R6-R7.R

91939

2023-11-27

```r
setwd("C:/Users/91939/Desktop/1st-MCA/R")
std_data=read.csv("13-Influence of AI TOOLS on Student's Learning Process.csv",header=T)

#Dropping unwanted columns and cleaning the dataset
drop=c("Timestamp","Username","Any.Comments..Review")
std_data= std_data[,!(names(std_data) %in% drop)]

#change column_names
colnames(std_data)=c("ar","g","e","freq","access","sat_per","impt","recall","mot_ler","sat_info","sat",
str(std_data)
```

```
## 'data.frame':    158 obs. of  22 variables:
##  $ ar      : chr  "18-24" "18-24" "18-24" "18-24" ...
##  $ g       : chr  "Male" "Male" "Male" "Male" ...
##  $ e       : chr  "Postgraduate" "Postgraduate" "Postgraduate" "Undergraduate" ...
##  $ freq    : chr  "Strongly agree" "Agree" "Strongly agree" "Agree" ...
##  $ access  : chr  "Strongly agree" "Agree" "Strongly agree" "Agree" ...
##  $ sat_per : chr  "Strongly agree" "Agree" "Strongly agree" "Strongly agree" ...
##  $ impt    : chr  "Strongly Agree" "Agree" "Agree" "Neutral" ...
##  $ recall  : chr  "Strongly Agree" "Agree" "Agree" "Agree" ...
##  $ mot_ler : chr  "Strongly Agree" "Agree" "Neutral" "Neutral" ...
##  $ sat_info: chr  "Strongly Agree" "Agree" "Disagree" "Agree" ...
##  $ sat     : chr  "Strongly Agree" "Agree" "Strongly Agree" "Agree" ...
##  $ anx     : chr  "Strongly Agree" "Agree" "Strongly Agree" "Agree" ...
##  $ prcy    : chr  "Neutral" "Agree" "Disagree" "Disagree" ...
##  $ saw     : chr  "Agree" "Agree" "Neutral" "Agree" ...
##  $ p_att   : chr  "Neutral" "Agree" "Agree" "Neutral" ...
##  $ flex    : chr  "Disagree" "Agree" "Disagree" "Agree" ...
##  $ under   : chr  "Agree" "Agree" "Strongly Disagree" "Agree" ...
##  $ i_feed  : chr  "Strongly Agree" "Agree" "Disagree" "Agree" ...
##  $ m_obj   : chr  "Strongly Agree" "Agree" "Strongly Agree" "Agree" ...
##  $ p_alter : chr  "Strongly Agree" "Agree" "Strongly Agree" "Agree" ...
##  $ add_s   : chr  "Strongly Agree" "Agree" "Disagree" "Agree" ...
##  $ l_exp   : chr  "Strongly Agree" "Agree" "Agree" "Agree" ...
```

```r
summary(std_data)
```

```
##       ar                  g                   e                  freq
##  Length:158          Length:158          Length:158          Length:158
##  Class :character    Class :character    Class :character    Class :character
##  Mode  :character    Mode  :character    Mode  :character    Mode  :character
```

```
##      access             sat_per             impt              recall
## Length:158          Length:158          Length:158          Length:158
## Class :character    Class :character    Class :character    Class :character
## Mode  :character    Mode  :character    Mode  :character    Mode  :character
##     mot_ler            sat_info            sat               anx
## Length:158          Length:158          Length:158          Length:158
## Class :character    Class :character    Class :character    Class :character
## Mode  :character    Mode  :character    Mode  :character    Mode  :character
##     prcy               saw               p_att             flex
## Length:158          Length:158          Length:158          Length:158
## Class :character    Class :character    Class :character    Class :character
## Mode  :character    Mode  :character    Mode  :character    Mode  :character
##     under              i_feed            m_obj             p_alter
## Length:158          Length:158          Length:158          Length:158
## Class :character    Class :character    Class :character    Class :character
## Mode  :character    Mode  :character    Mode  :character    Mode  :character
##     add_s              l_exp
## Length:158          Length:158
## Class :character    Class :character
## Mode  :character    Mode  :character
```

```r
ar=factor(std_data$ar)
g=factor(std_data$g)
e=factor(std_data$e)

#Graph-1
library(ggplot2)
```

```
## Warning: package 'ggplot2' was built under R version 4.3.2
```

```r
library(dplyr)
```

```
## Warning: package 'dplyr' was built under R version 4.3.2
```

```
##
## Attaching package: 'dplyr'
```
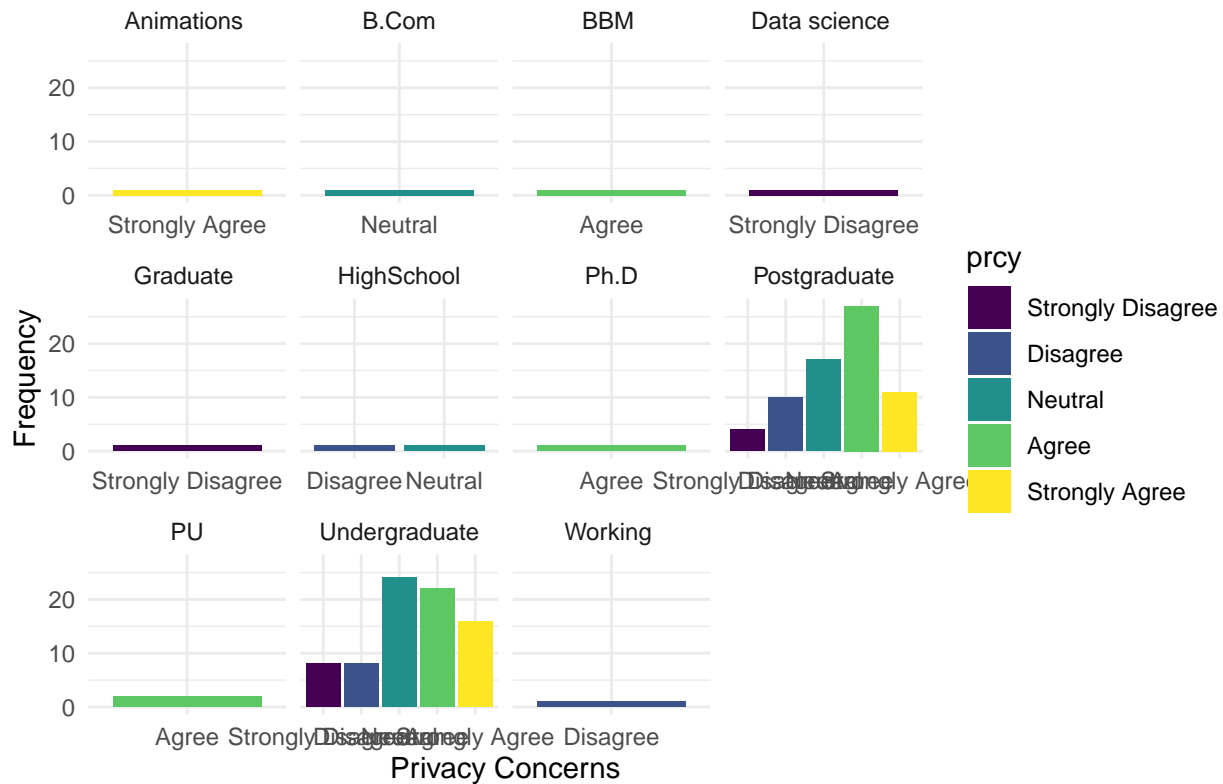
```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```r
std_data$prcy <- factor(std_data$prcy, ordered = TRUE,
                        levels = c("Strongly Disagree", "Disagree", "Neutral", "Agree", "Strongly Agree
ggplot(std_data, aes(x = prcy, fill = prcy)) +
  geom_bar(position = "stack") +
  facet_wrap(~ e, scales = "free_x") +
  labs(title = "Histogram of No Privacy Concerns by Education Level",
```

```
      x = "Privacy Concerns",
      y = "Frequency") +
  theme_minimal()
```

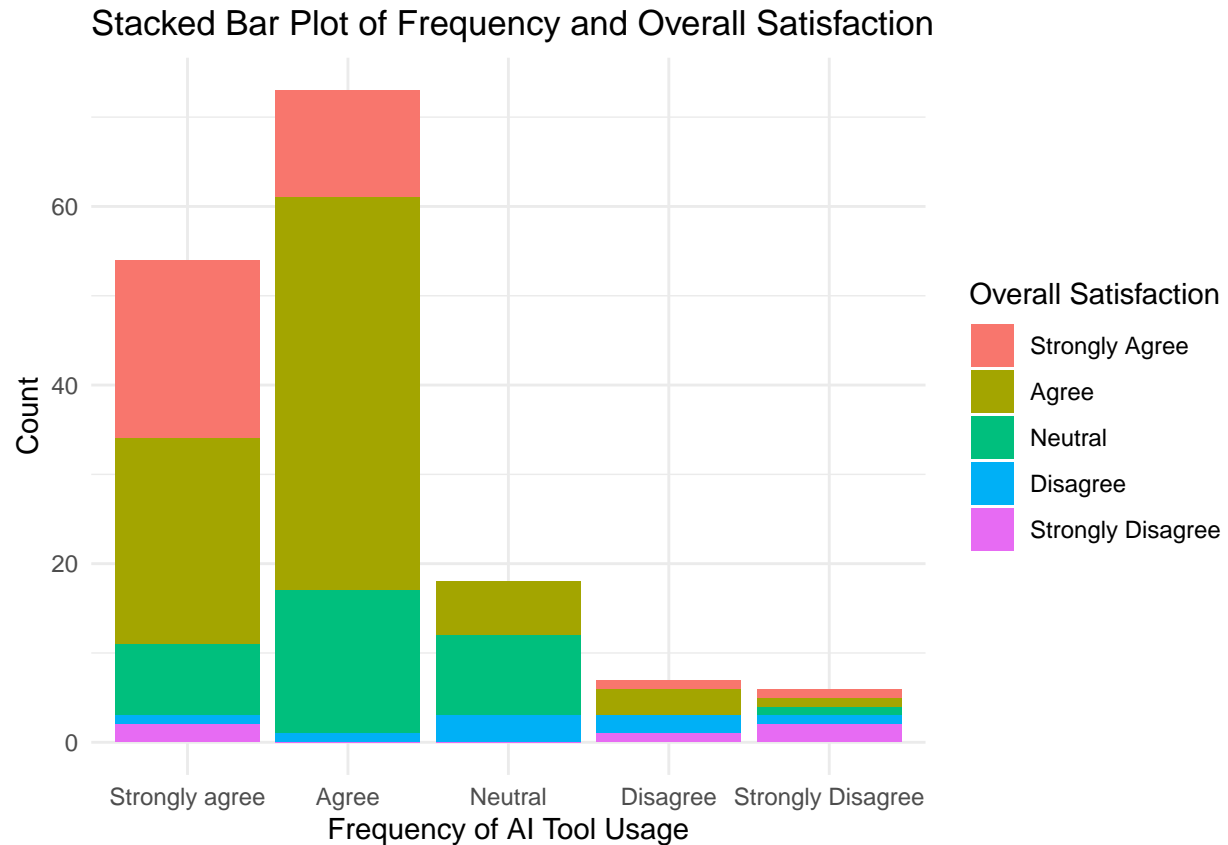## Histogram of No Privacy Concerns by Education Level


```
#UNDERSTANDING THE GRAPH - 1
# The maximum number of responses are from respondents who are Undergraduates or Postgraduates.
# Most of the respondants who frequently use AI Tools have less privacy concerns(Agree), whereas few ha




#Graph-2
std_data$freq <- factor(std_data$freq, ordered = TRUE, levels = c("Strongly agree", "Agree", "Neutral",
std_data$sat <- factor(std_data$sat, ordered = TRUE, levels = c("Strongly Agree", "Agree", "Neutral", "
count_data <- as.data.frame(table(std_data$freq, std_data$sat))
colnames(count_data) <- c("Frequency", "Overall_Satisfaction", "Count")
ggplot(count_data, aes(x = Frequency, y = Count, fill = Overall_Satisfaction)) +
  geom_bar(stat = "identity", position = "stack") +
  labs(title = "Stacked Bar Plot of Frequency and Overall Satisfaction",
      x = "Frequency of AI Tool Usage",
      y = "Count",
      fill = "Overall Satisfaction") +
  theme_minimal()
```
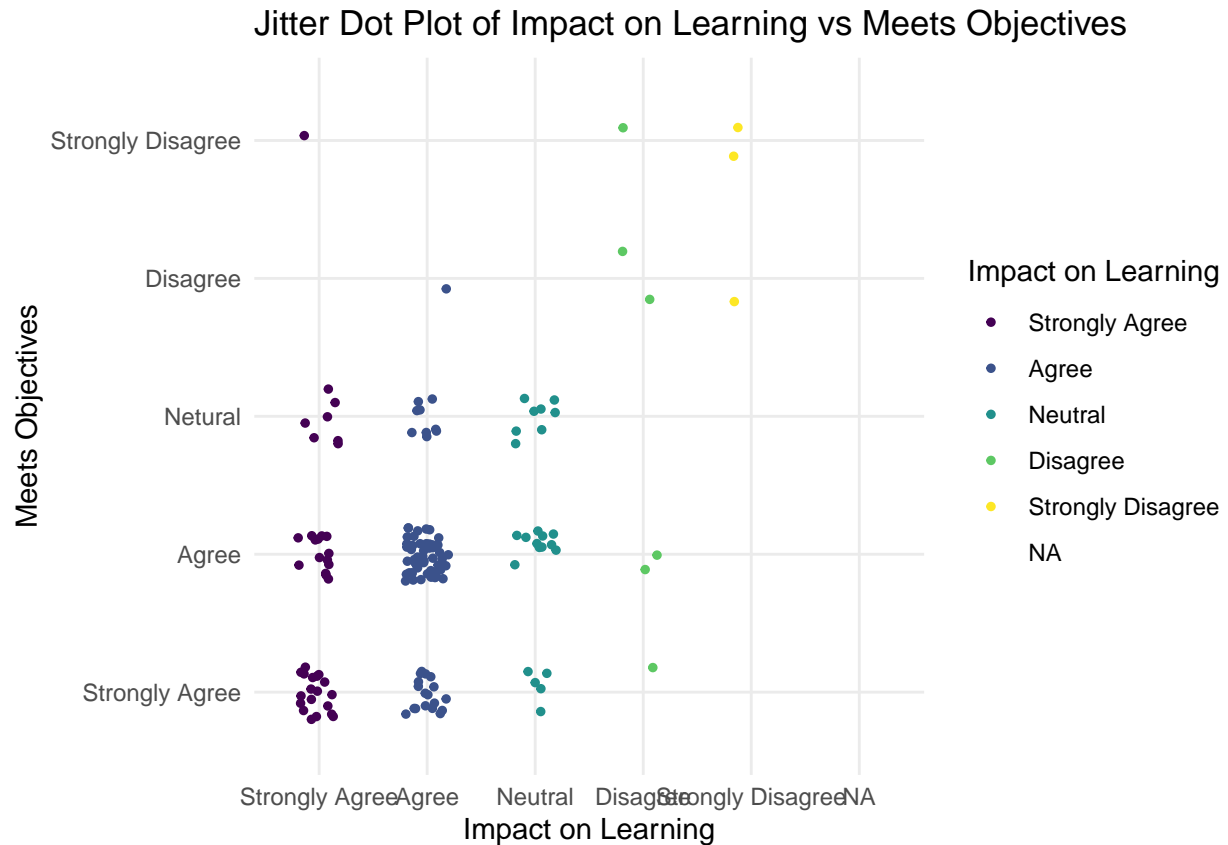
Stacked Bar Plot of Frequency and Overall Satisfaction


```
#UNDERSTANDING THE GRAPH - 2
#Most users who use Ai Tools Frequently are overall satisfied with the services provided
#Anyhow very few who use the AI tools are not satisfied



#Graph-3
std_data$impt <- factor(std_data$impt, ordered = TRUE, levels =c("Strongly Agree", "Agree", "Neutral",
std_data$m_obj <- factor(std_data$m_obj, ordered = TRUE, levels =  c("Strongly Agree", "Agree", "Netural
ggplot(std_data, aes(x = impt, y = m_obj, color = impt)) +
  geom_jitter(position = position_jitter(width = 0.2, height = 0.2), size = 1) +
  labs(title = "Jitter Dot Plot of Impact on Learning vs Meets Objectives",
       x = "Impact on Learning",
       y = "Meets Objectives",
       color = "Impact on Learning") +
  theme_minimal()
```

```
## Warning: Removed 2 rows containing missing values ('geom_point()').
```

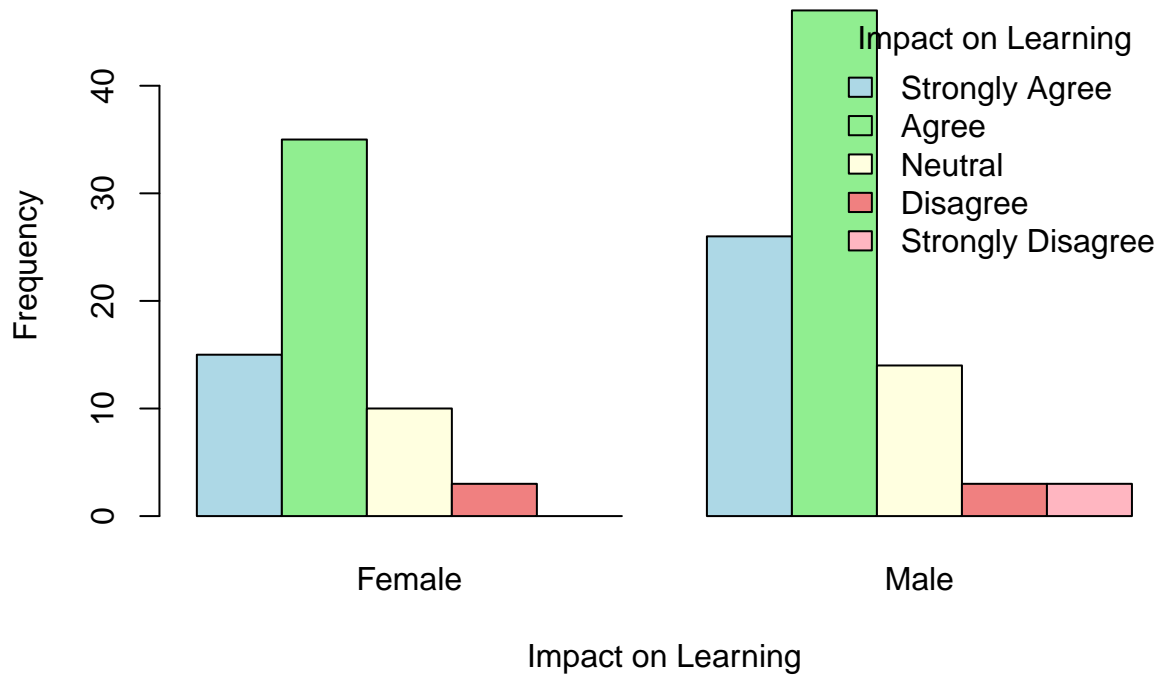## Jitter Dot Plot of Impact on Learning vs Meets Objectives

#UNDERSTANDING THE GRAPH - 3
#Meeting the objectives of the query plays a important role in impacting the user learning experience
#Better the Response of the AI Tools leads to Better Learning experience of the User

```
#Graph-4
barplot(t(table(std_data$g, std_data$impt)), beside = TRUE,
        col = c("lightblue", "lightgreen", "lightyellow", "lightcoral", "lightpink"),
        main = "Comparison of Gender and Impact on Learning",
        xlab = "Impact on Learning",
        ylab = "Frequency",
        names.arg = levels(std_data$g),
        legend.text = levels(std_data$impt),
        args.legend = list(x = "topright", bty = "n", title = "Impact on Learning")) +
  theme(legend.position = "bottom")  # Adjust legend position
```

Comparison of Gender and Impact on Learning

NULL

```
#UNDERSTANDING THE GRAPH - 4
#The respondents have a positive impact on their learning by using AI tool
#Very few respondents disagree that the AI tools impact their learning




#Graph-5
std_data$ar <- factor(std_data$ar)
std_data$m_obj <- factor(std_data$m_obj, ordered = TRUE, levels = c("Strongly Agree", "Agree", "Netural"
ggplot(std_data, aes(x = ar, y = m_obj, fill = m_obj)) +
  geom_violin(trim = FALSE) +
  labs(title = "Violin Plot of Age and Meets Objectives",
       x = "Age Range",
       y = "Meets Objectives",
       fill = "Meets Objectives") +
  theme_minimal()
```
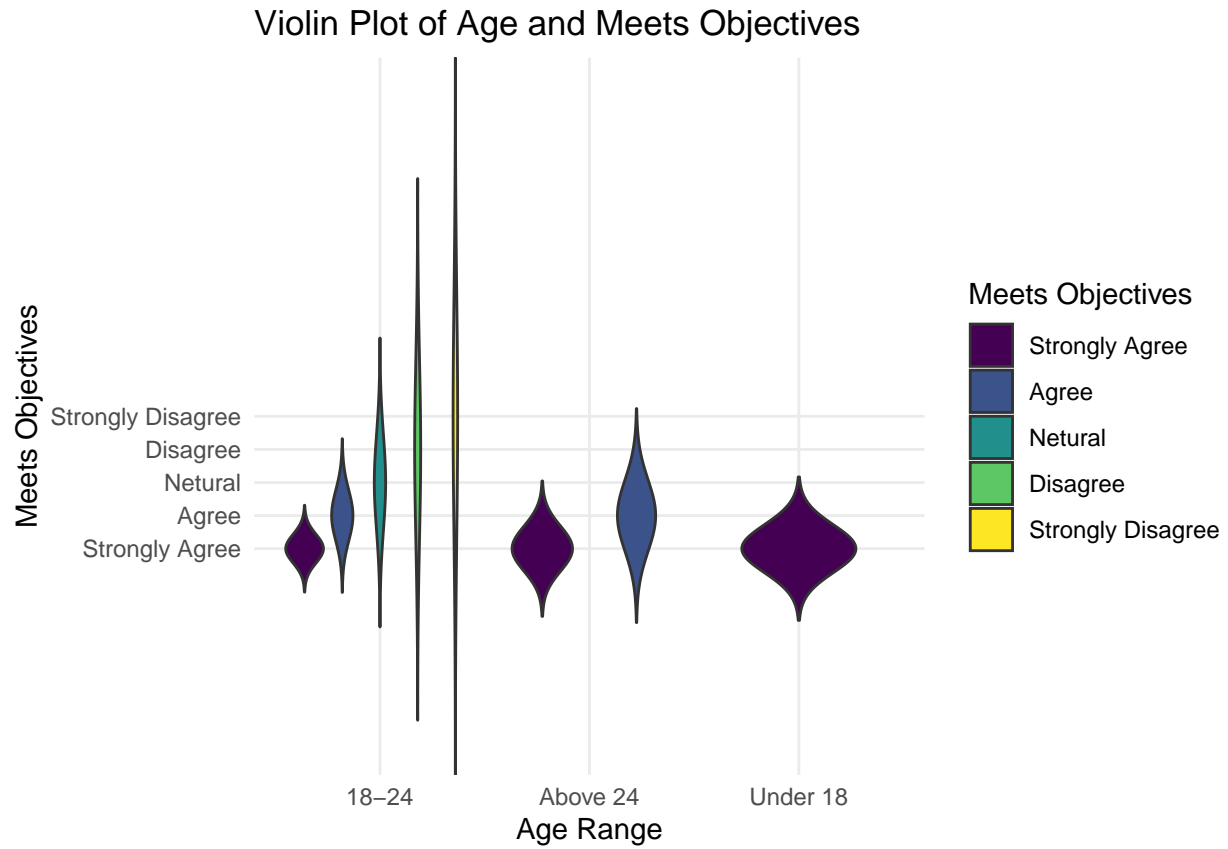
Warning: Groups with fewer than two data points have been dropped.

Warning: Groups with fewer than two data points have been dropped.
Groups with fewer than two data points have been dropped.
Groups with fewer than two data points have been dropped.

Violin Plot of Age and Meets Objectives

#UNDERSTANDING THE GRAPH - 5
#Teenagers(Under-18) and above-24 aged people who use AI tools gets their responses which meets the obj
#For the people who are aged between 18-24 AI have met most of the objectives but still few people are s