

# Milestone\_4

Moliehi Mokete and Bongekile Nkosi

2022-11-20

```
## Warning in system("timedatectl", intern = TRUE): running command 'timedatectl'
## had status 1

## -- Attaching packages ----- tidyverse 1.3.1 --

## v ggplot2 3.3.5      v purrr  0.3.4
## v tibble  3.1.6      v dplyr  1.0.8
## v tidyr   1.2.0      v stringr 1.4.0
## v readr   2.1.2      v forcats 0.5.1

## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()

##
## Attaching package: 'janitor'

## The following objects are masked from 'package:stats':
##
##   chisq.test, fisher.test

##
## Attaching package: 'kableExtra'

## The following object is masked from 'package:dplyr':
##
##   group_rows
```

## 1. One print quality table as requested in scenario:

case rates by month for different regions within the EU.

```
summary_table1<- joined_df%>%
  group_by(sub_region, month_rep)%>%
  summarise(total_case_region= sum(total_conf_case))%>%
  mutate(monthly_cases_per_region= sum(total_case_region),
         MPX_cases_rate_per_region =
           round( total_case_region/monthly_cases_per_region*100,1))%>%
  arrange(sub_region, desc(month_rep))
```

```
## 'summarise()' has grouped output by 'sub_region'. You can override using the
## '.groups' argument.
```

Table 1: MonkeyPox Rates per month for different regions within the EU in 2022

EU Regions	Months MPX cases reported	MPX cases	Total MPX cases per region	MPX cases rate per month
Eastern Europe	May	5	277	1.8
Eastern Europe	June	58	277	20.9
Eastern Europe	July	116	277	41.9
Eastern Europe	August	98	277	35.4
Northern Europe	May	16	576	2.8
Northern Europe	June	117	576	20.3
Northern Europe	July	246	576	42.7
Northern Europe	August	197	576	34.2
Southern Europe	May	422	7,906	5.3
Southern Europe	June	1,902	7,906	24.1
Southern Europe	July	3,773	7,906	47.7
Southern Europe	August	1,809	7,906	22.9
Western Europe	May	131	8,257	1.6
Western Europe	June	2,040	8,257	24.7
Western Europe	July	4,134	8,257	50.1
Western Europe	August	1,952	8,257	23.6

```

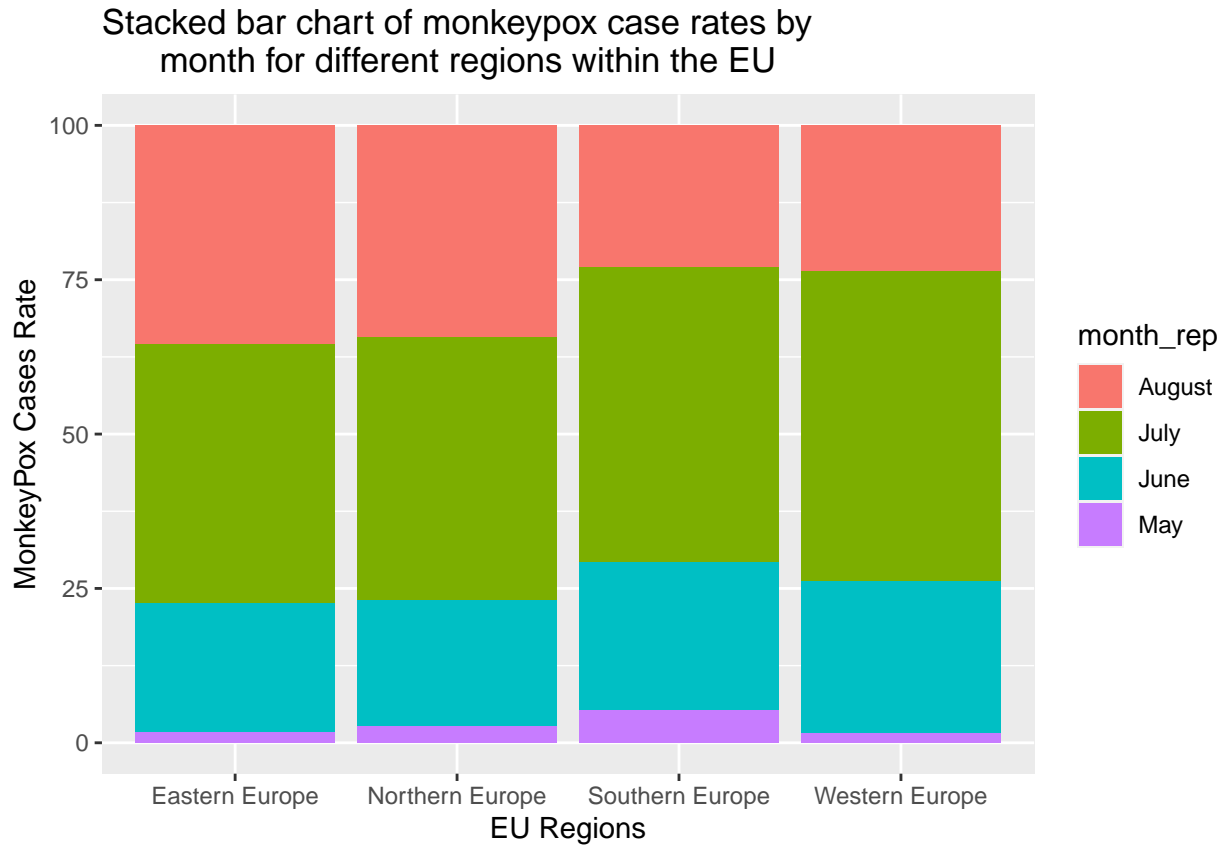
kable(summary_table1,
      booktabs=T,
      col.names=c("EU Regions", "Months MPX cases reported", "MPX cases",
                  "Total MPX cases per region",
                  "MPX cases rate per month per region"),
      align='lcccc',
      caption="MonkeyPox Rates per month for different regions within the EU in 2022",
      format.args=list(big.mark=","))

```

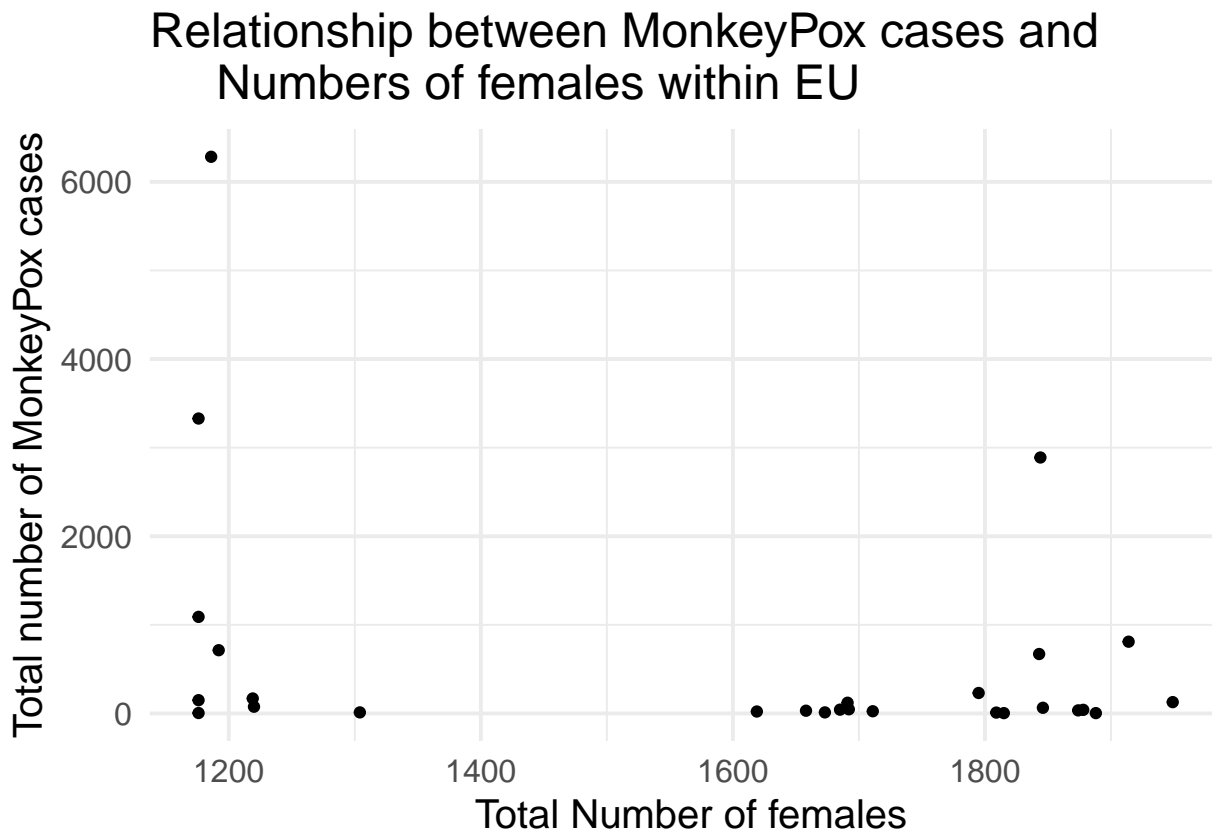
One print quality plot or chart as requested in scenario

```
summary_table1$month_rep<- factor(summary_table1$month_rep)

summary_table1 %>%
  ggplot(aes( x=sub_region, y= MPX_cases_rate_per_region,fill=month_rep)) +
  geom_bar(stat="identity")+
  labs(x = "EU Regions", y = "MonkeyPox Cases Rate")+
  ggtitle("Stacked bar chart of monkeypox case rates by
  month for different regions within the EU")
```



```
scatter_plot <- ggplot(data = total_dataset, aes(x = sex_female,
                                                  y = total_mpx_case)) +
  geom_point(na.rm=TRUE) + theme_minimal(base_size = 15)+
  labs(x = " Total Number of females",
       y = "Total number of MonkeyPox cases",
       title ="Relationship between MonkeyPox cases and
Numbers of females within EU")
scatter_plot
```



```
scatter_plot <- ggplot(data = total_dataset, aes(x = sex_male,
                                                  y = total_mpx_case)) +
  geom_point(na.rm=TRUE) + theme_minimal(base_size = 15)+
  labs(x = " Total Number of males",
       y = "Total number of MonkeyPox cases",
       title ="Relationship between MonkeyPox cases and
Numbers of males within EU")
scatter_plot
```

A scatter plot showing the relationship between the Total Number of males (X-axis) and the Total number of MonkeyPox cases (Y-axis). The X-axis ranges from approximately 1100 to 1950, and the Y-axis ranges from 0 to 6000. The data points are black dots. Most points are clustered near the X-axis (low number of cases), with a few high-value outliers. Notable outliers include a point at approximately (1150, 6300) and another at (1830, 2900).

Total Number of males	Total number of MonkeyPox cases
1150	6300
1150	3400
1150	1100
1150	100
1150	0
1180	700
1200	100
1220	100
1300	0
1630	0
1670	0
1690	0
1700	0
1710	0
1720	0
1800	200
1820	0
1830	2900
1840	0
1870	0
1880	700
1890	0
1900	0
1910	800
1930	100