Appendix H

Result of logarithmic transformation of Value Price variable

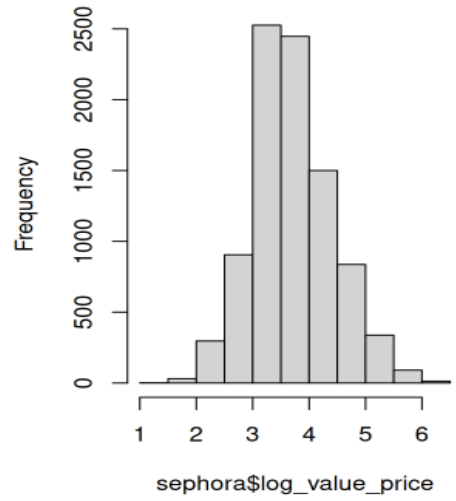
The logarithmic transformation applied to the "value price" variable resulted in a distribution that approached normality, as evidenced by the histogram, density plot, and QQ plot. This transformation effectively reduced the skewness observed in the original data, leading to a more symmetrical distribution. The QQ plot indicates a close fit to a normal distribution, with only minor outliers. Similarly, the box plot shows a balanced distribution of data points, with relatively few outliers compared to the original data. Overall, the transformation helped mitigate the skewness and improved the distributional properties of the variable.

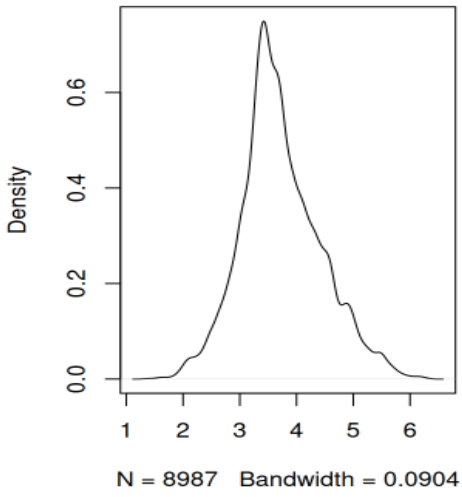
```{r}
# transforming the variable to log sephora$log_value_price <-
log(sephora$value_price + 2)

# Skewness and kurtosis
skewness(sephora$log_value_price)
kurtosis(sephora$log_value_price)
```

Skewness: 0.388 **Kurtosis:** 3.284

```{r}
# Set up the plotting layout
par(mfrow = c(1, 2))
# Plot histogram and density
hist(sephora$log_value_price)
plot(density(sephora$log_value_price))
```

Histogram and density for value log value_price variable






```{r}
# QQ plot and boxplot
qqnorm(sephora$log_value_price, main = "QQ Plot for log_value_price varible")
qqline(sephora$log_value_price)


boxplot(sephora$log_value_price, horizontal = TRUE)
```

QQ and box plots for log value_price variable