My title*

My subtitle if needed

First author   Another author

April 3, 2024

First sentence. Second sentence. Third sentence. Fourth sentence.

1 Data

2 Model

The goal of our modelling strategy is twofold. Firstly,…

Here we briefly describe the Bayesian analysis model used to investigate… Background details and diagnostics are included in **?@sec-model-details**.

2.1 Model set-up

$$y_i | \mu_i, \sigma \sim \text{Normal}(\mu_i, \sigma) \tag{1}$$

$$\mu_i = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \beta_3 x_{3i} + \beta_4 x_{4i} + \beta_5 x_{5i} \tag{2}$$

where y_i refers to the total expected points added on pass attempts and sacks; μ_i is the mean of the normal distribution for observation i, which is the predicted passing EPA; σ is the standard deviation of the normal distribution across all quarterbacks' EPA. x_{1i} to x_{5i} correspond to the predictors for observation i, which in the context of the model would be `passing_yards`, `sacks`, `interceptions`, `passing_tds`, and `attempts`; β_1 to β_5 are the coefficients for the predictor variables.

---

*Code and data are available at: LINK.

Table 1: Explanatory Model of NFL Quarterback Passing EPA

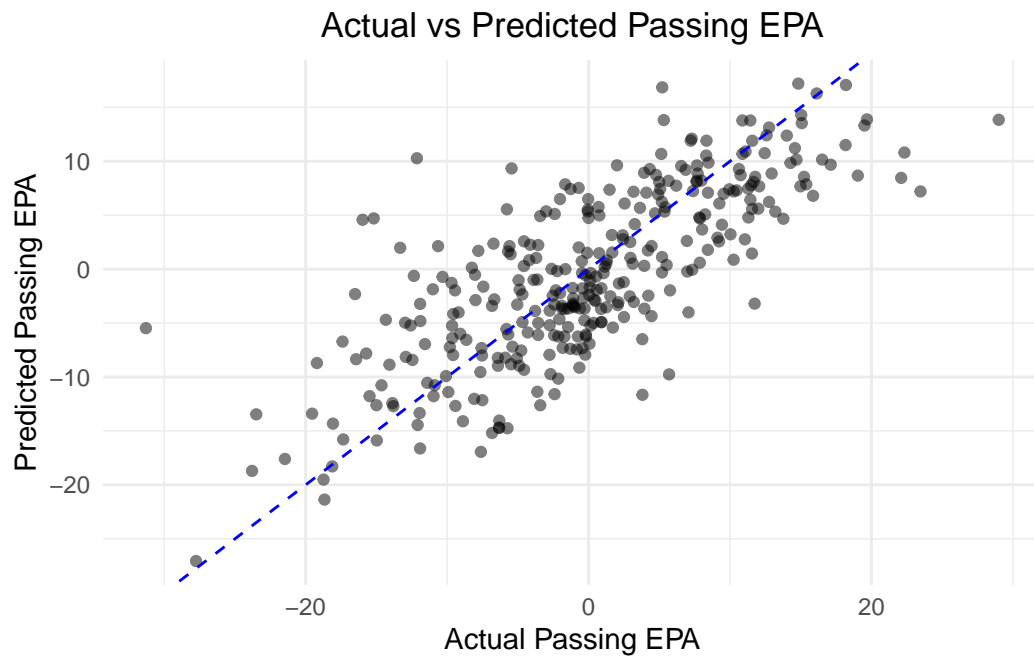|	model_1	model_2
(Intercept)	−3.648	−0.749
	(0.788)	(1.016)
passing_yards	0.063	
	(0.003)	
sacks	−2.600	−2.336
	(0.179)	(0.227)
interceptions	−5.360	
	(0.399)	
passing_tds		5.518
		(0.412)
attempts		−0.025
		(0.037)
Num.Obs.	318	318
R2	0.692	0.535
R2 Adj.	0.689	0.531
AIC	2021.4	2152.4
BIC	2040.3	2171.2
RMSE	5.72	7.03

2.1.1 Model justification

We expect a positive relationship between the size of the wings and time spent aloft. In particular...

We can use maths by including latex between dollar signs, for instance θ.

3 Result

```
predicted_results |>
  ggplot(aes(x = passing_epa, y = predicted_passing_epa)) +
  geom_point(alpha = 0.5) +
  geom_abline(intercept = 0, slope = 1, linetype = "dashed", color = "blue") +
  labs(
    title = "Actual vs Predicted Passing EPA",
    x = "Actual Passing EPA",
    y = "Predicted Passing EPA"
  ) +
  theme_minimal() +
  theme(
    plot.title = element_text(hjust = 0.5)
  )
```

Actual vs Predicted Passing EPA

4 Discussion

xxx

5 References