Probability and Statistics – IT2120

IT24100886 – H.A.H.E. Wickramasinghe

Lab05

```r
setwd("C:/Users/IT24100886/Desktop/IT24100886")
getwd()

Delivery_Times <- read.table("ExerciseLab05.txt", header = TRUE, sep = "\t")
str(Delivery_Times)
names(Delivery_Times)<-c("x1")

hist(Delivery_Times$x1,
     breaks = seq(20, 70),
     right = TRUE,
     main = "Histogram of Delivery Times",
     xlab = "Delivery Time (minutes)",
     ylab = "Frequency",
     col = "lightblue")


# 3. Comment on the shape of the distribution
# The histogram shows the distribution of delivery times. Based on the data, the distribution
# appears to be slightly right-skewed, with more delivery times clustered around 30-50 minutes
# and fewer occurrences towards the higher end (60-70 minutes). There is no strong evidence
# of bimodality or symmetry, and the distribution does not appear perfectly normal.

# 4. Draw a cumulative frequency polygon (ogive)
freq_table <- table(cut(Delivery_Times$x1, breaks = seq(20, 70, length.out = 10), right = TRUE))
cum_freq <- cumsum(freq_table)
breaks <- seq(20, 70, length.out = 10)

plot(breaks, c(0, cum_freq), type = "l",
     main = "Cumulative Frequency Polygon (Ogive) of Delivery Times",
     xlab = "Delivery Time (minutes)",
     ylab = "Cumulative Frequency",
     col = "blue",
     lwd = 2)
points(breaks, c(0, cum_freq), pch = 16, col = "blue")
```

```
Console   Terminal ×   Background Jobs ×
R 4.2.2 · C:/Users/IT24100886/Desktop/IT24100886/
> setwd("C:/Users/IT24100886/Desktop/IT24100886")
> getwd()
[1] "C:/Users/IT24100886/Desktop/IT24100886"
>
> Delivery_Times <- read.table("ExerciseLab05.txt", header = TRUE, sep = "\t")
> str(Delivery_Times)
'data.frame':   40 obs. of  1 variable:
 $ Delivery_Time_.minutes.: int  34 54 47 29 39 61 20 40 57 36 ...
> names(Delivery_Times)<-c("x1")
>
> hist(Delivery_Times$x1,
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+      right = TRUE,
+      main = "Histogram of Delivery Times",
+      xlab = "Delivery Time (minutes)",
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```

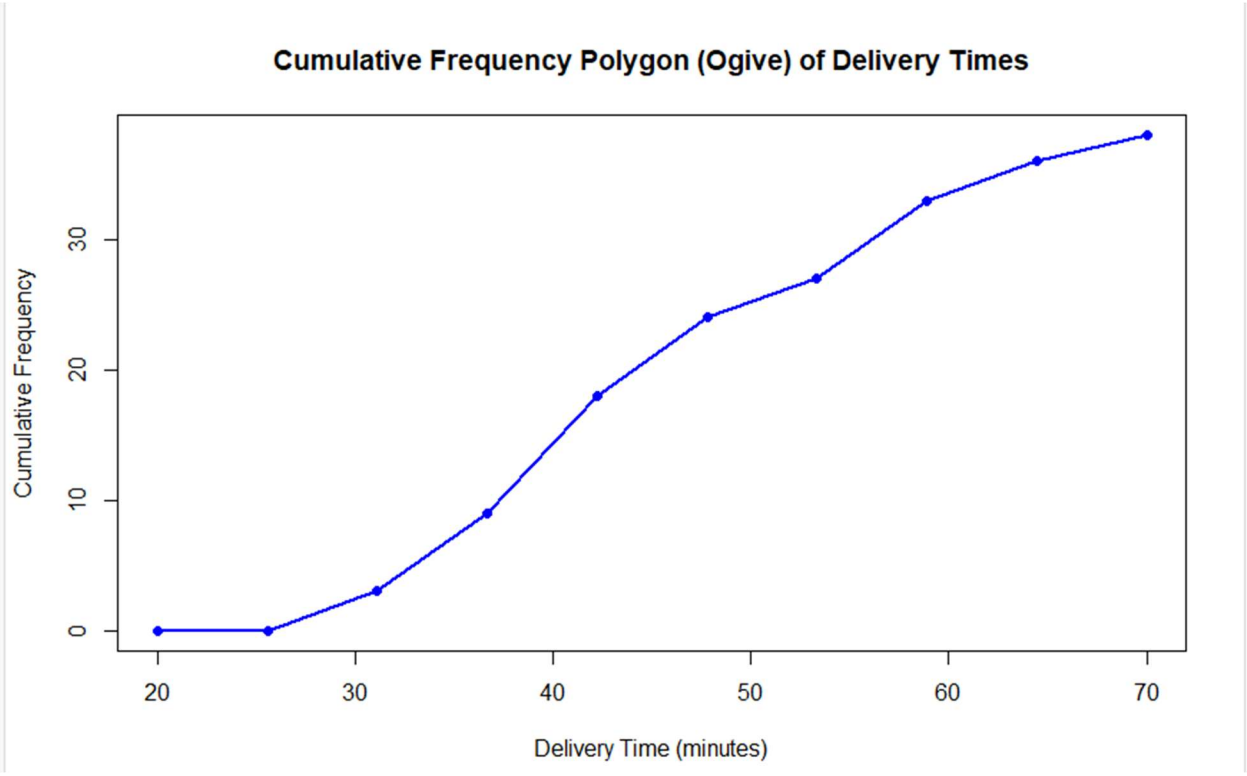

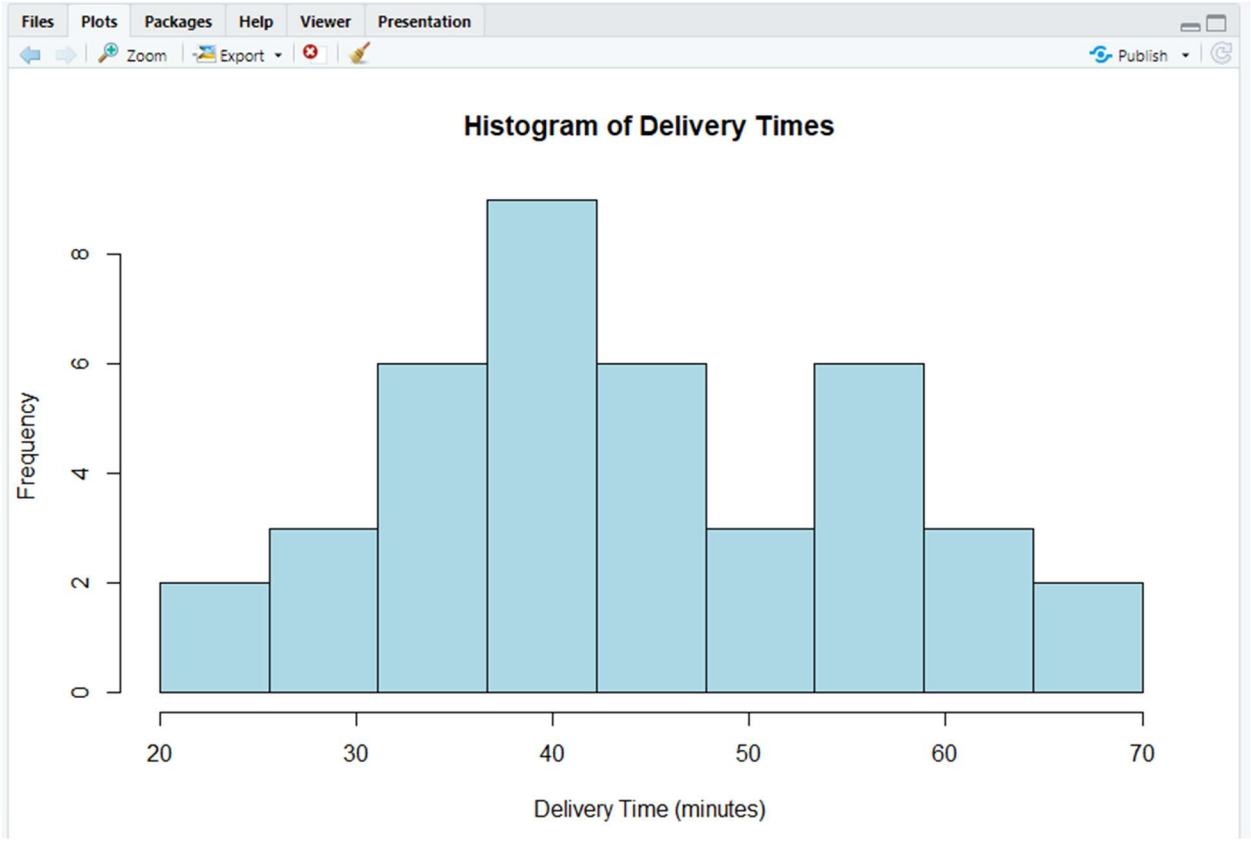
Files
Plots
Packages
Help
Viewer
Presentation
Zoom
Export
Publish
Histogram of Delivery Times
Frequency
0
2
4
6
8
20
30
40
50
60
70
Delivery Time (minutes)