Trends in Valuation and Online Closings

Dr. Jessica Lautz
VP Demographics and Behavioral Insights, Research Group
National Association of REALTORS®
AVMs
How AVMs Typically Work

Collect Data
- Needs access and availability
  - Home Attributes
  - Economic Activity
  - Unstructured Data

Identify models
- Traditional Models
  - Machine Learning
  - Deep Learning

Model finds patterns

Test and evaluate models
- Accuracy Metrics

Application
- Entering address in website
- Software
Who creates AVMs?

- Real Estate Companies
- Brokerages
- Consulting Companies
- Analytics Companies
- Lending Institutions
- Engineers
- Mathematicians
- Students
- Anyone who has access to data
Limitations

- May not all comply with appraisal regulations and standards
- Value vs. Price
- Data used are different
- Different types of property have different characteristics
- Missing data
- More of the same, better predictions
- How do we know what comparable data is used?
  - Proprietary algorithms and a lot we don’t know
Future of AVMs: Newer Trends & What’s Next?

- Commercial Real Estate
- Hyper-localized data
- Image Recognition and Video Recognition
- More Artificial Intelligence and combination of:
  - Traditional models
  - Machine Learning
  - Deep Learning
- More computing power, storage space, data
- More unstructured data
Future of AVMs: Hyper-Localized Data

- Open data
- Aggregated data
  - Better data collection standards
  - More from tract and block levels
- Create new proximity features from location
  - Consider transportation and driving times
  - Creating indices for economic activities
- Unstructured Data
- GIS (Geographic Information System)
Future of AVMs: Image and Video Recognition

- Confirm accuracy of information
- Additional features for a property/location
  - Image/Video tagging
  - Identify condition of home and damages
  - Identify property style
  - Identify brands of appliances
  - Use satellite data
- Ability to scan many homes very fast
- Example of unstructured data
Appraisal Survey of NAR Members
Appraiser Survey

• December 2018
• 66% were completely residential, 32% residential but some commercial
• Non-Appraisers:
  • 3,830 members responded to the survey
  • A response rate of 7 percent
  • Margin of error for results overall is +/-1.9 percent
• Appraisers:
  • 273 were appraisers
  • Margin of error +/-5.75 percent for appraiser results
Have you ever had/conducted an appraisal of a home through...
N = 2,665

- **IN-PERSON APPRAISAL OF HOME**
  - Non-Appraisers: 94%
  - Appraisers: 99%

- **DESKTOP APPRAISAL (APPRAISER DID NOT ENTER HOME)**
  - Non-Appraisers: 23%
  - Appraisers: 59%

- **AUTOMATED VALUATION MODEL (AVM)**
  - Non-Appraisers: 18%
  - Appraisers: 15%

- **EVALUATION (NON-APPRAISER PROVIDED VALUE OPINION)**
  - Non-Appraisers: 14%

- **OTHER APPRAISAL METHOD**
  - Non-Appraisers: 3%
  - Appraisers: 14%
53% of Non-Appraisers Have Had a Transaction Fall Through Due to Appraisal

- Appraised Value: 94%
- Need for Repairs: 27%
- Square Footage: 8%
- Other: 7%
IN YOUR LOCAL AREA HOW EASY OR DIFFICULT IS IT TO OBTAIN A HOME APPRAISAL?
N = 2,665

- 7 - Very difficult
- 6 - Difficult
- 5 - Somewhat difficult
- 4 - Neither easy nor difficult
- 3 - Somewhat easy
- 2 - Easy
- 1 - Very easy

5% 11% 16% 34% 33%
What is the typical wait time in calendar days for a home appraisal?
(Enter numeric number of days)

N = 2,665

Median = 7 days
What is the typical cost for an appraisal in your local market?
(Enter numeric dollar amount)

N = 2,665

Median = $450
HOW COMFORTABLE ARE YOU WITH...

N = 2,665

<table>
<thead>
<tr>
<th>Category</th>
<th>5 - Very uncomfortable</th>
<th>4 - Not very comfortable</th>
<th>3 - Neutral/Don't know</th>
<th>2 - Somewhat comfortable</th>
<th>1 - Very comfortable</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVM APPRAISALS</td>
<td>25%</td>
<td>33%</td>
<td>27%</td>
<td>12%</td>
<td></td>
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<tr>
<td>DESKTOP APPRAISALS</td>
<td>22%</td>
<td>43%</td>
<td>19%</td>
<td>14%</td>
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<tr>
<td>EVALUATIONS</td>
<td>28%</td>
<td>36%</td>
<td>19%</td>
<td>14%</td>
<td></td>
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</tbody>
</table>
What is the **price point of the home in your area when an AVM would be appropriate to the transaction?**

N = 2,665
Median = Under $200,000

<table>
<thead>
<tr>
<th>Price Range</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>NEVER APPROPRIATE</td>
<td>37%</td>
</tr>
<tr>
<td>UNDER $49,999</td>
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</tr>
<tr>
<td>UNDER $100,000</td>
<td>6%</td>
</tr>
<tr>
<td>UNDER $150,000</td>
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<tr>
<td>UNDER $200,000</td>
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<tr>
<td>UNDER $250,000</td>
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<tr>
<td>UNDER $300,000</td>
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<tr>
<td>UNDER $350,000</td>
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<tr>
<td>UNDER $400,000</td>
<td></td>
</tr>
<tr>
<td>UNDER $450,000</td>
<td></td>
</tr>
<tr>
<td>UNDER $500,000</td>
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</tr>
<tr>
<td>$500,000 OR MORE</td>
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<tr>
<td>ALWAYS APPROPRIATE</td>
<td>29%</td>
</tr>
<tr>
<td>NOT SURE</td>
<td></td>
</tr>
</tbody>
</table>
What is the price point of the home in your area when a *desktop appraisal* (where a professional appraiser does not enter the home) would be appropriate to the transaction?

N = 2,665

Median = Under $200,000

- **NEVER APPROPRIATE**: 35%
- **UNDER $49,999**: 4%
- **UNDER $100,000**: 7%
- **UNDER $150,000**: 4%
- **UNDER $200,000**: 3%
- **UNDER $250,000**: 3%
- **UNDER $300,000**: 1%
- **UNDER $350,000**: 2%
- **UNDER $400,000**: 2%
- **UNDER $450,000**: 1%
- **UNDER $500,000**: 0%
- **$500,000 OR MORE**: 2%
- **ALWAYS APPROPRIATE**: 32%
- **NOT SURE**:
What is the price point of the home in your area when an evaluation (where a non-appraiser provides value opinion) would be appropriate to the transaction?

N = 2,665

Median = Under $200,000

- Never Appropriate: 42%
- Under $49,999: 3%
- Under $100,000: 4%
- Under $150,000: 3%
- Under $200,000: 2%
- Under $250,000: 2%
- Under $300,000: 1%
- Under $350,000: 1%
- Under $400,000: 0%
- Under $450,000: 2%
- Under $500,000: 1%
- $500,000 or more: 5%
- Always Appropriate: 31%
- Not Sure: 2%
Consumer Opinion on iBuyers
Methodology:

• The data is based on a phone survey on approximately 900 US adults, for a margin of error +/- 3.3%.
• This is a mix of cell phones and landlines.
• It is weighted based on US homeownership rates.
U.S. Public Knowledge of iBuyers

- Only 5% of US households have heard of iBuyers
  - There is slightly more awareness in the South—but only 6%—this is statistically significant
- Of those aware of iBuyer—28% said they do know of someone who used one
  - Among the 28% that knew of personal use—(these are too small to be considered statistically significant)
    - 24% were somewhat satisfied
    - 52% were either not very satisfied or not at all satisfied
Likelihood to Use

- After iBuyers were explained to respondents (An iBuyer is a real estate investor or company that uses technology to value a home and make a cash offer on a home within a very short timeframe, without visiting the home. Once the offer is accepted, the closing could be in just a few days. The price could be below what it could have gotten you by normal marketing of your home. If you were to consider selling your home, how likely would you be to consider an iBuyer?)
  - Likely to use:
    - 18% were either very or somewhat likely to try an iBuyer to ever sell
    - 79% were either not very likely or not at all likely to try an iBuyer to sell
Discount the Price?

• At what discounted price, likely to use:
  • 14% **would not take a discounted price**
  • 16% **reiterated they would never use this type of sale**
  • 21% would consider taking 5% or less
  • 10% would consider taking 10% or less
  • 8% would consider taking 15% or more
  • 33% were not sure
Attom Research on iBuyers

Member Opinion on E-closings
How desirable is it for you to have documents electronically in each of the following steps of the closing process (if your state laws permitted you to do so)?

N = 2,675

<table>
<thead>
<tr>
<th>Step</th>
<th>Not at all desirable</th>
<th>Somewhat undesirable</th>
<th>Neutral/No opinion</th>
<th>Desirable</th>
<th>Very desirable</th>
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<tbody>
<tr>
<td>SIGN CONTRACT</td>
<td>4%</td>
<td>19%</td>
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<td>73%</td>
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</tr>
<tr>
<td>COUNTER-OFFERS/NEGOTIATION</td>
<td>6%</td>
<td>19%</td>
<td></td>
<td>71%</td>
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<tr>
<td>INSPECTION DOCS</td>
<td>8%</td>
<td>24%</td>
<td></td>
<td>64%</td>
<td></td>
</tr>
<tr>
<td>MORTGAGE PRE-APPROVAL AND APPLICATION</td>
<td>9%</td>
<td>24%</td>
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<td>62%</td>
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<tr>
<td>SIGN AGENT REPRESENTATION DISCLOSURE</td>
<td>9%</td>
<td>22%</td>
<td></td>
<td>64%</td>
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<tr>
<td>APPRAISAL DOCS</td>
<td>14%</td>
<td>24%</td>
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<td>58%</td>
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<tr>
<td>CLOSING DOCS</td>
<td>10%</td>
<td>22%</td>
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<td>61%</td>
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<tr>
<td>MORTGAGE UNDERWRITING DOCS</td>
<td>18%</td>
<td>23%</td>
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<td>54%</td>
<td></td>
</tr>
<tr>
<td>GOVERNMENT/TAX PAPERWORK</td>
<td>19%</td>
<td>22%</td>
<td></td>
<td>52%</td>
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<tr>
<td>RECORDING</td>
<td>5%</td>
<td>19%</td>
<td></td>
<td>53%</td>
<td></td>
</tr>
<tr>
<td>TITLE TRANSFER</td>
<td>5%</td>
<td>19%</td>
<td></td>
<td>50%</td>
<td></td>
</tr>
</tbody>
</table>
What is your level of comfort with electronic documents/electronic processing within transactions involving each of the following stages?

N = 2,675

<table>
<thead>
<tr>
<th>Stage</th>
<th>Not at all comfortable</th>
<th>Somewhat uncomfortable</th>
<th>Neutral</th>
<th>Fairly comfortable</th>
<th>Very comfortable</th>
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</thead>
<tbody>
<tr>
<td>Sign a contract</td>
<td>5%</td>
<td>18%</td>
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<td>70%</td>
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<tr>
<td>Counter-offers/negotiation</td>
<td>7%</td>
<td>19%</td>
<td></td>
<td>69%</td>
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<tr>
<td>Sign agent representation disclosure</td>
<td>4%</td>
<td>8%</td>
<td>20%</td>
<td>66%</td>
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<tr>
<td>Inspection docs</td>
<td>13%</td>
<td>19%</td>
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<td>63%</td>
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<tr>
<td>Mortgage pre-approval and application</td>
<td>16%</td>
<td>20%</td>
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<td>57%</td>
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<td>Appraisal docs</td>
<td>20%</td>
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<td>56%</td>
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<td>Closing docs</td>
<td>5%</td>
<td>15%</td>
<td>21%</td>
<td>54%</td>
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<tr>
<td>Mortgage underwriting docs</td>
<td>4%</td>
<td>23%</td>
<td>19%</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>Government/tax paperwork</td>
<td>5%</td>
<td>24%</td>
<td>19%</td>
<td>48%</td>
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<tr>
<td>Recording</td>
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<td>23%</td>
<td>18%</td>
<td>49%</td>
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</tr>
<tr>
<td>Title transfer</td>
<td>7%</td>
<td>5%</td>
<td>24%</td>
<td>18%</td>
<td>46%</td>
</tr>
</tbody>
</table>
Consumer Opinion on E-closings
Methodology:
• The data is based on a phone survey on approximately 900 US adults, for a margin of error +/- 3.3%.
• This is a mix of cell phones and landlines.
• It is weighted based on US homeownership rates.
Consumer Comfort with E-Signatures

- 36% very comfortable
- 19% fair comfortable
- 19% neutral
Consumer Desire with E-Signatures

- 23% very desirable
- 11% desirable
- 38% neutral
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