

AI Data Analysis

Darian Othman

```
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ----- tidyverse 2.0.0 --
## v dplyr      1.1.3      v readr      2.1.4
## v forcats    1.0.0      v stringr   1.5.0
## v ggplot2    3.4.3      v tibble    3.2.1
## v lubridate  1.9.2      v tidyr     1.3.0
## v purrr      1.0.2
## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()     masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
library(readr)
library(ggplot2)
```

```
wd<-c("C:/Users/I6240624/Documents/BISS/Master Thesis/Code/DarianOthmanMasterThesis/Notebooks")
setwd(wd)
```

```
dfinsen <- read.csv("C:/Users/I6240624/Documents/BISS/Master Thesis/Data/dfinsenchar.csv")
dftten <- read.csv("C:/Users/I6240624/Documents/BISS/Master Thesis/Data/dfttenchar.csv")
dfyten <- read.csv("C:/Users/I6240624/Documents/BISS/Master Thesis/Data/dfytenchar.csv")

insen <- read.csv("C:/Users/I6240624/Documents/BISS/Master Thesis/Data/insenchar_cat7p1.csv")
tten <- read.csv("C:/Users/I6240624/Documents/BISS/Master Thesis/Data/ttenchar_cat7p1.csv")
yten <- read.csv("C:/Users/I6240624/Documents/BISS/Master Thesis/Data/ytenchar_cat7p1.csv")
```

```
combined_data_real <- bind_rows(
  # Instagram
  bind_rows(
    dfinsen %>% mutate(language = "EN")
  ) %>%
  mutate(platform = "Instagram"),

  # YouTube
  bind_rows(
    dfyten %>% mutate(language = "EN")
  ) %>%
  mutate(platform = "YouTube"),

  # TikTok
  bind_rows(
```

```

    dftten %>% mutate(language = "EN")
  ) %>%
    mutate(platform = "TikTok")
)
# Set the order of factor levels for the facet
combined_data_real$platform <- factor(
  combined_data_real$platform,
  levels = c("Instagram", "YouTube", "TikTok")
)

```

```

combined_data_ai <- bind_rows(
  # Instagram
  bind_rows(
    insen %>% mutate(language = "EN")
  ) %>%
    mutate(platform = "Instagram"),

  # YouTube
  bind_rows(
    yten %>% mutate(language = "EN")
  ) %>%
    mutate(platform = "YouTube"),

  # TikTok
  bind_rows(
    tten %>% mutate(language = "EN")
  ) %>%
    mutate(platform = "TikTok")
)
# Set the order of factor levels for the facet
combined_data_ai$platform <- factor(
  combined_data_ai$platform,
  levels = c("Instagram", "YouTube", "TikTok")
)

```

```

combined_data_real <- combined_data_real %>%
  mutate(source = "real")

combined_data_ai <- combined_data_ai %>%
  mutate(source = "ai")

# Bind the two datasets together
final_combined <- bind_rows(combined_data_real, combined_data_ai)

```

```

average_mention_real <- combined_data_real%>%group_by(platform)%>%
  mutate(mentions_length = lengths(mentions_count)) %>%
  summarize(average_length = mean(mentions_count, na.rm = TRUE))

average_mention_ai <- combined_data_ai%>%group_by(platform)%>%
  mutate(mentions_length = lengths(mentions_count)) %>%
  summarize(average_length = mean(mentions_count, na.rm = TRUE))

average_hashtags_real <- combined_data_real%>%group_by(platform)%>%

```

```

mutate(hashtags_length = lengths(hashtags_count)) %>%
summarize(average_length = mean(hashtags_count, na.rm = TRUE))

average_hashtags_ai <- combined_data_ai%>%group_by(platform)%>%
mutate(hashtags_length = lengths(hashtags_count)) %>%
summarize(average_length = mean(hashtags_count, na.rm = TRUE))

average_urls_real <- combined_data_real%>%group_by(platform)%>%
mutate(urls_length = lengths(urls_count)) %>%
summarize(average_length = mean(urls_count, na.rm = TRUE))

average_urls_ai <- combined_data_ai%>%group_by(platform)%>%
mutate(urls_length = lengths(urls_count)) %>%
summarize(average_length = mean(urls_count, na.rm = TRUE))

average_emojis_real <- combined_data_real%>%group_by(platform)%>%
mutate(emojis_length = lengths(emojis_count)) %>%
summarize(average_length = mean(emojis_count, na.rm = TRUE))

average_emojis_ai <- combined_data_ai%>%group_by(platform)%>%
mutate(emojis_length = lengths(emojis_count)) %>%
summarize(average_length = mean(emojis_count, na.rm = TRUE))

average_caption_real <- combined_data_real%>%group_by(platform)%>%
summarize(average_length = mean(caption_length, na.rm = TRUE))

average_caption_ai <- combined_data_ai%>%group_by(platform)%>%
summarize(average_length = mean(caption_length, na.rm = TRUE))

a <- bind_rows(bind_rows(
mutate(average_mention_real, data_type = "Real"),
mutate(average_mention_ai, data_type = "AI"))%>%
mutate(char = "mention"),
bind_rows(
mutate(average_hashtags_real, data_type = "Real"),
mutate(average_hashtags_ai, data_type = "AI"))%>%
mutate(char = "hashtags"),
bind_rows(
mutate(average_urls_real, data_type = "Real"),
mutate(average_urls_ai, data_type = "AI"))%>%
mutate(char = "urls"),
bind_rows(
mutate(average_emojis_real, data_type = "Real"),
mutate(average_emojis_ai, data_type = "AI"))%>%
mutate(char = "emojis"),
bind_rows(
mutate(average_caption_real, data_type = "Real"),
mutate(average_caption_ai, data_type = "AI"))%>%
mutate(char = "caption")
)

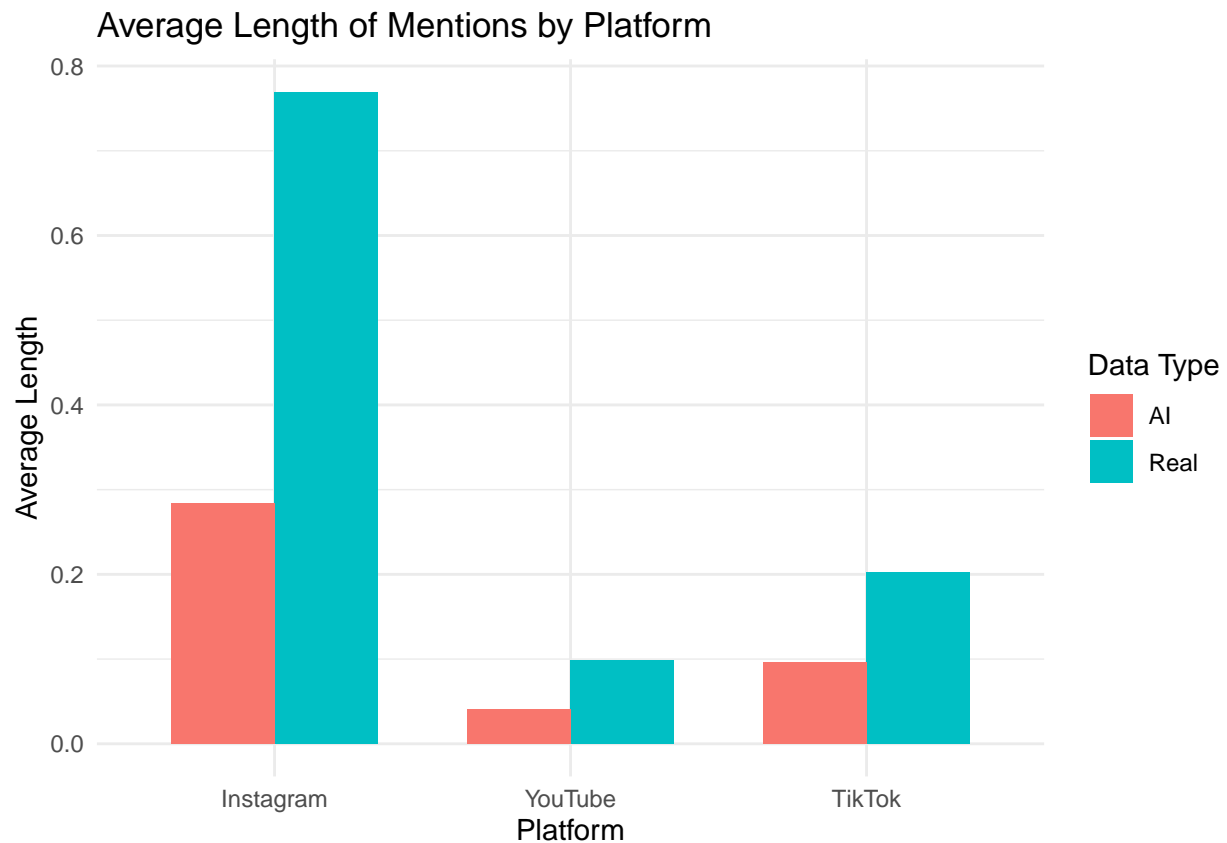
```

```

filtered_data <- subset(a, char == "mention")

# Plot the filtered data
ggplot(filtered_data, aes(x = platform, y = average_length, fill = data_type)) +
  geom_bar(stat = "identity", position = "dodge", width = 0.7) +
  labs(
    title = "Average Length of Mentions by Platform",
    x = "Platform",
    y = "Average Length",
    fill = "Data Type"
  ) +
  theme_minimal()

```

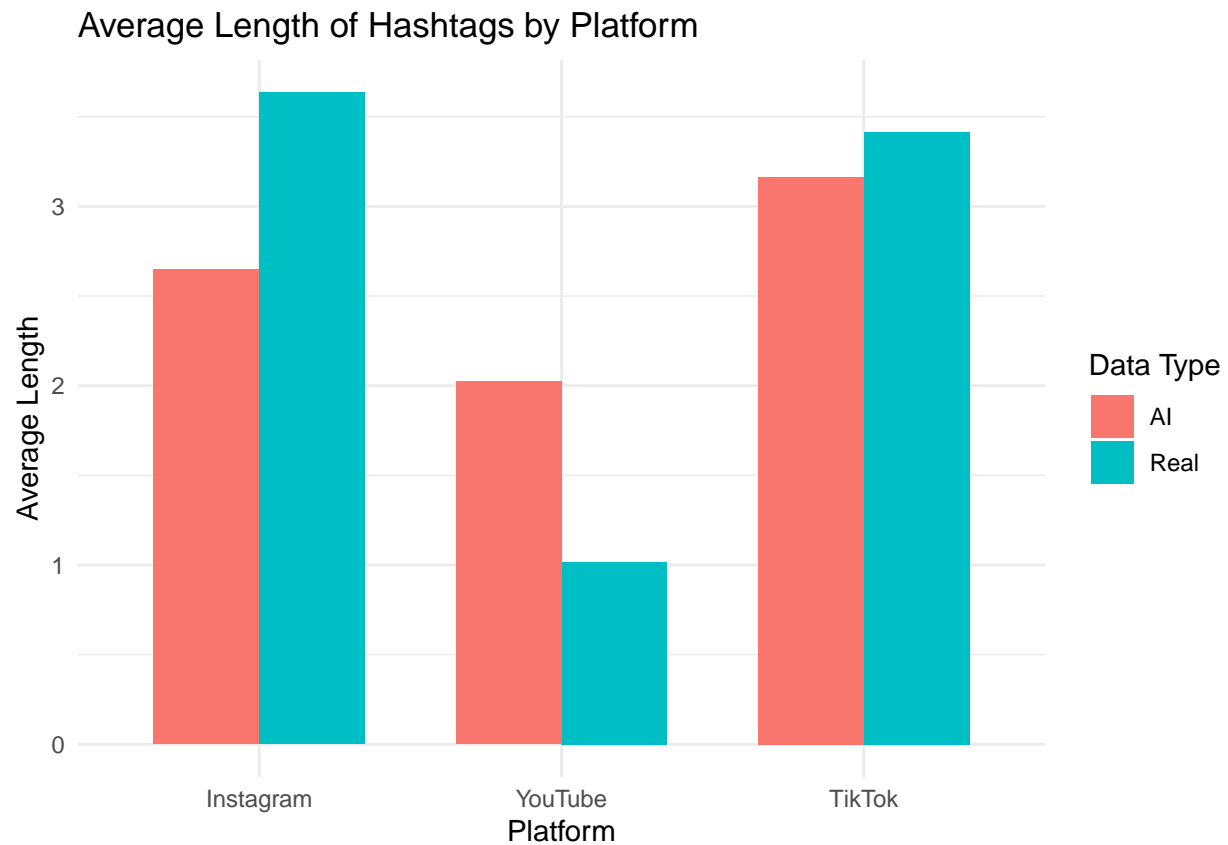


```

filtered_data <- subset(a, char == "hashtags")

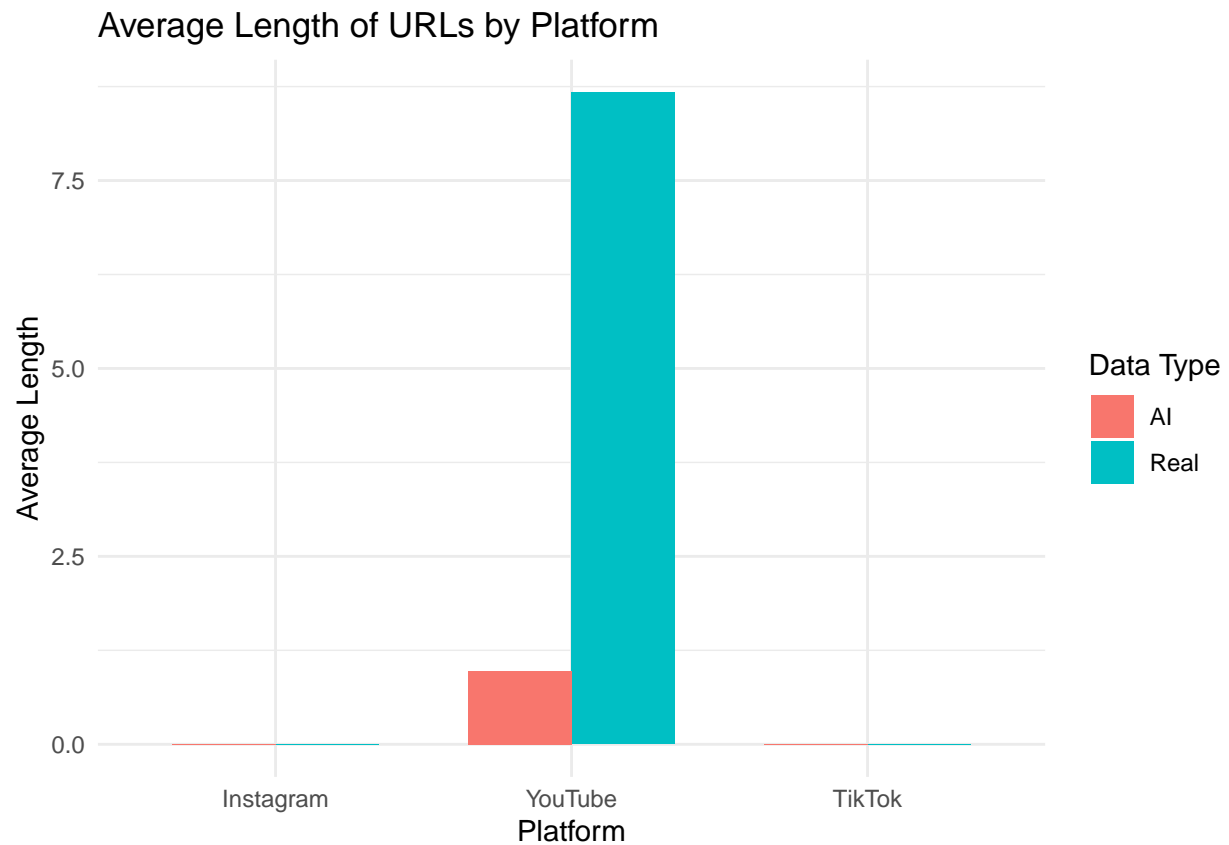
# Plot the filtered data
ggplot(filtered_data, aes(x = platform, y = average_length, fill = data_type)) +
  geom_bar(stat = "identity", position = "dodge", width = 0.7) +
  labs(
    title = "Average Length of Hashtags by Platform",
    x = "Platform",
    y = "Average Length",
    fill = "Data Type"
  ) +
  theme_minimal()

```

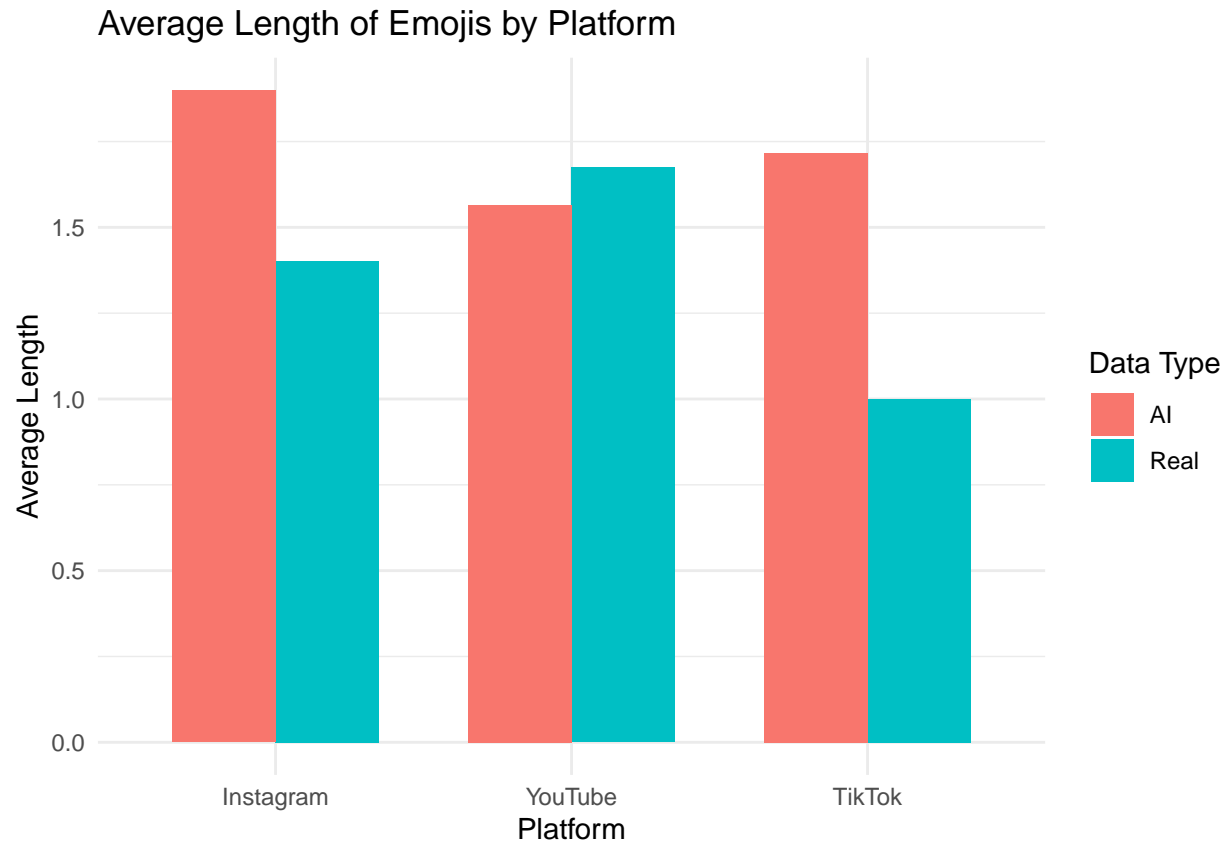


```
filtered_data <- subset(a, char == "urls")

# Plot the filtered data
ggplot(filtered_data, aes(x = platform, y = average_length, fill = data_type)) +
  geom_bar(stat = "identity", position = "dodge", width = 0.7) +
  labs(
    title = "Average Length of URLs by Platform",
    x = "Platform",
    y = "Average Length",
    fill = "Data Type"
  ) +
  theme_minimal()
```

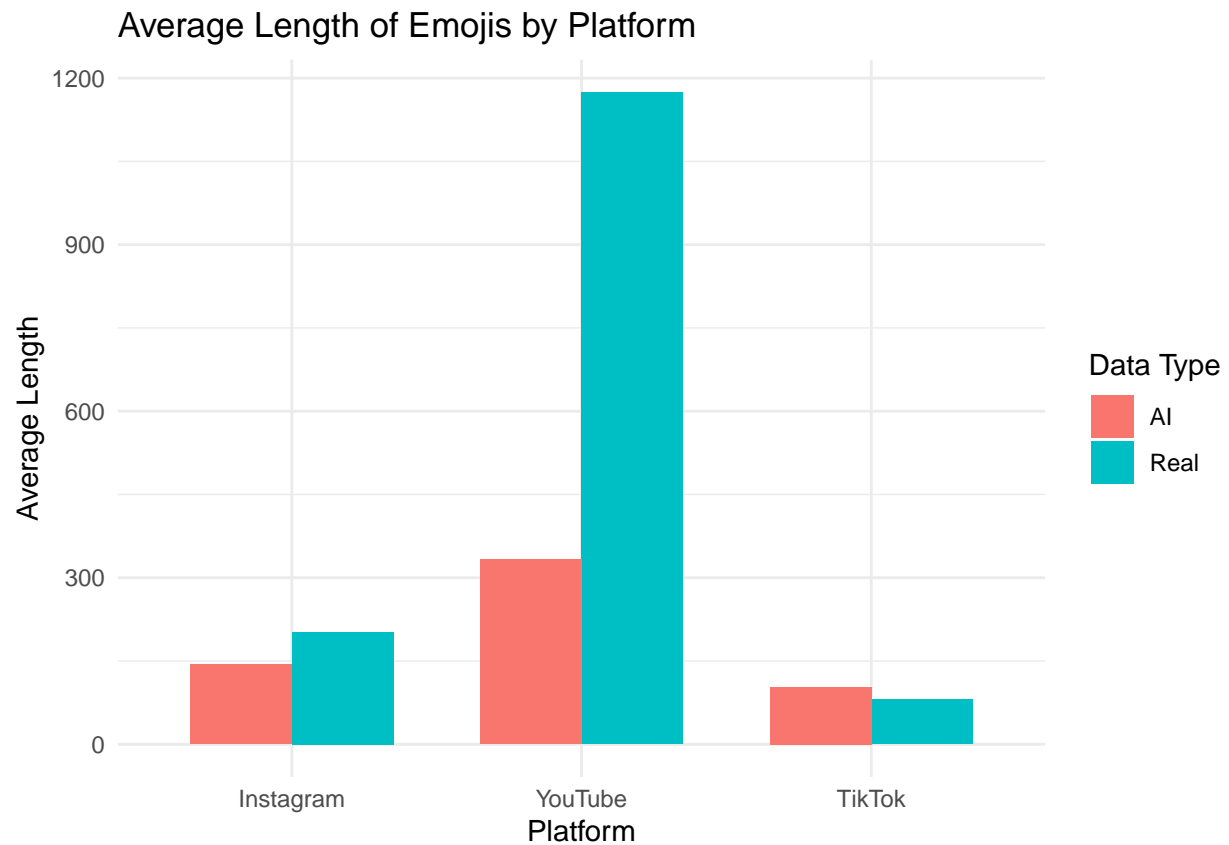


```
filtered_data <- subset(a, char == "emojis")  
  
# Plot the filtered data  
ggplot(filtered_data, aes(x = platform, y = average_length, fill = data_type)) +  
  geom_bar(stat = "identity", position = "dodge", width = 0.7) +  
  labs(  
    title = "Average Length of Emojis by Platform",  
    x = "Platform",  
    y = "Average Length",  
    fill = "Data Type"  
  ) +  
  theme_minimal()
```



```
filtered_data <- subset(a, char == "caption")

# Plot the filtered data
ggplot(filtered_data, aes(x = platform, y = average_length, fill = data_type)) +
  geom_bar(stat = "identity", position = "dodge", width = 0.7) +
  labs(
    title = "Average Length of Emojis by Platform",
    x = "Platform",
    y = "Average Length",
    fill = "Data Type"
  ) +
  theme_minimal()
```



```
ggplot(final_combined, aes(x = platform, y = caption_length, fill = source)) +  
  geom_boxplot() +  
  labs(  
    title = "Average Length of Caption",  
    x = "Platform",  
    y = "Average Length",  
    fill = "Data Type"  
  ) +  
  theme_minimal() +  
  scale_y_continuous(limits = c(0, 200))
```