**Table 3: Comparison of Machine Learning Models and Scheduled Duration**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Metric** | **Comparison** | **t-statistic** | **p-value** | **Better Model** |
| MSE | Linear Regression | -5.60 | 4.18e-05 \*\* | Scheduled duration |
| Ridge Regression | -5.47 | 5.60e-05 \*\* | Scheduled duration |
| Lasso Regression | -5.55 | 4.69e-05 \*\* | Scheduled duration |
| Random Forest | -0.78 | 4.47e-01 | Equivalent |
| GBM | -0.83 | 4.15e-01 | Equivalent |
| XGBoost | -0.09 | 9.32e-01 | Equivalent |
| **Neural Network** | **0.32** | **7.56e-01** | **Equivalent** |
| RMSE (minutes) | Linear Regression | -5.69 | 2.82e-05 \*\* | Scheduled duration |
| Ridge Regression | -5.56 | 3.81e-05 \*\* | Scheduled duration |
| Lasso Regression | -5.64 | 3.17e-05 \*\* | Scheduled duration |
| Random Forest | -0.78 | 4.43e-01 | Equivalent |
| GBM | -0.83 | 4.15e-01 | Equivalent |
| XGBoost | -0.09 | 9.32e-01 | Equivalent |
| **Neural Network** | **0.32** | **7.56e-01** | **Equivalent** |
| MAE | Linear Regression | -2.96 | 8.87e-03 \*\* | Scheduled duration |
| Ridge Regression | -3.09 | 6.67e-03 \*\* | Scheduled duration |
| Lasso Regression | -2.88 | 1.04e-02 \* | Scheduled duration |
| Random Forest | 5.68 | 2.56e-05 \*\* | Random Forest |
| GBM | 4.19 | 7.42e-04 \*\* | GBM |
| XGBoost | 5.31 | 6.28e-05 \*\* | XGBoost |
| **Neural Network** | **7.01** | **1.81e-06 \*\*** | **Neural Network** |
| MAPE | Linear Regression | 7.52 | 7.79e-07 \*\* | Linear Regression |
| Ridge Regression | 7.16 | 1.35e-06 \*\* | Ridge Regression |
| Lasso Regression | 7.68 | 6.23e-07 \*\* | Lasso Regression |
| Random Forest | 20.34 | 3.84e-12 \*\* | Random Forest |
| GBM | 14.69 | 1.92e-11 \*\* | GBM |
| XGBoost | 18.70 | 4.79e-12 \*\* | XGBoost |
| **Neural Network** | **20.95** | **3.53e-13 \*\*** | **Neural Network** |
| R2 | Linear Regression | 5.49 | 4.35e-05 \*\* | Scheduled Duration |
| Ridge Regression | 5.43 | 4.91e-05 \*\* | Scheduled Duration |
| Lasso Regression | 5.48 | 4.55e-05 \*\* | Scheduled Duration |
| Random Forest | 0.55 | 5.88e-01 | Equivalent |
| GBM | 0.66 | 5.19e-01 | Equivalent |
| XGBoost | -0.03 | 9.78e-01 | Equivalent |
| **Neural Network** | **-0.42** | **6.81e-01** | **Equivalent** |

Abbreviations: GBM, MSE, mean squared error; RMSE, root mean squared error; MAE, mean absolute error; MAPE, mean absolute percentage error; *R*2, coefficient of determination.