



Real Estate Market Analysis Smith Realty, LLC Arlington, VA

Team 5

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Agenda



I. Objective & Motivations



II. Data Background



III. Analysis Process

IV. Exploring the Data



V. Exploratory Analysis Findings



VI. Recommendations



Analysis Objective & Motivations

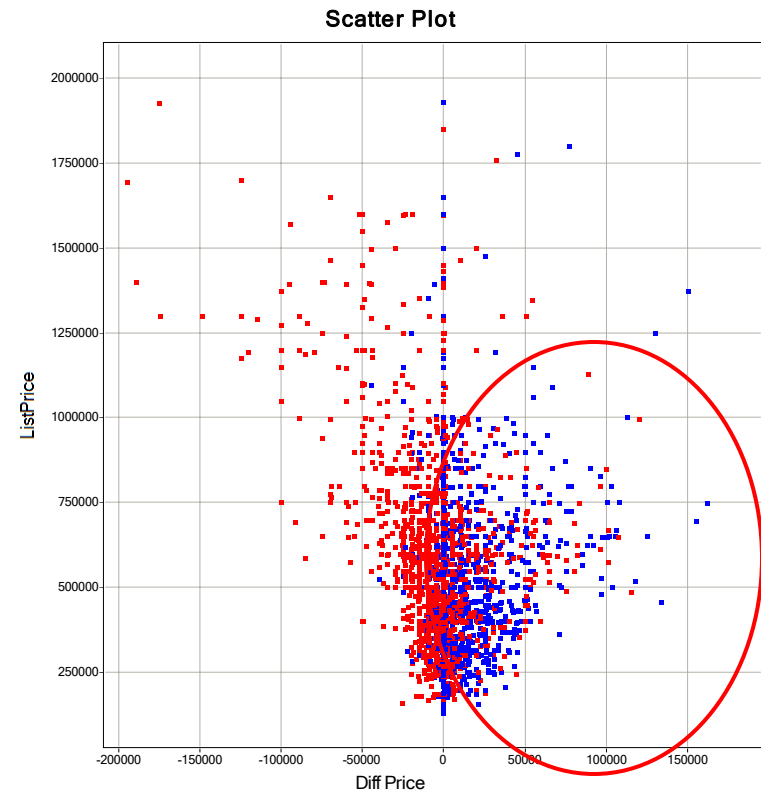
■ Situational Context

- ❖ Smith Realty, LLC in Arlington, VA has experienced tight cash flows, excess inventory and a limited marketing budget
- ❖ How does Smith Realty, LLC use their marketing dollars to go after customers whose homes would be quick sells to offset their business problems?

■ Analysis Motivations

- ❖ Determine those properties that were “quick sells” vs. “non quick sells”, defined by “sale within 7 days”
- ❖ Understand what drivers caused a property to sell quickly vs. not sell quickly

List vs. Close Price Difference

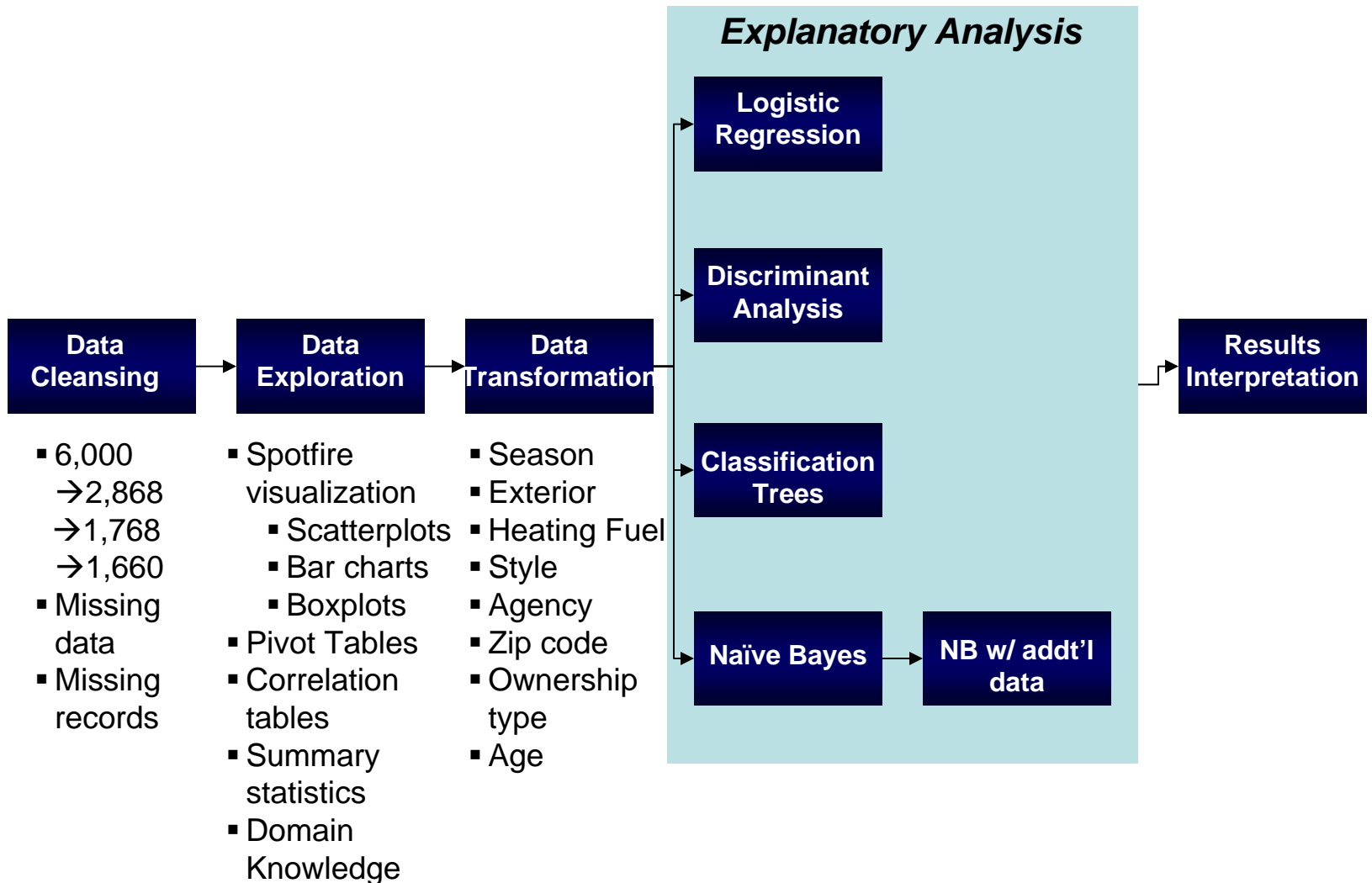


Higher revenues with quick sells

Blue = Quick Sell
Red = Not Quick Sell



Analysis Process



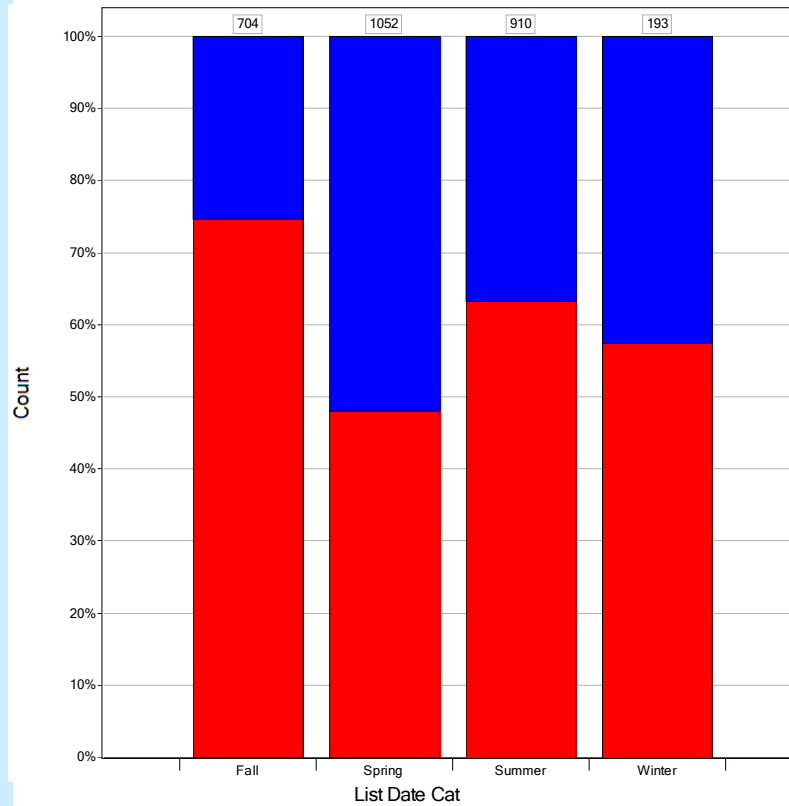


Exploring the Data

- Seasonality has an impact. Spring and summer sell quicker than winter or fall
- Houses with brick sell quicker than those without brick

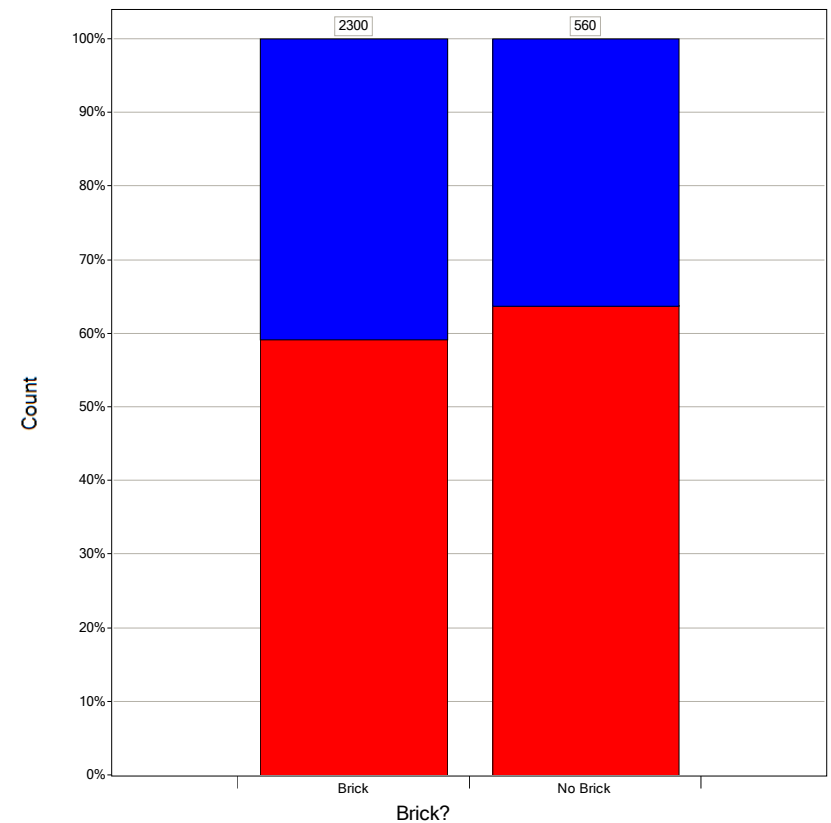
Seasonality

Bar Chart



Brick / No Brick

Bar Chart

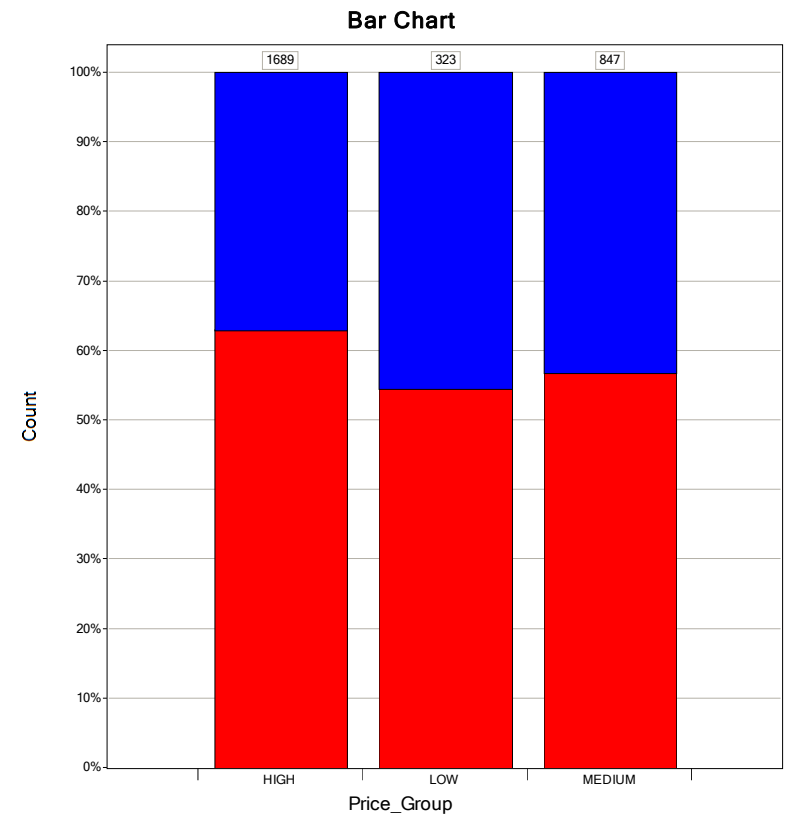
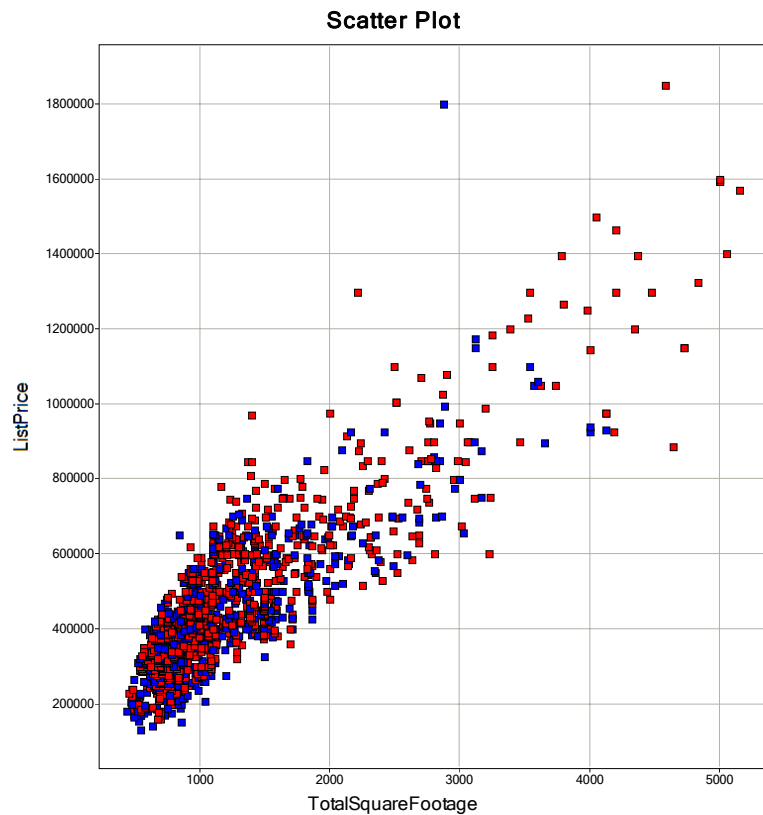


Blue = Quick Sell
Red = Not Quick Sell



Exploring the Data

- As square footage increases (# bedrooms, bath, etc) so does list price
- List price alone does not seem to clearly determine quick vs. not quick sell, but low-medium prices seem to have more quick sells



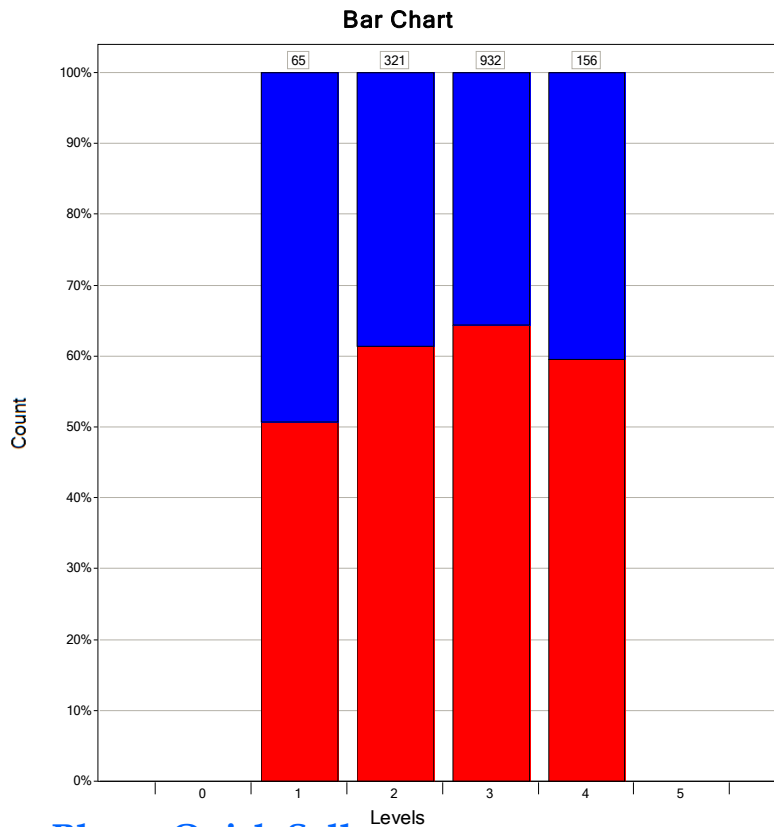
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Exploring the Data

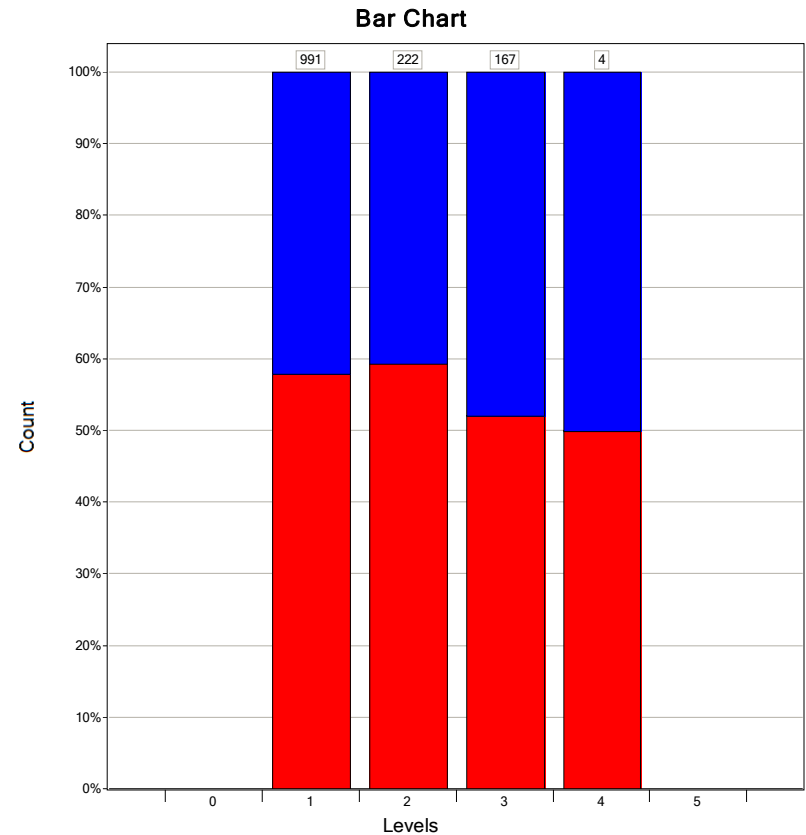
- Levels in a single family home don't seem to have a quick sell impact, but levels in condos or townhouses do have an impact

Single Family Home Levels



Blue = Quick Sell
Red = Not Quick Sell

Condo & Townhouse Levels





Exploratory Analysis Findings

- **Models Used:** Logistic Regression, DA, Class Trees, Naïve Bayes
 - ❖ All models found that the same combination of predictor variables produced the most optimal model
 - ❖ In each of the different model types, the Error Rate could not be improved beyond 33%
- **Preferred Model:** Logistic Regression
 - ❖ Model can accurately determine which properties will NOT be a quick-sell (~20% error)
 - ❖ Does not produce good results in determining which will be quick sells (~50% error)

Classification Confusion Matrix		
	Predicted Class	
Actual Class	Yes	No
Yes	333	352
No	201	774

Error Report			
Class	# Cases	# Errors	% Error
Yes	685	352	51.39
No	975	201	20.62
Overall	1660	553	33.31



Key Variables



Seasonality

- ❖ **Summer/Spring best** - A house sells 5X faster in spring than winter, and 2X faster in summer than winter

List Price

- ❖ **Higher List = less likely quick sell** - However, the decrease in the odds is very small per \$1 of price. Over \$800K were mostly non-quick sells



of Floors

- ❖ **More Levels = more likely quick sell** – Especially noticeable for Condos and Townhouses with 3 – 4 levels.



Garage Spaces

- ❖ **More Spaces = more likely quick sell** - The number of garage spaces increases the likelihood of being a quick sell.



Brick Exterior

- ❖ **Brick = more likely quick sell** - Brick properties are more likely to be quick sells over other types of exteriors (i.e. vinyl siding, steel, wood, etc).



Heating Fuel Cat.

- ❖ **Gas = less likely quick sell** - Homes that use Natural Gas are less likely to be quick sells than electricity or other heating fuel types.

Total SqFt

- ❖ **More square feet = more likely quick sell** - But there is a threshold - after 2000 sqft the properties start becoming non-quick sells



Recommendations



Timing

- ❖ Aggressive marketing campaign to sellers in preparation for spring & summer season



Targeting

- ❖ Pursue properties with multiple floors (particularly for condos and townhomes), garage spaces, and brick exterior



Pricing

- ❖ Don't overprice your property or you hurt your chances of being a quick sell. Use fair market values and let the bidders pay a premium.
- ❖ Recognize price thresholds in the market: anything over \$1M will not sell quickly





Questions?



Back Up Slides



Exploring the Data

- Correlations used to select variables of influence

	ListPrice
Ownership_Fee Simple	0.609
TotalSquareFootage	0.871
Basement_False	-0.470
Baths	0.792
Bedrooms	0.768
Fireplaces	0.577
Garage Spaces	0.452
Close Price	0.996

	Type - Single Family
TotalSquareFootage	0.678
Basement_False	-0.593
Baths	0.553
Bedrooms	0.659
Fireplaces	0.478
Levels	0.506
Close Price	0.618

	TotalSquareFootage
Basement_False	-0.611
Baths	0.847
Bedrooms	0.821
Fireplaces	0.522
Close Price	0.876

- Summary statistics: greatest variability found in List Price, Age, Total square footage