

Dear CEO and Realtors of PA Reality,

I'm pleased to share our final report on our project to forecast Pittsburgh house prices using predictive algorithms. Our goal was to evaluate the dataset, identify key variables impacting house prices, and develop a strong prediction model to understand housing market patterns in Pittsburgh.

After conducting thorough data analysis, we found that the Random Forest model had the lowest errors, including Mean Squared Error, Root Mean Squared Error, and Mean Absolute Error, compared to other models. This makes the Random Forest model the most accurate for predicting housing prices in Pittsburgh.

I also found data anomalies, including missing values, outliers in numeric variables, and consistency issues in categorical variables, were detected in the dataset. Outlier handling and log transformations were applied to address these issues, but further improvements may be needed to enhance the accuracy and reliability of the prediction model.

Additionally, weaknesses in the employed procedures were identified, including erroneous imputation of missing information and challenges in handling outliers. Inconsistencies were also found in categorical variables, requiring data cleaning. Further advancements in data cleaning and model validation are advised to enhance the predictive model's precision and accuracy.

Despite the data's current condition, the Random Forest model can accurately predict Pittsburgh home prices. However, the models' performance may be influenced by different circumstances

based on the available data. Therefore, more validation and development of the models are recommended for improved dependability and accuracy in projecting house values in Pittsburgh.

In conclusion, the Random Forest model was the most accurate in predicting Pittsburgh house prices. However, improvements in data cleaning and model validation are recommended. PA Reality can utilize the findings and recommendations from the report to gain insights into the Pittsburgh housing market and make informed pricing and sales decisions.

Thank you for reviewing the report. If you need more information, please feel free to ask.

Sincerely,

Stephen Skasko

Data Science Consultant

Predictive Housing Prices