Comparative Analysis of Coffee Habits Between Remote and In-Person Workers

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Executive Summary

Introduction

According to Scander et al. (2018), coffee is the second highest consumed beverage in volume, after water, in the world. No wonder it plays a central role in daily routines of workers all over the world, influencing both productivity and spending habits. According to Smith (2005), caffeine consumption enhances alertness, shortens reaction time, and improves mental clarity in the workspace. The working model shift to remote and hybrid work become increasingly common and so does the coffee consumption patterns by the working people. In a survey dataset published by James Hoffman, a pioneer of third wave coffee movement and a World Champion Barista, along with a coffee company Cometeer held a survey of around 4000 individuals about four coffees and where coffee drinkers were asked about their demographics, coffee drinking habits, coffee taste preferences, and their spending habits, which according to "State of Hybrid Work 2024 | US Report" (n.d.) could be approximately 25% of total spending in a working day! Through this survey data, this report explores how working location influences daily coffee consumption, monthly coffee spends, and consumer's willingness to splurge on premium brews. By comparing different behaviours we can provide insights into shift in consumer habits in the coffee industry.

Methodology

The survey categorizes respondents into three groups: those who work from home, those who work in an office, and those with a hybrid work arrangement. Using a questionnaire format, the survey focuses on participants' coffee consumption habits.

```r
library(ggplot2)
library(readr)
library(tidyverse)
library(patchwork)
library(knitr)
```

```r
coffee_survey <- read_csv(here::here("data/coffee_survey.csv"))

coffee_survey_selected <- coffee_survey %>%
  select("submission_id", "wfh", "cups", "total_spend", "most_paid") %>%
  mutate(wfh = recode(wfh, "I do a mix of both" = "both",
                      "I primarily work from home" = "remote",
                      "I primarily work in person" = "in_person"))
```

```r
work_mode_summary <- coffee_survey_selected %>%
  filter(!is.na(wfh)) %>%
  count(wfh) %>%
  mutate(work_mode = wfh,
         proportion = scales::percent(n/sum(n))) %>%
  select(work_mode, n, proportion)

knitr::kable(work_mode_summary)
```

Table 1: Proportion of Participants by Work Mode

work_mode	n	proportion
both	883	25.1%
in_person	1049	29.8%
remote	1592	45.2%

Table 1 is used to show the number of people in each group, and calculate the percentage of them within the total sample. So that we can compare the proportion of different groups.

```r
cup_sum <- coffee_survey_selected %>%
  filter(!is.na(cups), !is.na(wfh)) %>%
  count(cups, wfh) %>%
  mutate(cups = factor(
    cups,
    levels = c("Less than 1", "1", "2", "3", "4", "More than 4"))
    )

p1 <- cup_sum %>%
  ggplot(aes(x = cups, y = n, fill = wfh)) +
  geom_col(position = "dodge", width = 0.6) +
  labs(
    title = "Cups of coffee per day",
    x = "Cups",
    y = "Number of people",
    fill = "Work Mode") +
  theme_minimal()

total_spend_sum <- coffee_survey_selected %>%
  filter(!is.na(total_spend), !is.na(wfh)) %>%
  count(total_spend, wfh) %>%
  mutate(total_spend = factor(
    total_spend, levels = c(
      "<$20", "$20-$40", "$40-$60", "$60-$80", "$80-$100", ">$100"))
    )

p2 <- total_spend_sum %>%
  ggplot(aes(x = total_spend, y = n, fill = wfh)) +
  geom_col(position = "dodge", width = 0.6) +
  labs(
    title = "Money spent on coffee per month",
    x = "Spending Range", y = "Number of People", fill = "Work Mode"
    ) +
  theme_minimal()

most_paid_sum <- coffee_survey_selected %>%
  filter(!is.na(most_paid), !is.na(wfh)) %>%
  count(most_paid, wfh) %>%
  mutate(most_paid = factor(most_paid, levels = c(
    "Less than $2", "$2-$4", "$4-$6", "$6-$8", "$8-$10",
    "$10-$15", "$15-$20", "More than $20"))
    )
```

```
p3 <- most_paid_sum %>%
  ggplot(aes(x = most_paid, y = n, fill = wfh)) +
  geom_col(position = "dodge", width = 0.6) +
  labs(title = "Maximum Price Paid for a Cup of Coffee",
       x = "Spending Range", y = "Number of People", fill = "Work Mode"
       ) +
  theme_minimal()
```

```
p1 <- p1 + theme(axis.text.x = element_text(angle = 45, hjust = 1))
p2 <- p2 + theme(axis.text.x = element_text(angle = 45, hjust = 1))
p3 <- p3 + theme(axis.text.x = element_text(angle = 45, hjust = 1))

combined <- (p1 | p2) / (p3 | patchwork::plot_spacer())

ggsave("combined_plot.png", combined, width = 14, height = 10)

knitr::include_graphics("combined_plot.png")
```
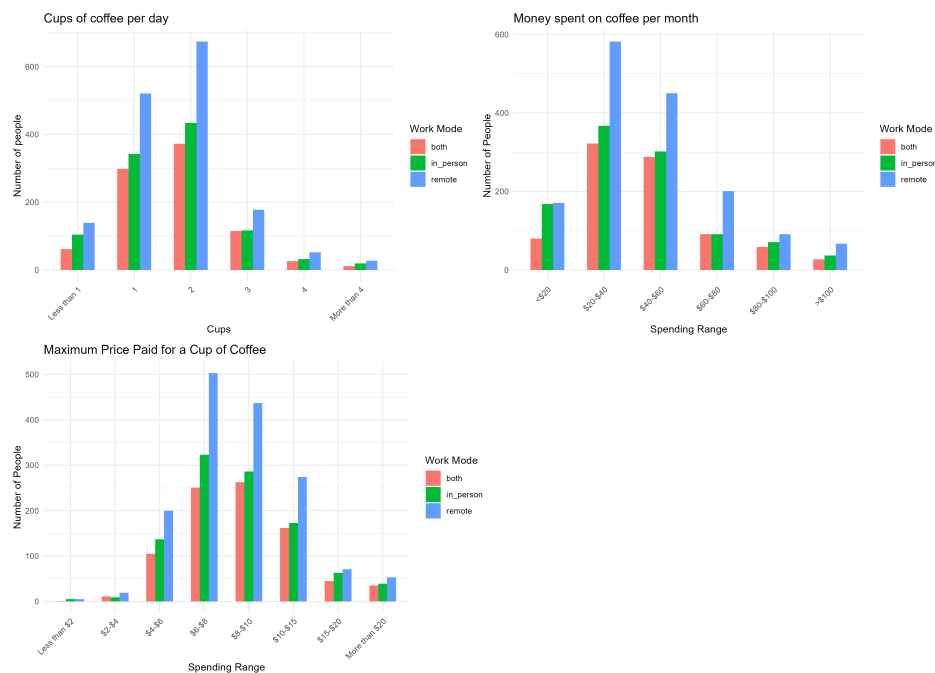

Figure 1: Research results

According to Figure 1 , we can make comparisons across the three groups, showing their daily

coffee consumption, monthly coffee spending, and the maximum price paid for a cup of coffee. This allows us to observe respondents' preferences and behavior regarding coffee consumption. Building on these insights, we can further apply cluster analysis to categorize consumers into different types, which helps us draw more conclusions.

Results

Conclusion

Scander, Henrik, Celia Monteagudo, Bente Nilsen, Richard Tellström, and Agneta Yngve. 2018. "Beverage Consumption Patterns and Energy Contribution from Beverages Per Meal Type: Results from a National Dietary Survey in Sweden." *Public Health Nutr.* 21 (18): 3318–27. https://doi.org/10.1017/S1368980018002537.

Smith, Andrew P. 2005. "Caffeine at Work." *Hum Psychopharmacol* 20 (6): 441–45. https://doi.org/10.1002/hup.705.

"State of Hybrid Work 2024 | US Report." n.d. Owl Labs. Accessed May 24, 2025.