



King County, USA Home Sale Price Predictors

By
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- Good afternoon, I'm going to briefly discuss a topic that is important to the group gathered here today.
- The topic is what home and market features influence price in King County Washington.

Problem Statement

Market and Home Features influence or predict home prices in King County, WA USA?

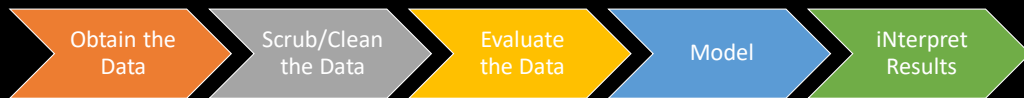
In looking at homes in King County, WA we need to understand if there are Market and Home Features that influence the price of a home.

Market and
Home Features
that increase
price = Maximize
Profit

Business Value

If specific Market and Home Features can be identified, we can understand which features can be used to maximize profits.

Methodology (OSEMN Process)



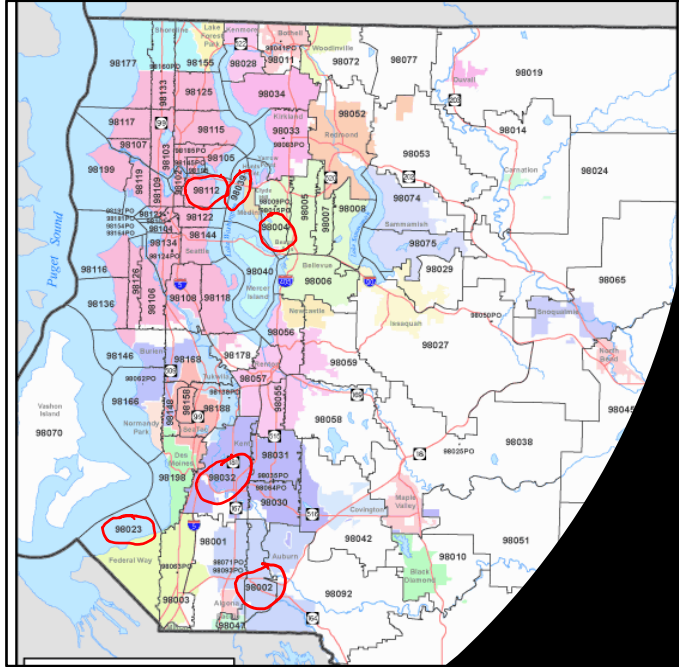
- Briefly and at a high level, in order to come up with predictors, this slide highlights the statistical study conducted using multiple regression thru a process referred to as OSEMN (“OH-sum”) to determine what market and home features have a significant relationship with home sale prices in King County Washington.



Business Recommendation #1

Zip Codes = Location Matters

- Zip code had by far the most significant relationship with home price. Both driving price up and down. Logically, this makes sense as location usually seems to be a factor when buying a home while living in one zip code can be much higher or less than another.




King County Map Zip Codes

- Top 3 Zip Codes that drive prices up are 98039, 98004, 98112.
 - 98039, Medina, WA
 - 98004, Bellevue, WA
 - 98112, Seattle, WA
- Alternatively, the top 3 Zip Codes that predict a downward shift in the relationship with price are 98023, 98032 and 98002.
 - 98023, Federal Way, WA
 - 98032, Kent, WA
 - 98002, Auburn, WA
- Looking at some of the demographics for each of these zip codes the relationship makes logical sense given the average household incomes for the first group of zip codes is significantly higher than the second set of zip codes.



Business Recommendation #2

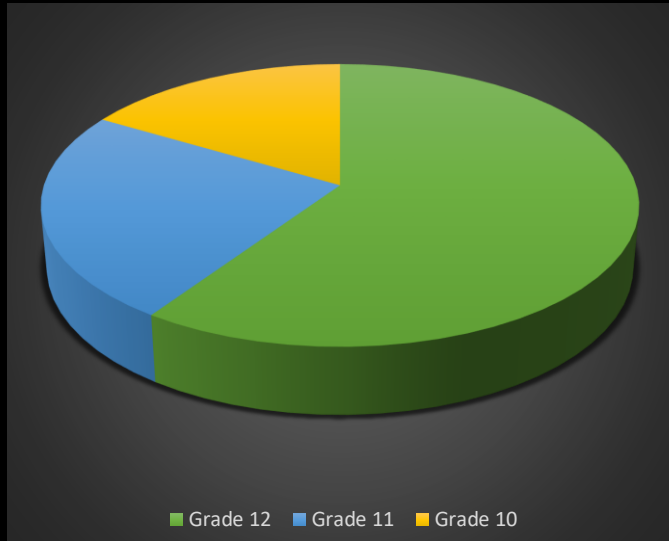
Grade



- Each home in King County has an assigned grade based on the King County grading system. There were a select few grades that had a fairly significant relationship with an increase in the price of a home.

Overall Grade

- ❖ Increase Price
- ❖ Overall Grade given to the home, based on King County Grading System



- The King County home data had a grade assigned to each home based on the King County Grading System.
- The grades that showed a significant relationship to an uptick in home price were 12, 11 and 10 with 12 being the most significant.

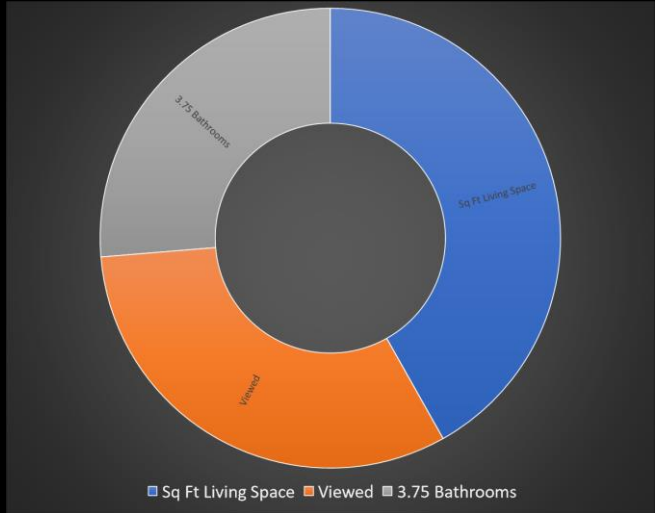
Business Recommendation #3

- Square Foot Living Space
- Viewed
- Homes with 3.75 Bathrooms

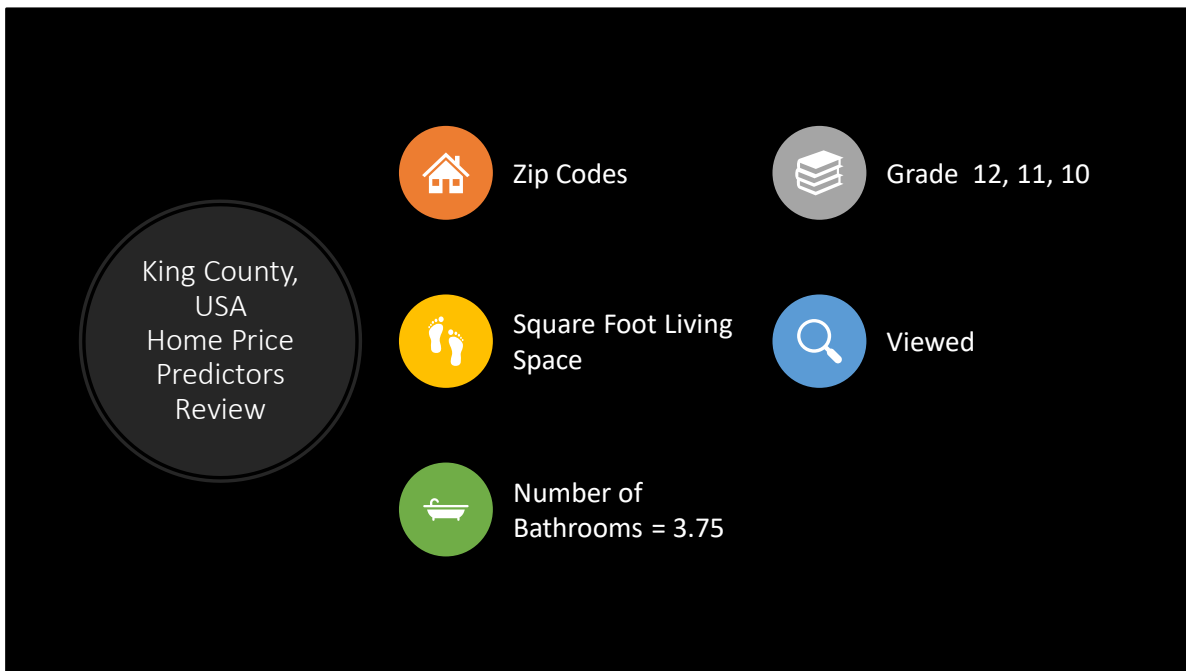
- The study also showed that as the square foot living space increases, the home price will also increase. Intuitively, this makes sense as more living space means the price for the home will be higher.
- Another significant feature is if the house has been viewed. If the house has been seen the house price will be higher. In simple terms, if a house has been seen it is likely of more interest to the home buyer versus a home that has had no viewings. If it has been viewed, it generally generates more market interest and will consequently drive up the home price.
- Interestingly, homes with a bathroom count of 3.75 generate an incremental increase in price.

Other Predictors

❖ Increase Price



- Here is another visual of the additional three features in order of significance with price:
 - Square Feet of Living Space
 - Home that has been viewed
 - Home with 3.75 bathrooms



- Briefly Review
- Zip codes. Location matters.
- King County grades assigned to home that are 12, 11 and 10.
- As square footage increases, price increases.
- If a property is viewed, there is likely high market interest that causes an uptick in price.
- Homes with 3.75 bathrooms are significant also causing an uptick in price.
- Final thing to remember once again is that each of these features through statistical modeling show a significant relationship with price but must be looked at individually as the relationship holds all other variables constant.
- Additionally, there were other variables/features that predict a down tick in price; however, the most significant relationships here were zip codes.

Future Work



DATES AND TIME OF YEAR
FEATURE



JOINING OF LONGITUDE AND
LATITUDE FEATURES FOR SPECIFIC
LOCATION

- Next steps in this analysis would be to research how dates would factor into these relationships, as historically there are definitely times of the year that prices are higher than others.
- Finally, the data did provide latitude and longitude for each home. It would be interesting to see if these two features are joined what the impact would be to the significant features identified through the modeling. For example, would a joint latitude and longitude location show a more significant relationship to price than zip code?