Normality assumption for log number of review variable:

The Log number of reviews predictor presents some deviations from the normality assumption. The QQ plot displays an outlier downline, indicating a departure from the expected normal distribution pattern. Similarly, the histogram demonstrates slight skewness to the right, while the boxplot identifies some outliers on the right side. Moreover, the Shapiro-Wilk test yielded a significant p-value of 1.58e-9, leading to the rejection of the null hypothesis (Ho). This rejection suggests a violation of the normality assumption for this predictor. Therefore, caution is advised when interpreting regression results involving the Log number of reviews predictor, as its associated errors deviate noticeably from a normal distribution pattern.

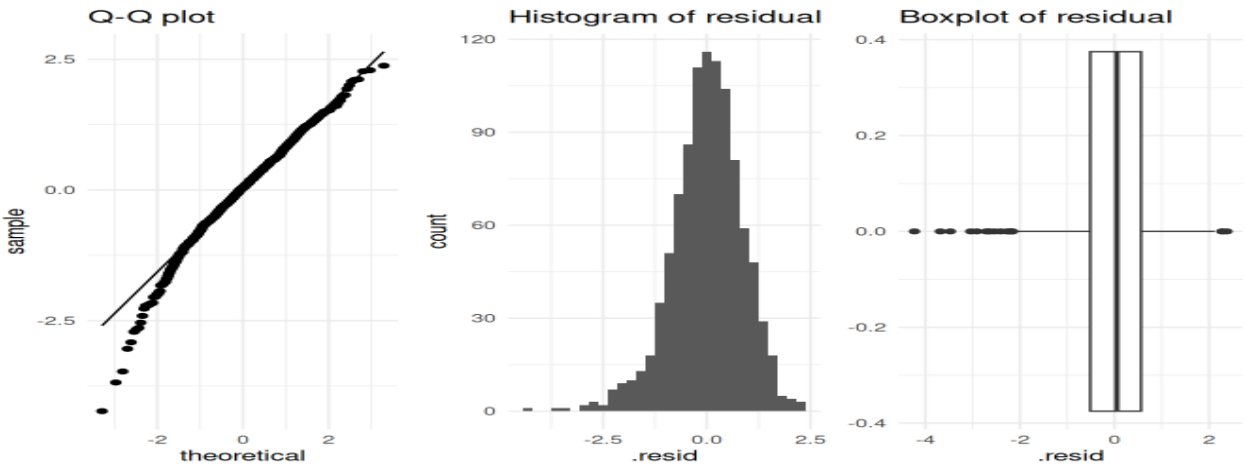
```{r}
# QQ-plot for this model
p3 <- ggplot(data = love_lm3_aug, aes(sample = .resid)) +
      geom_qq_line() +
      geom_qq() +
      theme_minimal() +
      ggtitle("Q-Q plot")

# Create a histogram of the residuals
p4 <- ggplot(data = love_lm3_aug, aes(x = .resid)) +
      geom_histogram() + theme_minimal() +
      ggtitle("Histogram of residual")

# Create a boxplot of the residuals
p5 <- ggplot(data = love_lm3_aug, aes(x = .resid)) +
      geom_boxplot() + theme_minimal() +
      ggtitle("Boxplot of residual")

plot_grid(p3, p4, p5, nrow = 1)
```

QQ plot, histogram and boxplot for log number of reviews



Shapiro-Wilks test:

Ho: errors are normally distributed

H_A: errors are NOT normally distributed

```{r}
shapiro.test(love_lm3$residuals)
```

```
	Shapiro-Wilk normality test

data:  love_lm3$residuals
W = 0.98266, p-value = 1.58e-09
```

Because the p-value is < 0.05, reject Ho and conclude the errors are not normally distributed.