

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

Subject: Data Analysis with SAS / SPSS /R

Practical no. 9

Aim: Conducting Chi-square tests using chisq.test() (R)

Outputs→

The screenshot shows the RStudio interface with the following details:

- File Menu:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Source Editor:** Contains R code for loading a dataset, creating a contingency table, performing a Chi-Square test, and printing hypotheses and p-value.
- Environment View:** Shows the global environment with objects like chi, clean_omit, clean_replace, close_gt_900, close_vo1_subs..., context, context_master, data_feb, and data_food.
- Files View:** Shows the file structure under "Home".
- Bottom Bar:** Includes icons for search, file operations, and system status (31°C, ENG IN, 15:57, 21-12-2025).

```
R - R 4.5.2 · ~/ 
> # Load required library
> library(dplyr)
> # Read the dataset
> context <- read.csv("context_master.csv")
> # Create contingency table
> tbl <- table(context$GENDER, context$ROLE)
> # Chi-Square test
> chi <- chisq.test(tbl)

Warning message:
In chisq.test(tbl) : Chi-squared approximation may be incorrect

> # Print hypotheses
> cat("\nNull Hypothesis (H0): Gender and role are independent\n\n")
Null Hypothesis (H0): Gender and role are independent
> cat("Alternate Hypothesis (H1): Gender and role are associated\n\n")
Alternate Hypothesis (H1): Gender and role are associated

> # Print p-value
> cat("P-value:", chi$p.value, "\n\n")
P-value: 2.256956e-51

> # Decision
> if(chi$p.value < 0.05) {
+   cat("Decision: Reject H0 and Accept H1\n")
+   cat("Reason: p-value < 0.05, variables are associated\n")
+ } else {
+   cat("Decision: Accept H0 and Reject H1\n")
+   cat("Reason: p-value >= 0.05, variables are independent\n")
+ }
Decision: Reject H0 and Accept H1
Reason: p-value < 0.05, variables are associated
>
>
> |
```