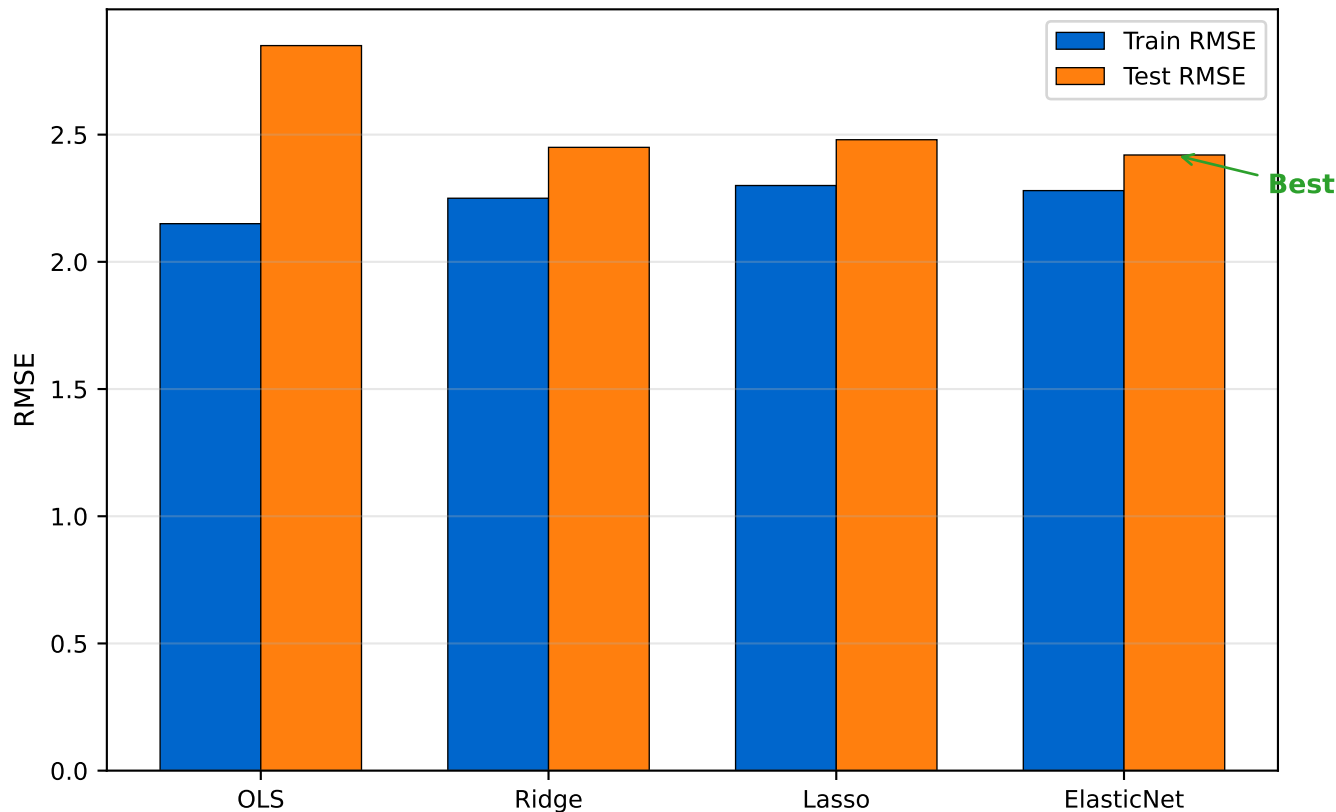
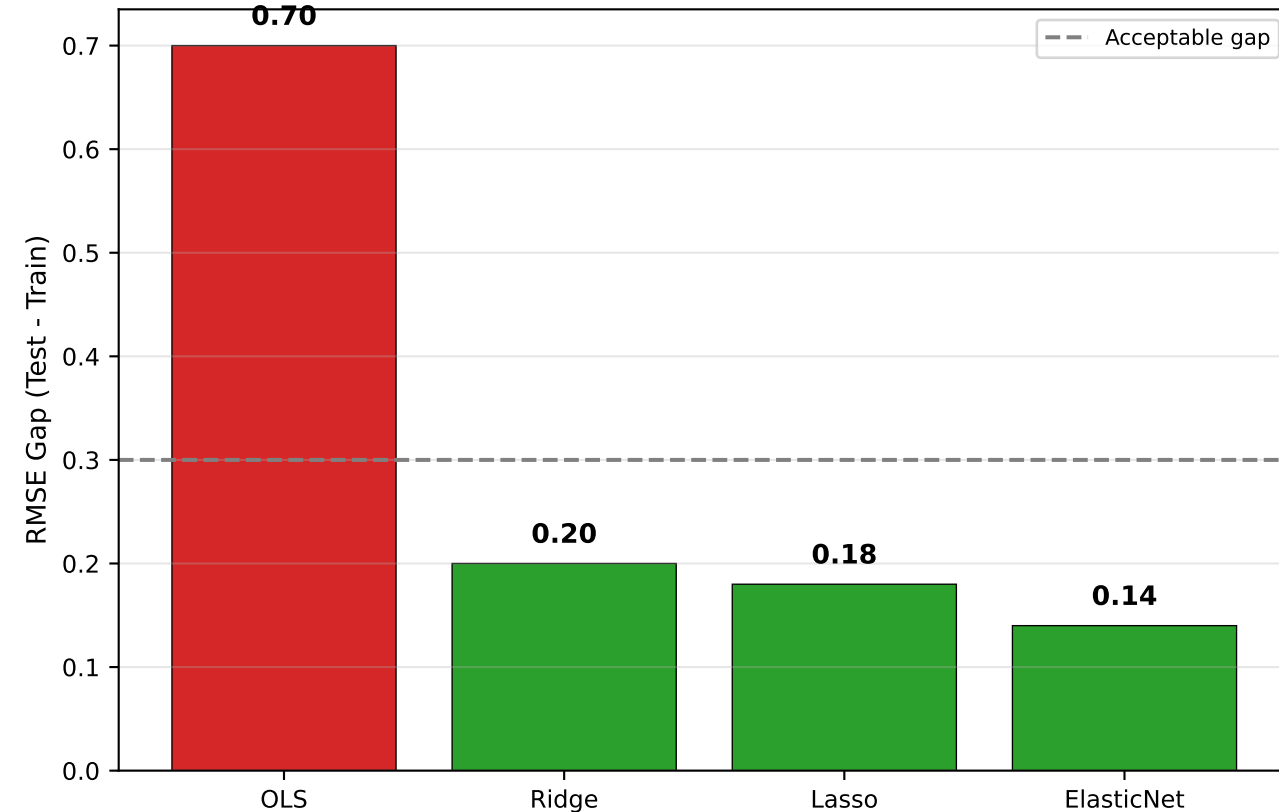


# Model Comparison: Choosing the Best Model

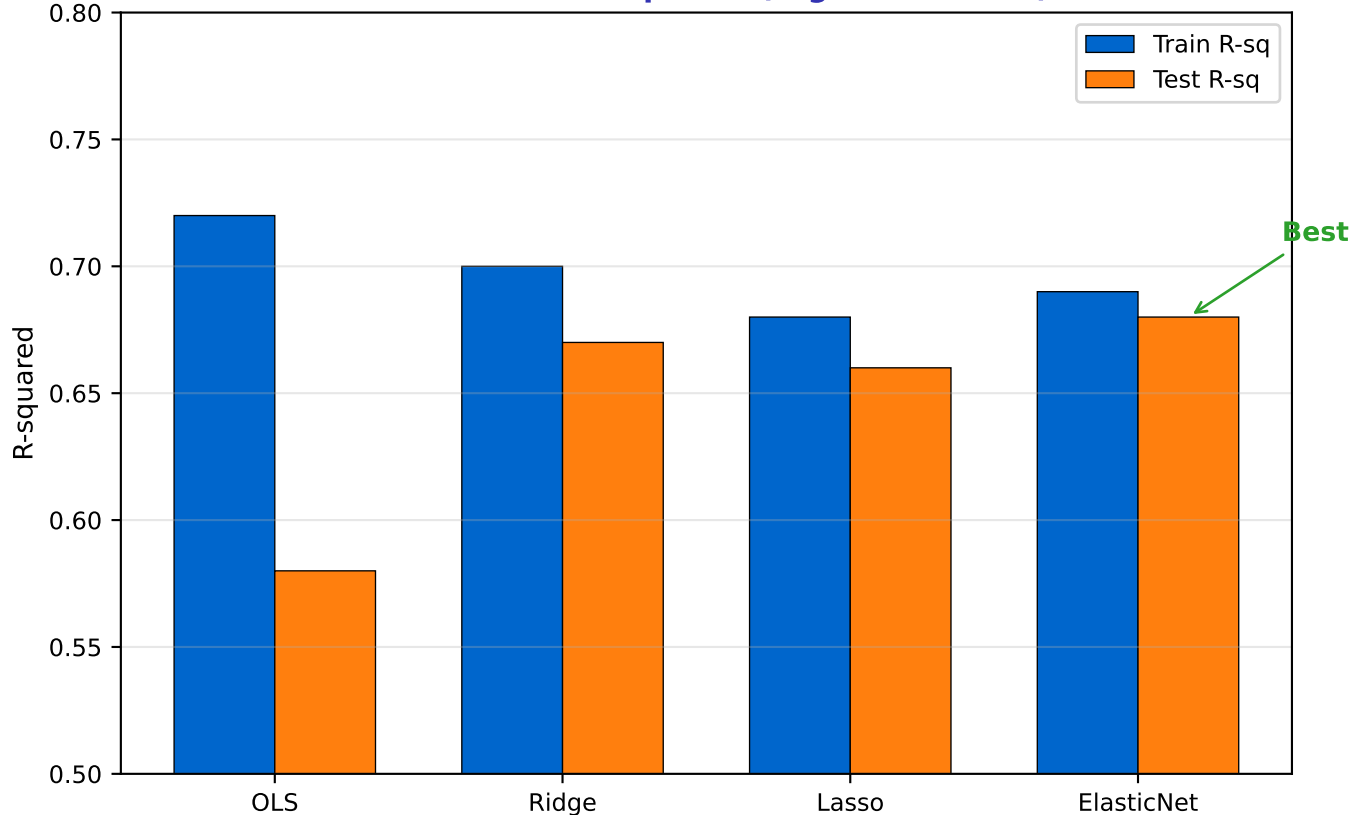
## Train vs Test RMSE (Lower is Better)



## Overfitting: Test-Train Gap



## Train vs Test R-squared (Higher is Better)



## Selection Summary

### MODEL COMPARISON SUMMARY

Model	Test RMSE	Test R-sq	Features	Verdict
OLS	2.85	0.58	10	Overfits
Ridge	2.45	0.67	10	Good
Lasso	2.48	0.66	6	Good (sparse)
ElasticNet	2.42	0.68	8	Best

### SELECTION CRITERIA:

- PRIMARY: Test set performance (not train!)
  - Lower RMSE / Higher R-sq on test data
- SECONDARY: Generalization gap
  - Small gap = model generalizes well
  - Large gap = overfitting
- TERTIARY: Interpretability
  - Fewer features = more interpretable
  - Lasso/ElasticNet for feature selection

### WINNER: ElasticNet

- Best test R-sq (0.68)
- Best test RMSE (2.42)
- Reasonable # features (8)