

SHETH L.U.J. AND SIR M.V. COLLEGE

DATA ANALYSIS WITH R

AIM: Performing paired t-tests using `t.test(paired=TRUE)`.

CODE:

```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function Addins Project: (None)
S096-P12A.R S096-P10.R S096-P13.R S096-P14.R S096-P15.R S096-M2P1.R S096-M2P2.R S096-M2P3.R S096-M2P4.R S096-M2P5.R S096-M2P6.R
Source on Save Run Source
1 library(dplyr)
2 df <- read.csv("qualcomm_data.csv", nrow = 5)
3
4 print("--- 4. One-Sample t-test ---")
5
6 t_test_one <- t.test(df$Revenue, mu = 30)
7 print(t_test_one)
8
9 print("--- 5. Independent Two-Sample t-test ---")
10
11 df$Time_Period <- ifelse(df$Year >= 2021, "Recent", "Early")
12
13 t_test_two <- t.test(Revenue ~ Time_Period, data = df)
14 print(t_test_two)
15
16 print("--- 6. Paired t-test ---")
17
18 set.seed(123)
19 df$Projected_Revenue <- df$Revenue - runif(nrow(df), min=-2, max=5)
20
21 t_test_paired <- t.test(df$Revenue, df$Projected_Revenue, paired = TRUE)
22 print(t_test_paired)
7:18 (Top Level) R Script
Console
Windows Search File Explorer Edge Chrome Task View Settings Network Volume 05:51 PM 14-12-2025
```

OUTPUT:

```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function Addins Project: (None)
Source
R 4.4.1 ~ /
data: df$Revenue
t = -0.082298, df = 4, p-value = 0.9384
alternative hypothesis: true mean is not equal to 30
95 percent confidence interval:
 18.18966 41.13034
sample estimates:
mean of x
 29.66

> print("--- 5. Independent Two-Sample t-test ---")
[1] "--- 5. Independent Two-Sample t-test ---"
>
> df$Time_Period <- ifelse(df$Year >= 2021, "Recent", "Early")
>
> t_test_two <- t.test(Revenue ~ Time_Period, data = df)
> print(t_test_two)

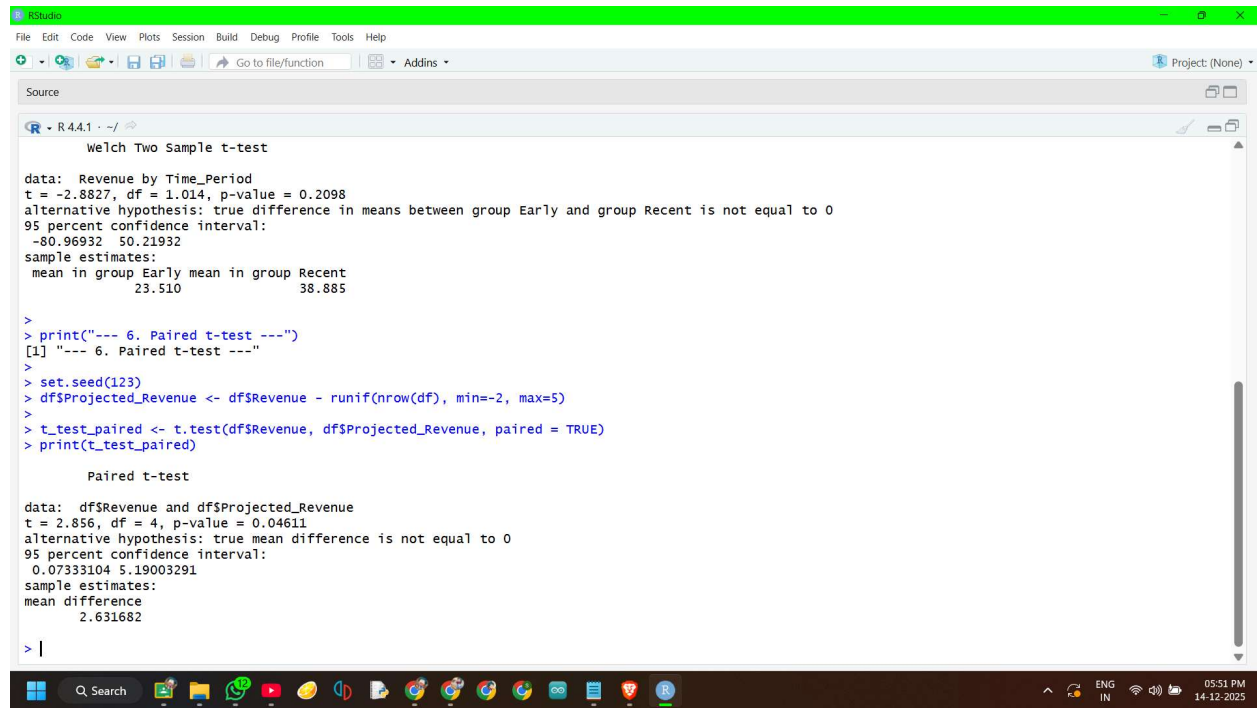
Welch Two Sample t-test

data: Revenue by Time_Period
t = -2.8827, df = 1.014, p-value = 0.2098
alternative hypothesis: true difference in means between group Early and group Recent is not equal to 0
95 percent confidence interval:
 -80.96932 50.21932
sample estimates:
mean in group Early mean in group Recent
 23.510 38.885

> print("--- 6. Paired t-test ---")
[1] "--- 6. Paired t-test ---"
>
> set.seed(123)
```

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DATA ANALYSIS WITH R



```
Welch Two Sample t-test

data: Revenue by Time_Period
t = -2.8827, df = 1.014, p-value = 0.2098
alternative hypothesis: true difference in means between group Early and group Recent is not equal to 0
95 percent confidence interval:
 -80.96932  50.21932
sample estimates:
mean in group Early mean in group Recent
      23.510          38.885

>
> print("--- 6. Paired t-test ---")
[1] "--- 6. Paired t-test ---"
>
> set.seed(123)
> df$Projected_Revenue <- df$Revenue - runif(nrow(df), min=-2, max=5)
>
> t_test_paired <- t.test(df$Revenue, df$Projected_Revenue, paired = TRUE)
> print(t_test_paired)

Paired t-test

data: df$Revenue and df$Projected_Revenue
t = 2.856, df = 4, p-value = 0.04611
alternative hypothesis: true mean difference is not equal to 0
95 percent confidence interval:
 0.07333104 5.19003291
sample estimates:
mean difference
      2.631682

> |
```