Descriptive Statistics

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Contents

1 Data Loading

```
# Load the cleaned per-trial dataset
data <- read.csv("/Users/Patron/Desktop/project/data/data_merged.csv")
```

---

2 Descriptive Statistics

2.1 Participant Demographics

```
# Age
summary(data$age)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   18.00   22.25   24.00   27.27   26.75   51.00
```

```r
sd(data$age, na.rm = TRUE)
```

```
## [1] 8.820692
```

```r
# Gender
table(data$gender_encoded)
```

```
##
##  0  1
## 15 11
```

```r
prop.table(table(data$gender_encoded)) * 100
```

```
##
##        0        1
## 57.69231 42.30769
```

```r
# Prior AI Experience
summary(data$prior_ai_experience)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   2.000   4.000   4.000   4.154   5.000   5.000
```

```r
sd(data$prior_ai_experience, na.rm = TRUE)
```

```
## [1] 0.9671528
```

```r
# Medical Background
table(data$medical_background_flag)
```

```
##
##  0  1
## 21  5
```

```r
prop.table(table(data$medical_background_flag)) * 100
```

```
##
##        0        1
## 80.76923 19.23077
```

2.2 Bias Awareness

```r
# Bias Awareness Scores
summary(data %>% select(anchoring_bias, automation_bias, confirmation_bias))
```

```
##  anchoring_bias  automation_bias confirmation_bias
##  Min.   :1.000   Min.   :1.000   Min.   :1.000
##  1st Qu.:2.000   1st Qu.:2.000   1st Qu.:2.000
##  Median :2.000   Median :2.000   Median :2.500
##  Mean   :2.538   Mean   :2.423   Mean   :2.462
##  3rd Qu.:3.000   3rd Qu.:3.000   3rd Qu.:3.000
##  Max.   :5.000   Max.   :4.000   Max.   :4.000
```

```
data %>% select(anchoring_bias, automation_bias, confirmation_bias) %>% summarise_all(sd, na.rm = TRUE)
```

```
##   anchoring_bias automation_bias confirmation_bias
## 1       1.139501        1.064822         0.9891721
```

2.3 Task Behavior Variables

```
# Input Type
table(data$input_type_encoded)
```

```
##
##  0  1
## 18  8
```

```
prop.table(table(data$input_type_encoded)) * 100
```

```
##
##        0        1
## 69.23077 30.76923
```

```
# Model Order
table(data$model_order_encoded)
```

```
##
##  0  1
## 15 11
```

```
prop.table(table(data$model_order_encoded)) * 100
```

```
##
##        0        1
## 57.69231 42.30769
```

```
# Diagnosis Type (Consistent vs Conflicting)
table(data$diagnosis_type_encoded)
```

```
##
##  0  1
## 11 15
```

```r
prop.table(table(data$diagnosis_type_encoded)) * 100
```

```
##
##        0        1
## 42.30769 57.69231
```

```r
# Model Preference
table(data$preferred_model_encoded)
```

```
##
##  0  1
## 13 13
```

```r
prop.table(table(data$preferred_model_encoded)) * 100
```

```
##
##  0  1
## 50 50
```

2.4 Trust Ratings

```r
# Trust Ratings
summary(data %>% select(trust_rating_A, trust_rating_B))
```

```
##  trust_rating_A  trust_rating_B
##  Min.   :3.000   Min.   :1.000
##  1st Qu.:3.000   1st Qu.:3.000
##  Median :4.000   Median :4.000
##  Mean   :3.885   Mean   :3.731
##  3rd Qu.:4.000   3rd Qu.:4.000
##  Max.   :5.000   Max.   :5.000
```

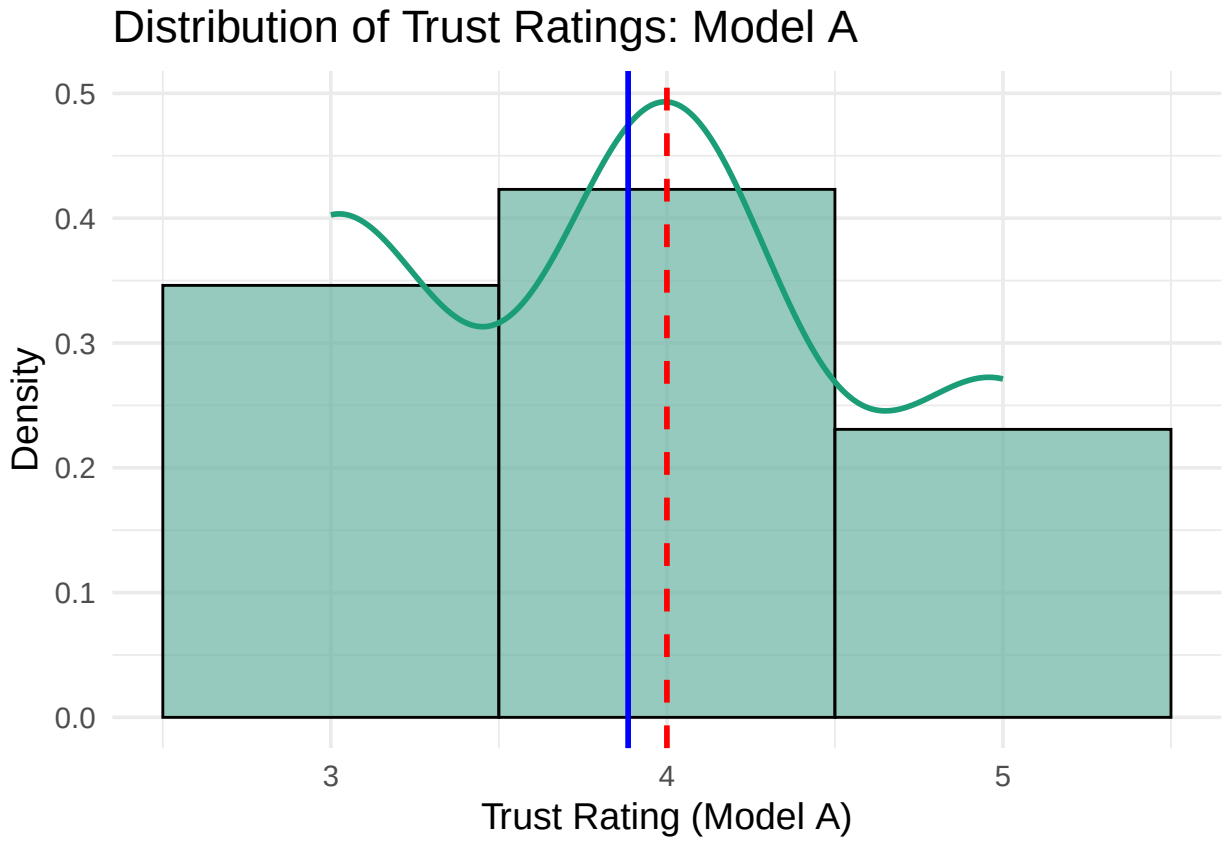
```r
data %>% select(trust_rating_A, trust_rating_B) %>% summarise_all(sd, na.rm = TRUE)
```

```
##   trust_rating_A trust_rating_B
## 1      0.7656068       1.041449
```

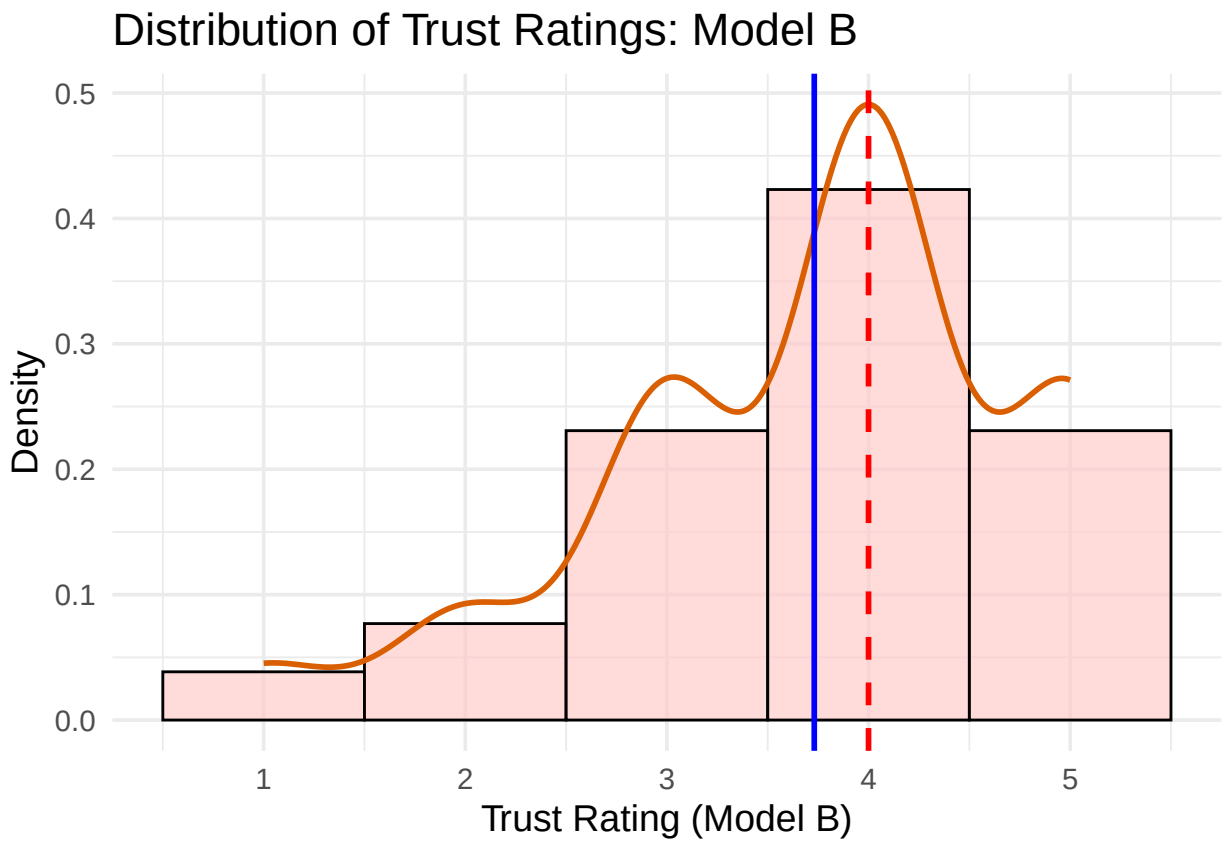
```r
# Plot Trust Rating A
ggplot(data, aes(x = trust_rating_A)) +
  geom_histogram(aes(y = ..density..), binwidth = 1, fill = "#69b3a2", color = "black", alpha = 0.7) +
  geom_density(color = "#1b9e77", size = 1) +
  geom_vline(aes(xintercept = mean(trust_rating_A, na.rm = TRUE)),
             color = "blue", linetype = "solid", size = 1) +
  geom_vline(aes(xintercept = median(trust_rating_A, na.rm = TRUE)),
             color = "red", linetype = "dashed", size = 1) +
  labs(title = "Distribution of Trust Ratings: Model A",
       x = "Trust Rating (Model A)",
       y = "Density") +
  theme_minimal(base_size = 14)
```

```
## Warning: Using ‘size‘ aesthetic for lines was deprecated in ggplot2 3.4.0.
## i Please use ‘linewidth‘ instead.
## This warning is displayed once every 8 hours.
## Call ‘lifecycle::last_lifecycle_warnings()‘ to see where this warning was generated.

## Warning: The dot-dot notation (‘..density..‘) was deprecated in ggplot2 3.4.0.
## i Please use ‘after_stat(density)‘ instead.
## This warning is displayed once every 8 hours.
## Call ‘lifecycle::last_lifecycle_warnings()‘ to see where this warning was generated.
```




```r
# Plot Trust Rating B
ggplot(data, aes(x = trust_rating_B)) +
  geom_histogram(aes(y = ..density..), binwidth = 1, fill = "#ffcccb", color = "black", alpha = 0.7) +
  geom_density(color = "#d95f02", size = 1) +
  geom_vline(aes(xintercept = mean(trust_rating_B, na.rm = TRUE)),
             color = "blue", linetype = "solid", size = 1) +
  geom_vline(aes(xintercept = median(trust_rating_B, na.rm = TRUE)),
             color = "red", linetype = "dashed", size = 1) +
  labs(title = "Distribution of Trust Ratings: Model B",
       x = "Trust Rating (Model B)",
       y = "Density") +
  theme_minimal(base_size = 14)
```



2.5 Confidence Ratings

```
# Confidence Ratings
summary(data %>% select(first_response_confidence_rating, final_confidence_rating))
```

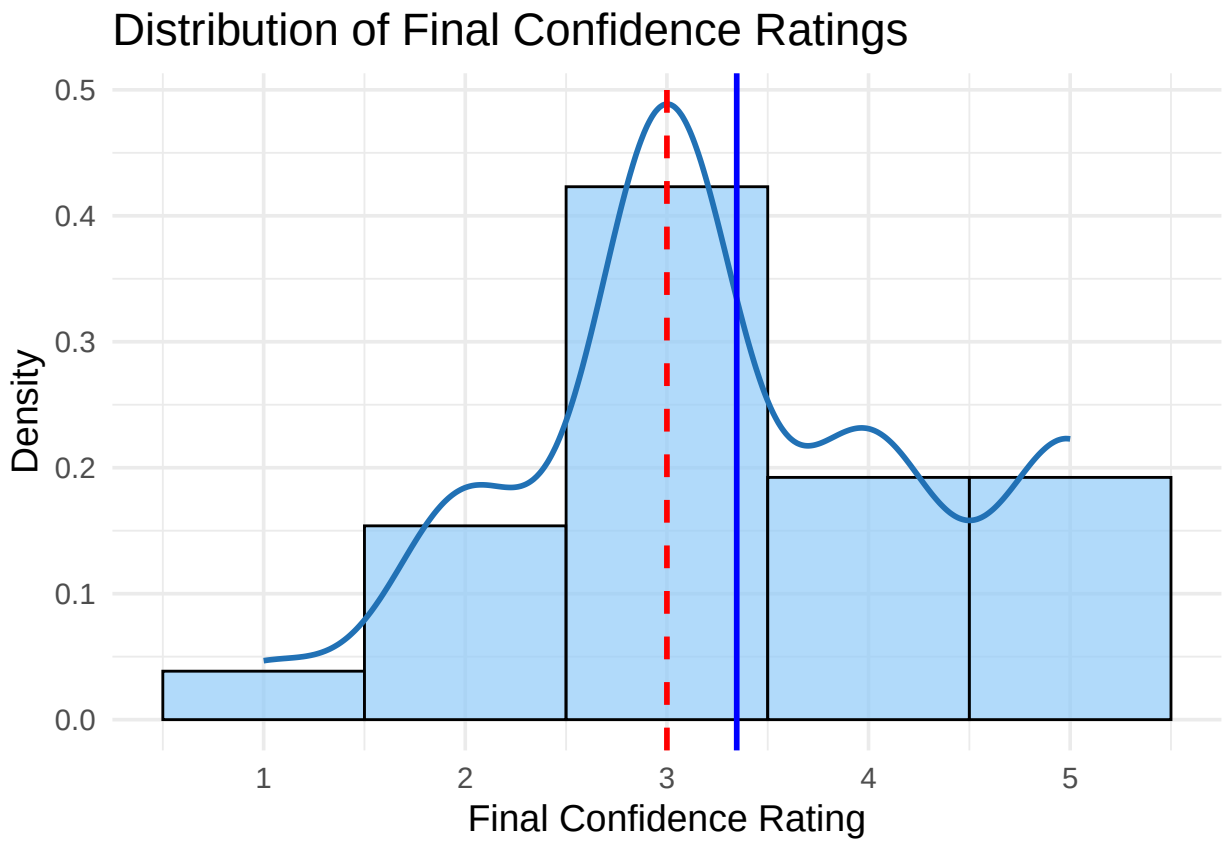
```
##  first_response_confidence_rating final_confidence_rating
##  Min.   :2.000                    Min.   :1.000
##  1st Qu.:3.000                    1st Qu.:3.000
##  Median :4.000                    Median :3.000
##  Mean   :3.731                    Mean   :3.346
##  3rd Qu.:4.000                    3rd Qu.:4.000
##  Max.   :5.000                    Max.   :5.000
```

```
data %>% select(first_response_confidence_rating, final_confidence_rating) %>% summarise_all(sd, na.rm =
```

```
##   first_response_confidence_rating final_confidence_rating
## 1                        0.8274149                1.093336
```

```
ggplot(data, aes(x = final_confidence_rating)) +
  geom_histogram(aes(y = ..density..), binwidth = 1, fill = "#90caf9", color = "black", alpha = 0.7) +
  geom_density(color = "#2171b5", size = 1) +
  geom_vline(aes(xintercept = mean(final_confidence_rating, na.rm = TRUE)),
```

```
            color = "blue", linetype = "solid", size = 1) +
  geom_vline(aes(xintercept = median(final_confidence_rating, na.rm = TRUE)),
            color = "red", linetype = "dashed", size = 1) +
  labs(title = "Distribution of Final Confidence Ratings",
       x = "Final Confidence Rating",
       y = "Density") +
  theme_minimal(base_size = 14)
```



2.6 AI System Confidence (Displayed by Model)

```
# System Confidence Shown
summary(data %>% select(shown_confidence_A_numeric, shown_confidence_B_numeric))
```

```
##  shown_confidence_A_numeric shown_confidence_B_numeric
##  Min.   :0.000              Min.   :0.000
##  1st Qu.:0.000              1st Qu.:0.000
##  Median :2.500              Median :1.500
##  Mean   :2.038              Mean   :1.731
##  3rd Qu.:3.750              3rd Qu.:3.000
##  Max.   :5.000              Max.   :5.000
```

```r
data %>% select(shown_confidence_A_numeric, shown_confidence_B_numeric) %>% summarise_all(sd, na.rm = TR
```

```
##   shown_confidence_A_numeric shown_confidence_B_numeric
## 1                   2.068444                    1.84516
```

2.7 Final Decision Rating

```r
# Response Rating
summary(data$response_rating)
```

```
## Length  Class   Mode
##      0   NULL   NULL
```

```r
sd(data$response_rating, na.rm = TRUE)
```

```
## [1] NA
```