and has written 39 publish articles. Pat has lectured at universities and various appraisal organization conferences. Mr. O’Connor is a co-author of Property Appraisal and Assessment Administration (1990) and Visual Valuation (2010). His presentation style is lively, but informative with a goal of keeping the audience engaged in the topic.

Michael W. Ireland, CAE: Instruction and software demonstration. Mike has over 40 years’ experience in mass appraisal in Bloomington, IL, primarily as Chief Assessor, where he completed nine reappraisals of his jurisdictions. Mr. Ireland developed an in-house CAMA system using generally available software which included MS Access, NCSS and AEP as the model development tools. Mike is a senior instructor for the International Association of Assessing Officers and an international consultant on mass appraisal modeling. Mr. Ireland was a task force member who wrote Standard 6 of Uniform Standard Professional Appraisal Practice. Mike is a Subject Matter Expert for the Appraisal Practice Board of the Appraisal Foundation and has authored various mass appraisal articles and courses. Mike is also a co-author of Visual Valuation (2010). His presentations are full of practical experience and thought provoking information.
Day 1:
Program Agenda for Monday, April 28th, 2014 • 8:00-5:00
Day One of “Regression and Spatial Analysis” seminar starts with a limited review of market analysis techniques in the form of tables and graphs. Seminar moves to basics concepts of linear and multiplicative regression. Presenters will demonstrate the application of linear regression using statistical NCSS and SPSS software. Once basics of linear regression are presented, the seminar will progress to non-linear regression, including a demonstration of non-linear regression with use of neighborhood concepts for location. Presentation will include both the benefits and potential problems with various regression techniques.

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<th>Morning Session</th>
<th>Afternoon Session</th>
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<tr>
<td>Time</td>
<td>Topic</td>
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<tr>
<td>7:30-8:00 am</td>
<td>Registration</td>
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<tr>
<td>8:00-8:15 am</td>
<td>Introduction</td>
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<tr>
<td>8:15-9:45 am</td>
<td>Basics market analysis</td>
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<td>9:45-10:00 am</td>
<td>Break</td>
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<tr>
<td>10:00-11:30 am</td>
<td>Basics of linear regression</td>
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<td>11:30-12:30 pm</td>
<td>Lunch</td>
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Day 2:
Program Agenda for Tuesday, April 29th, 2014 • 8:00-5:00
Day Two will progress from neighborhood concepts of location to improved location adjustment concepts using spatial analysis in the form of location value response surfaces (LVRS). This LVRS technique will be presented and examined using a geographic information system (GIS). While GIS provides the best available spatial analysis, it can be performed in NCSS and SPSS statistical software. Statistical models (regression) will swap out the neighborhood adjustments from ratio studies with the more supportable LVRS.

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<td>Time</td>
<td>Topic</td>
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<tr>
<td>8:00-8:30 am</td>
<td>Review of regression with neighborhood concepts</td>
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<tr>
<td>8:30-9:45 am</td>
<td>Basics of spatial analysis, location value response surface (LVRS)</td>
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<td>9:45-10:00 am</td>
<td>Break</td>
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<td>10:00-11:30 am</td>
<td>Demonstration of spatial analysis concepts</td>
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SEMINAR INFORMATION AND REGISTRATION

Seminar Fees
(Fee includes materials, coffee breaks and applicable taxes)
  Regular fee: $495.00 US/pp
  IPTI Member fee: $475.00 US/pp
  3 or more from same organization: $475.00 US/pp

Registration Deadline:  April 17, 2014

Refund Policy:  All cancellations must be made in writing. Cancellations received 15 days prior to the event will be charged a 25% administration fee. No refund for cancellations received after this deadline. Substitutes welcome.

Hotel Information:
Sheraton Fort Lauderdale Airport, 1825 Griffin Road, Fort Lauderdale (Dania Beach), Florida, USA.
A block of rooms has been booked at the rate of $129.00 single or double occupancy (room only) plus applicable taxes. Contact the hotel directly at 1.800.325.3535 or book on-line at: https://www.starwoodmeeting.com/StarGroupsWeb/booking/reservation?id=1401080876&key=3DC5A. Please request the IPTI Group Rate only available until April 20, 2014.

REGISTRATION FORM:
Please use one form per registration and forward completed registration noting payment method to the International Property Tax Institute, 4950 Yonge Street, Suite 2308, Toronto, Ontario M2N 6K1 Attn: Conference Division. If paying by IPTI's on-line payment please submit payment and fax completed registration form to: 416-644-5152 or email to lkonet@ipti.org. For on-line payment, please go to: http://www.ipti.org/main-registration-page/?ee=68

Delegate Name on Badge: ___________________________ / ___________________________
  First Name  Last Name

Organization Name: ________________________________  Title: __________________________

Email: ________________________________  Fax #: ________________________________

City: ________________________________  Country: ________________________________

PAYMENT INFORMATION (indicate payment method below)

I am an IPTI Member:
  Yes ☐
  No ☐

Payment by cheque ☐  IPTI’s On-Line Payment ☐

Total Fee Remitted:  $ _______________ US