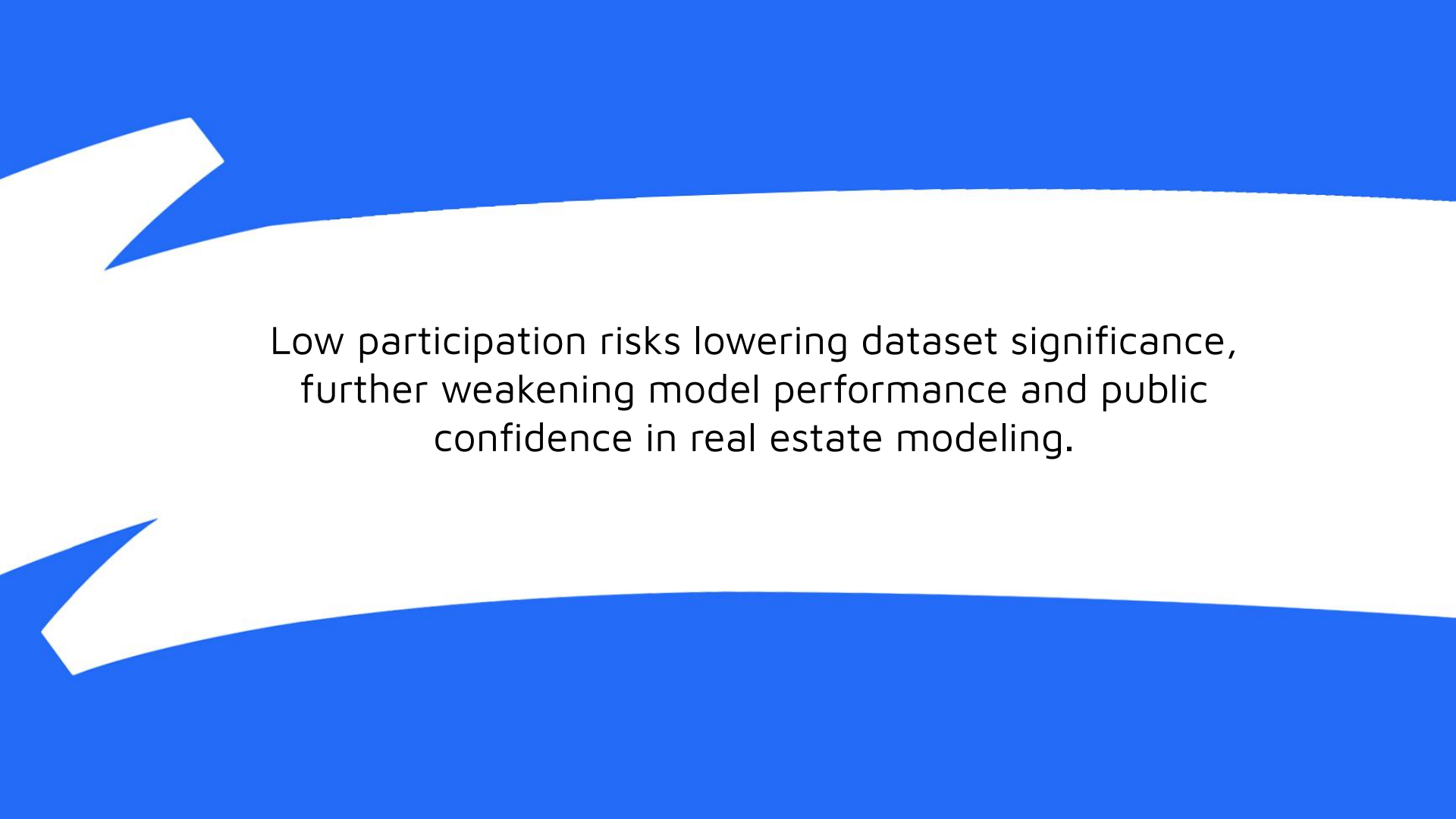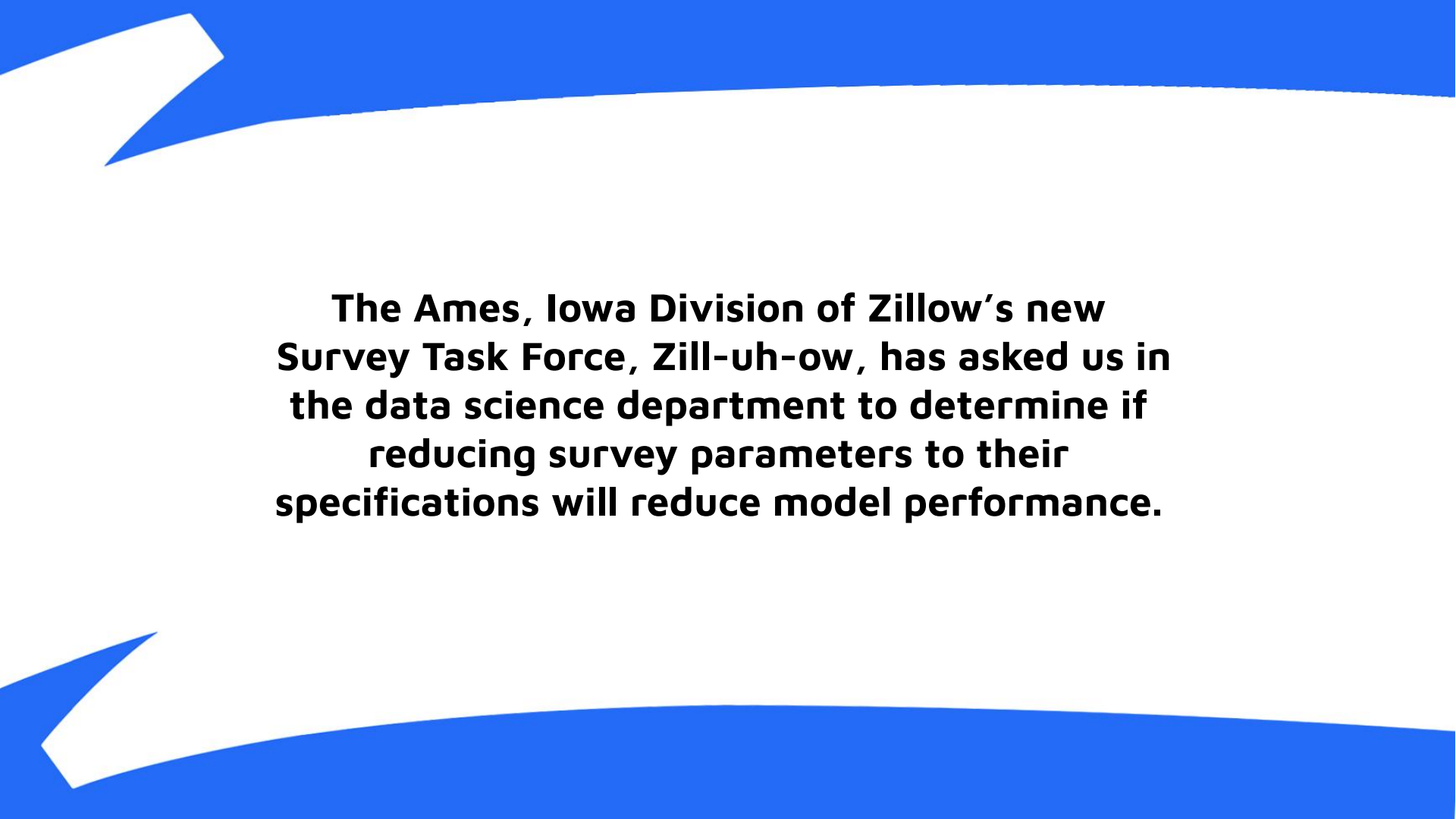Zill uh ow

Faith has been shaken in the new technology driven real estate industrial complex.

Survey response and completion rates are at
an all time low.

Low participation risks lowering dataset significance, further weakening model performance and public confidence in real estate modeling.

The Ames, Iowa Division of Zillow's new Survey Task Force, Zill-uh-ow, has asked us in the data science department to determine if reducing survey parameters to their specifications will reduce model performance.

**Zill-uh-ow Team has presented us with
a list of 32 parameters determined to be absolutely essential:**

- Lot Frontage
- Lot Area
- **Neighborhood**
- Building Type
- Overall Quality
- **Year Built**
- **Year Remodeled**
- Roof Material
- Exterior Material
- Exterior Quality
- Foundation Type

- Basement Quality
- Rating of Finished Basement Area
- Finished Basement Square Footage
- Total Basement Square Footage
- Heating Quality
- Central Air Conditioning
- First Floor Square Footage
- Second Floor Square Footage
- **Living Area Above Grade**
- **# of Full Bathrooms**
- Bedrooms Above Grade

- Year Garage Built
- Kitchen Quality
- Functional
- # of Fireplaces
- # of Cars Garage Fits
- Garage Square Footage
- If Driveway is Paved
- Month of the Sale
- Sale Type
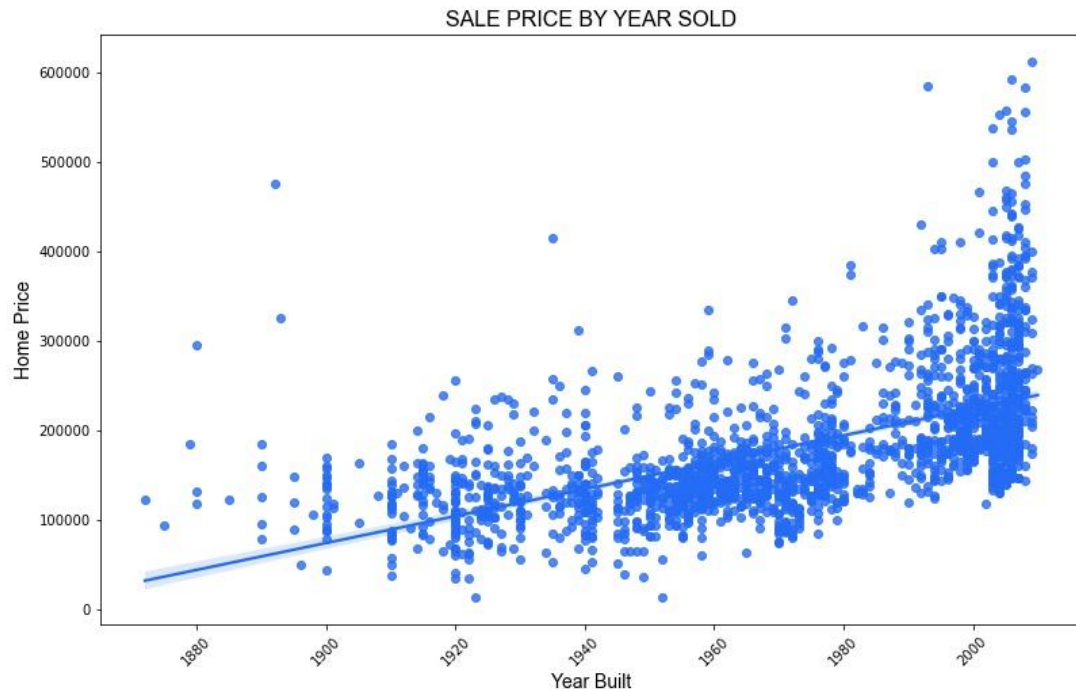- Proximity to Various Conditions

Different neighborhoods have different price ranges.

CONFIRMED.

PRICE RANGE BY NEIGHBORHOOD
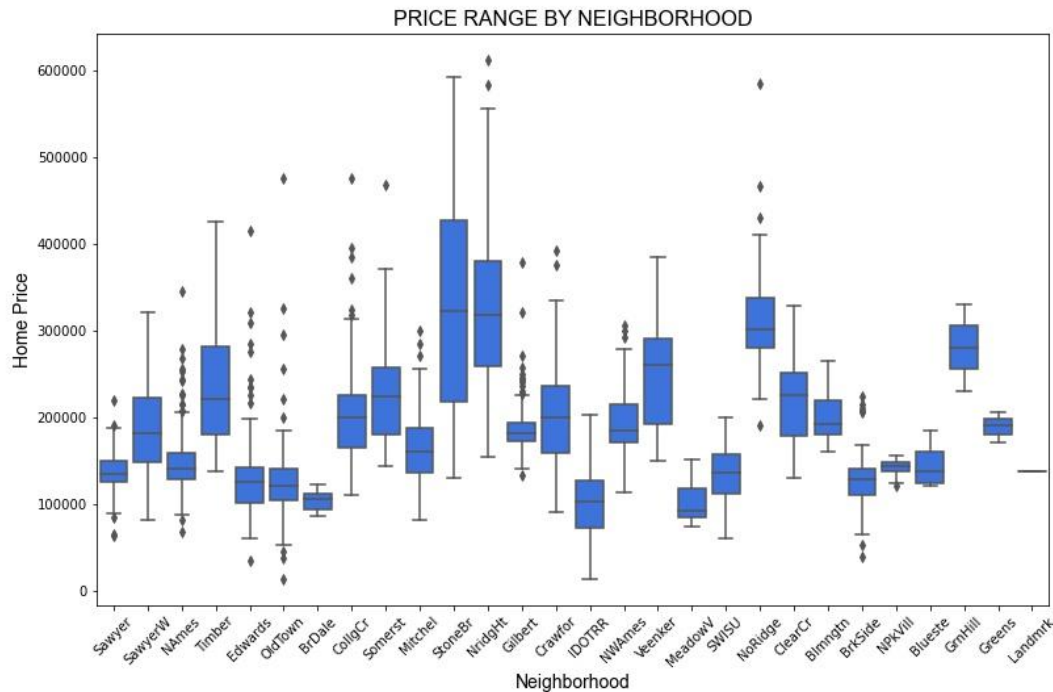
Newer homes often sell for more.

CONFIRMED.

SALE PRICE BY YEAR SOLD

The more recently a home has been remodeled, the more it can sell for.

CONFIRMED.

SALE PRICE BY YEAR REMODELED

The greater the square footage of a home, the more it can sell for.

CONFIRMED.

SALE PRICE BY ABOVE GRADE SQUARE FOOTAGE
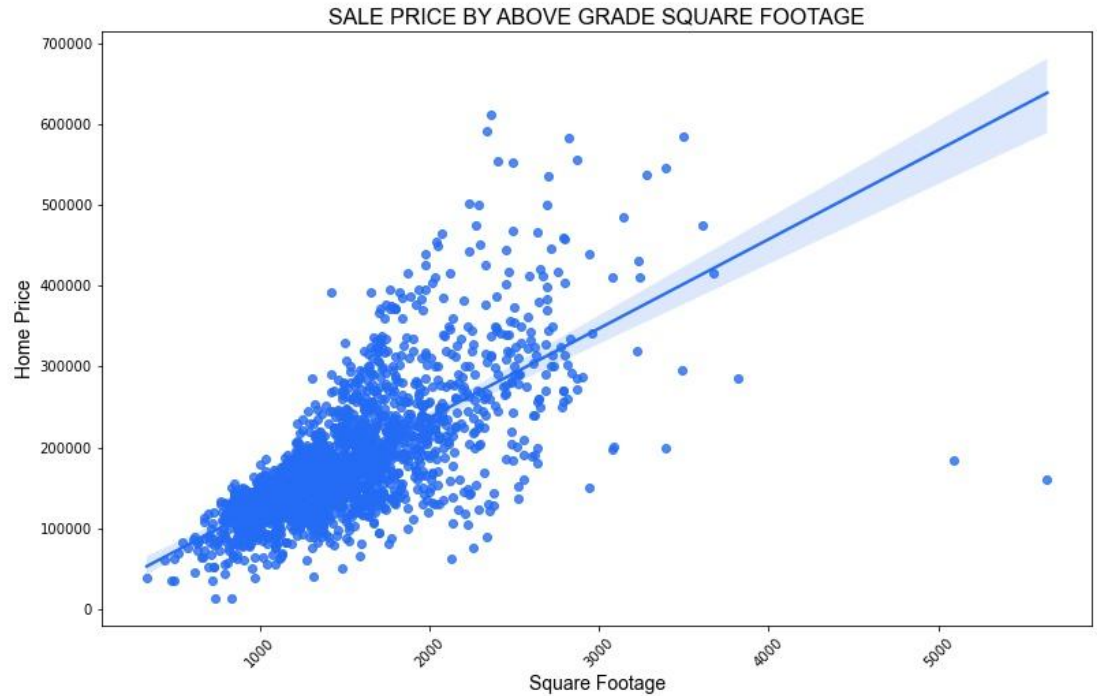
The greater the number of bathrooms in a home, increases its possible price range.
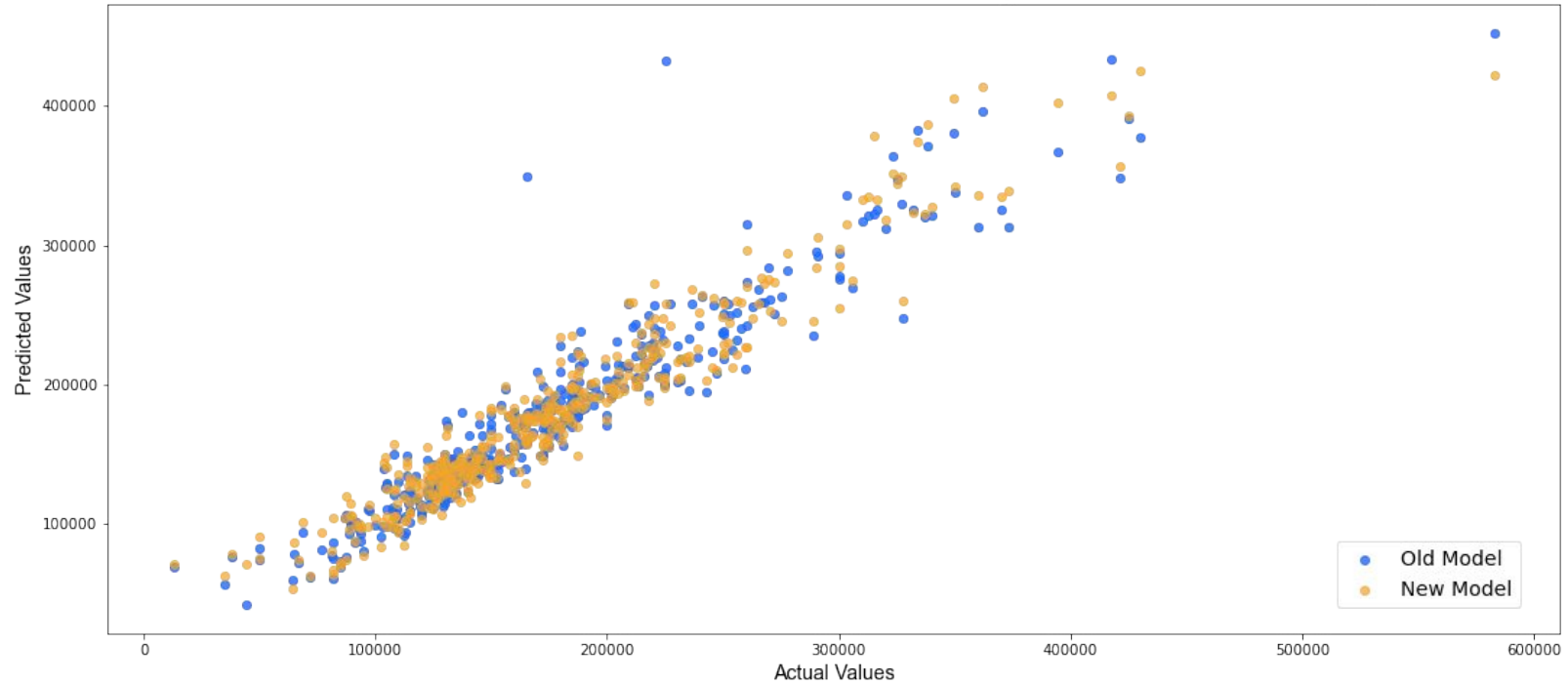
CONFIRMED.

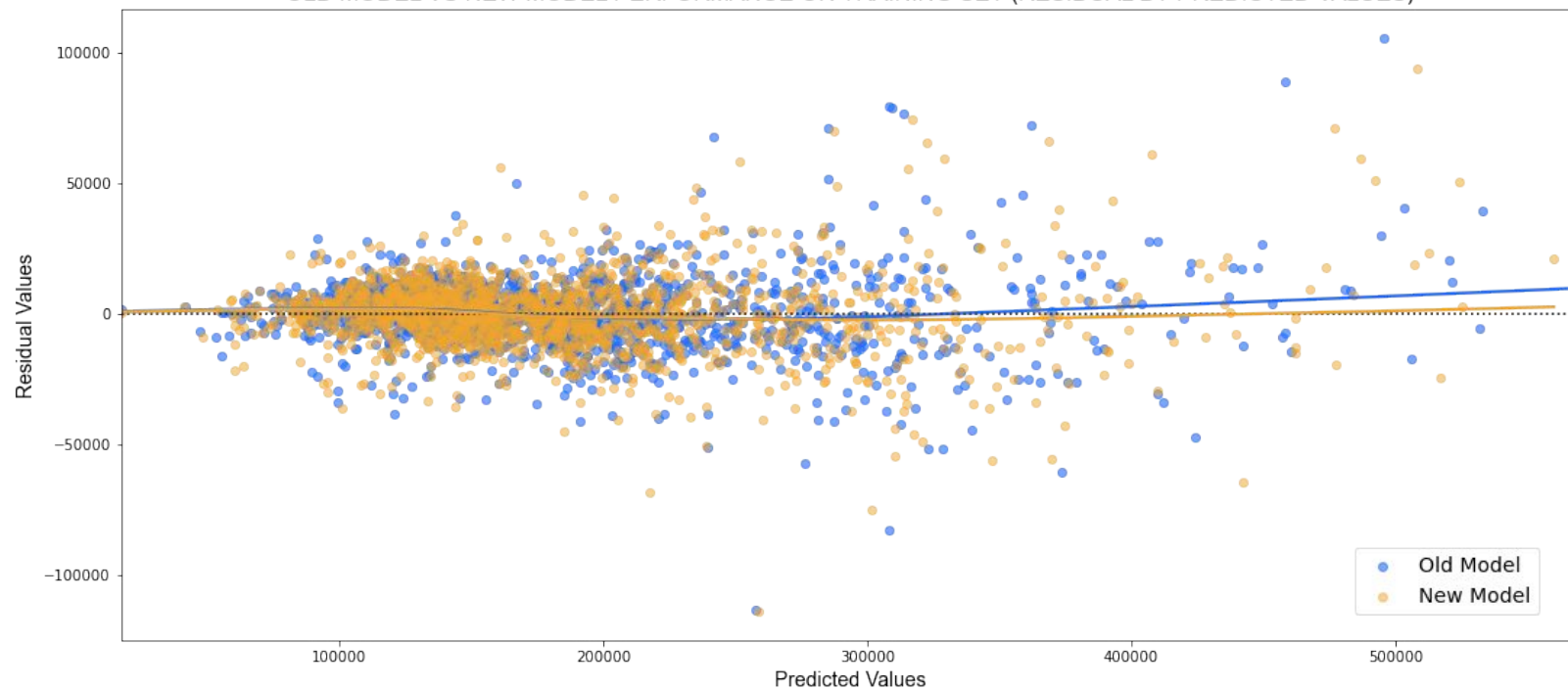PRICE RANGE BY NUMBER OF BATHROOMS ABOVE GRADE
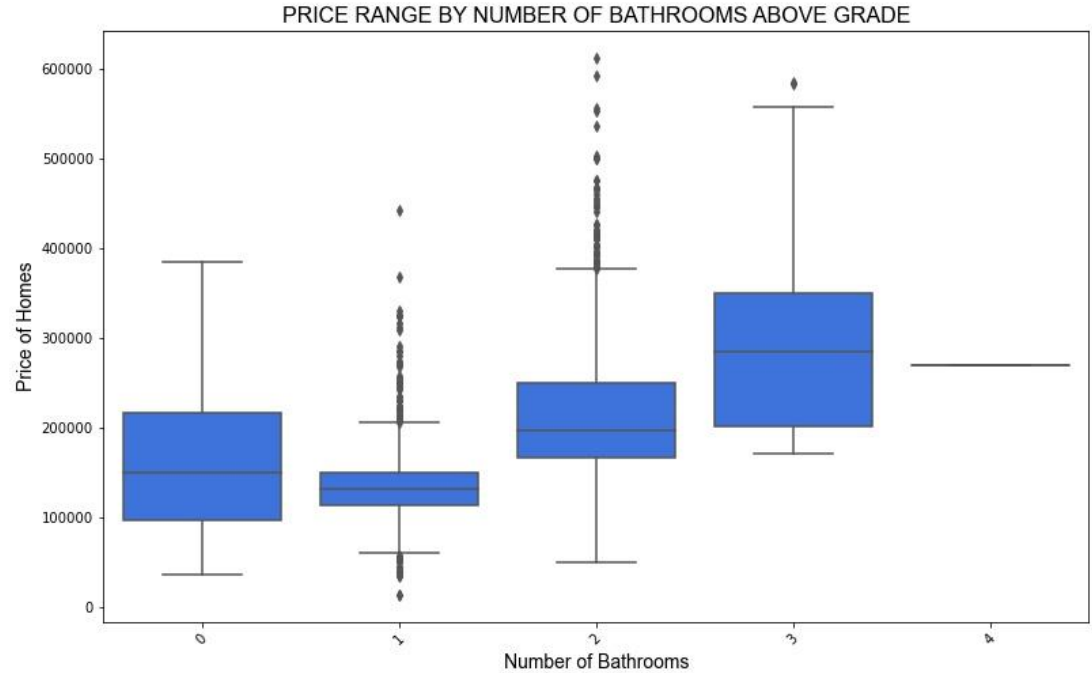
OLD MODEL VS NEW MODEL PERFORMANCE ON TRAINING SET (ACTUAL VS PREDICTED VALUES)
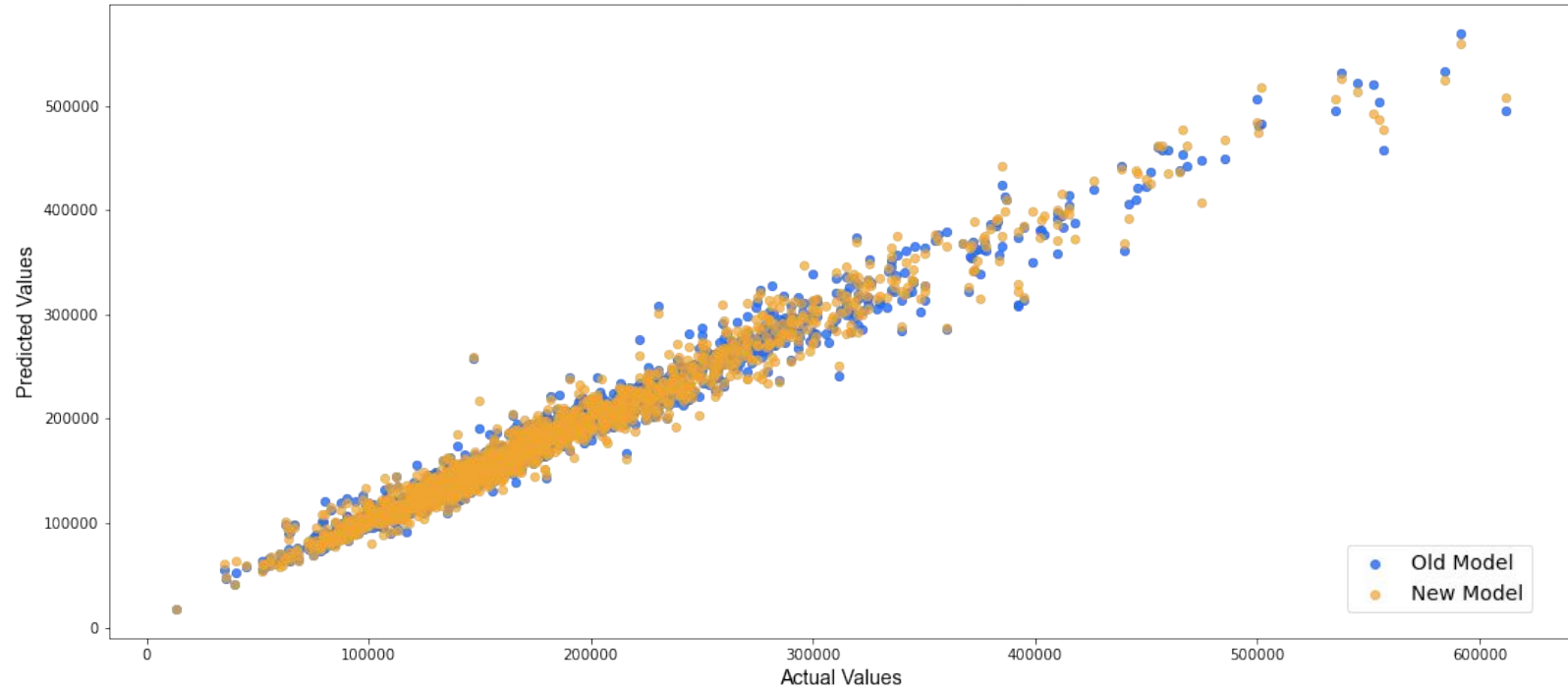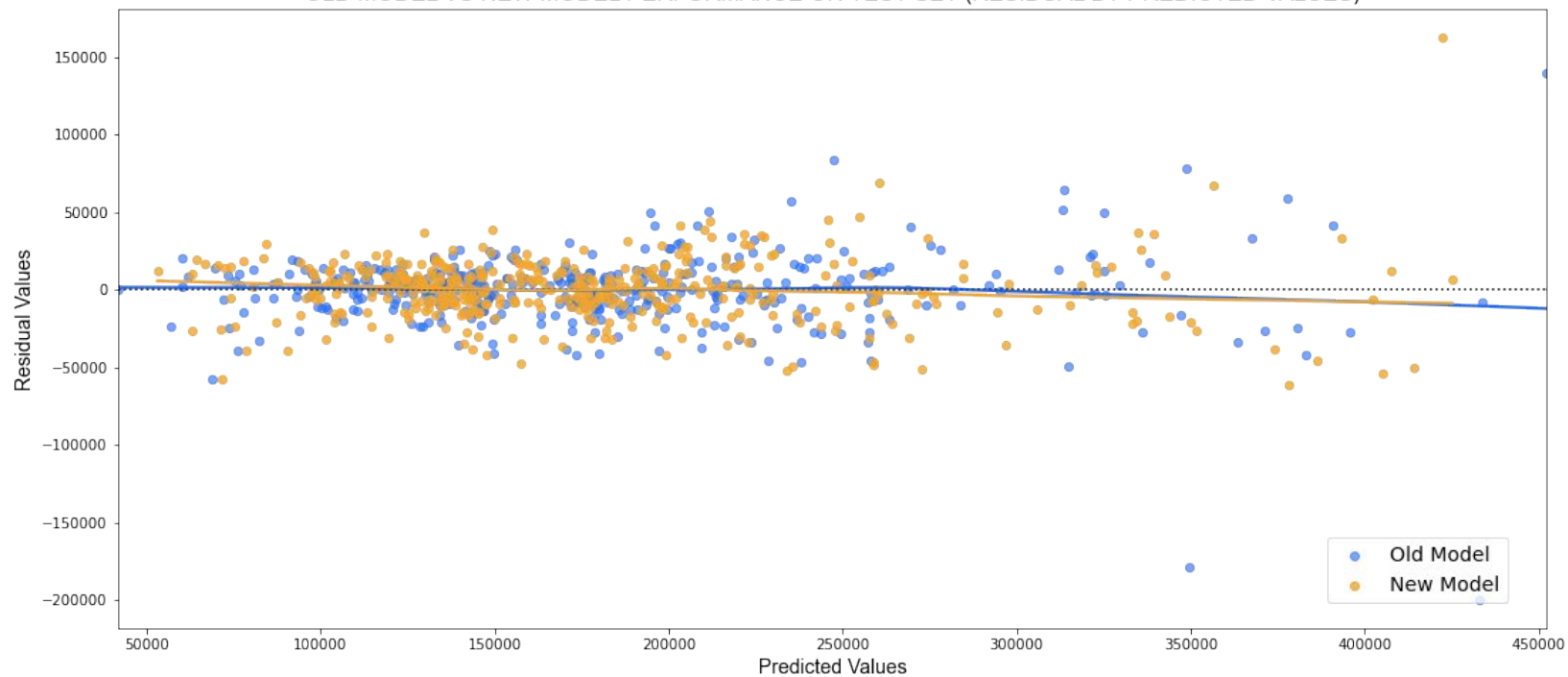
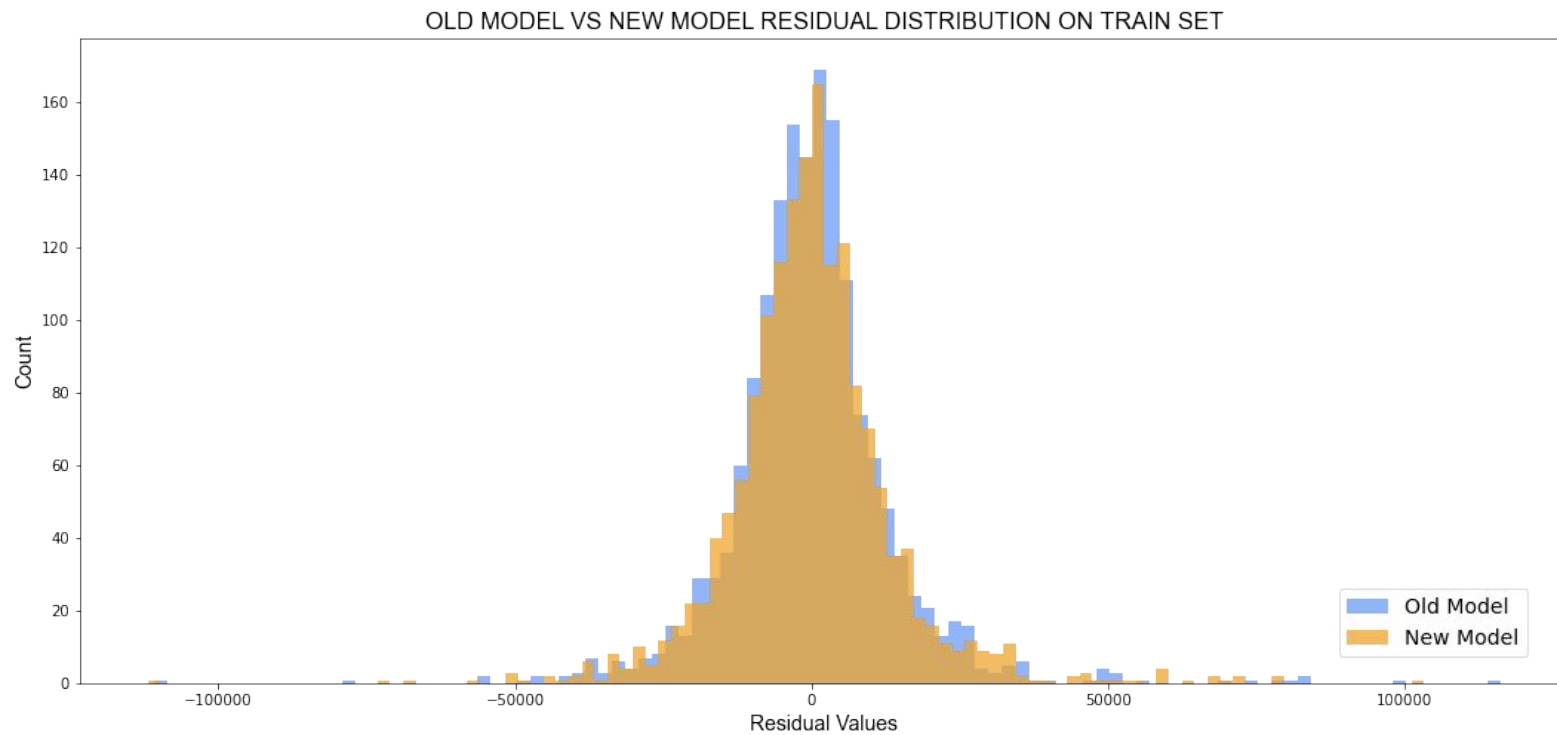OLD MODEL VS NEW MODEL PERFORMANCE ON TESTING SET (ACTUAL VS PREDICTED VALUES)

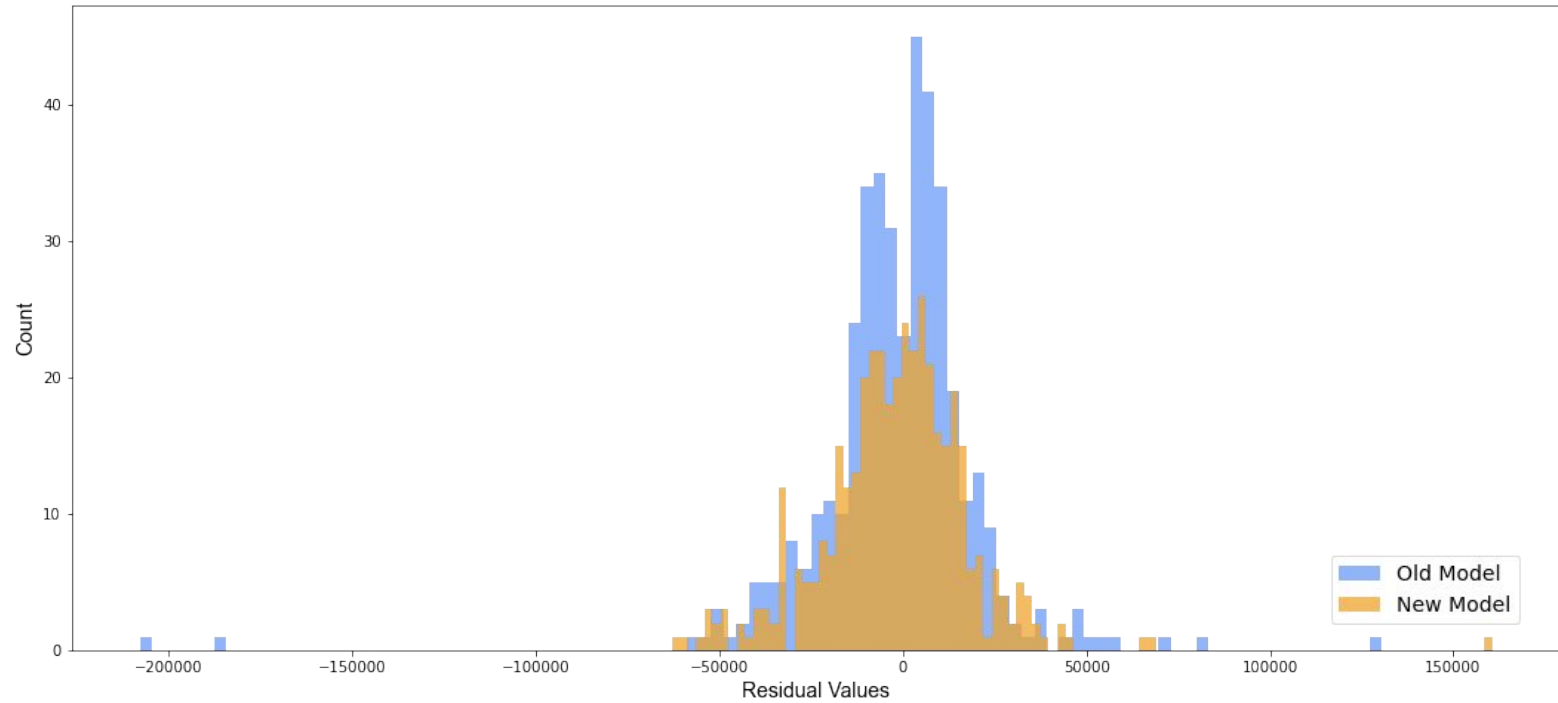OLD MODEL VS NEW MODEL PERFORMANCE ON TRAINING SET (RESIDUAL BY PREDICTED VALUES)

OLD MODEL VS NEW MODEL PERFORMANCE ON TEST SET (RESIDUAL BY PREDICTED VALUES)
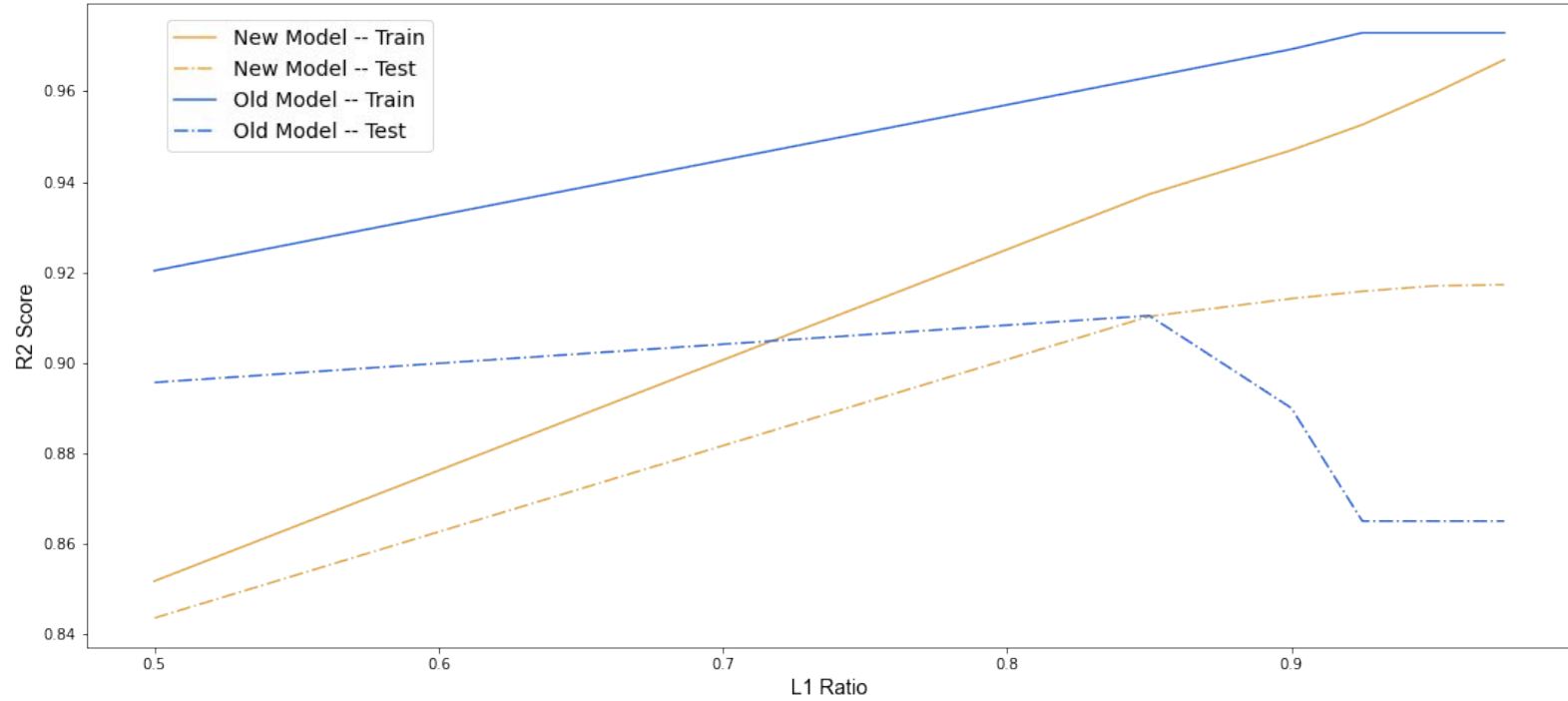
OLD MODEL VS NEW MODEL RESIDUAL DISTRIBUTION ON TRAIN SET

OLD MODEL VS NEW MODEL RESIDUAL DISTRIBUTION ON TEST SET

OLD MODEL VS NEW MODEL R-SQUARED SCORES ON TRAIN AND TEST SETS

RECOMMENDATION:

Zill-uh-ow can proceed confidently in lowering the number of questions on their surveys in attempts to improve survey response and completion rates.

Models with the lesser specified features perform just as well, even better, than a model with all features.

SOURCES:
1. Gomez, Joe. "8 critical factors that influence a home's value." Opendoor. March 27, 2019. https://www.opendoor.com/w/blog/factors-that-influence-home-value
2. Ayers, Carla. "8 Factors That Affect Home Value." ROCKET Homes. December 08, 2021. https://www.rockethomes.com/blog/home-buying/factors-that-influence-homes-value
3. Williams, Dima. "6 Features That Determine a Home's Final Sale Price." Money. February 6, 2021.https://money.com/how-to-price-a-home/

THANKS!