

MVLU COLLEGE

AIM:

7 Performing one-way ANOVA using aov() (R).

```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function Addins
Project: (None)

Source
R - R 4.5.2 - ~/
> data1 <- read.csv("C:/Users/Admin/Desktop/student data.csv")
> colnames(data1)
[1] "Id" "Age" "Study.Hours" "Attendance..." "Score..."
> colnames(data1) <- c("ID", "Age", "Study_Hours", "Attendance", "Score")
> data1$Age <- as.factor(data1$Age)
> anova_one <- aov(Score ~ Age, data = data1)
> summary(anova_one)
          Df Sum Sq Mean Sq F value Pr(>F)
Age         2      146    72.77   0.31 0.738
Residuals   17    3996   235.07
> data1 <- read.csv("C:/Users/Admin/Desktop/student data.csv")
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>
```

8 Performing two-way ANOVA using aov() (R).

```
RStudio
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Go to file/function Addins
Project: (None)

Source
R - R 4.5.2 - ~/
> data2 <- read.csv("C:/Users/Admin/Desktop/titanic.csv")
> head(data2)
  PassengerId Survived Pclass Name Sex Age SibSp Parch Ticket
1          1         0       3 Braund, Mr. Owen Harris male  22   1   0   A/5 21171
2          2         1       1 Cumings, Mrs. John Bradley (Florence Briggs Thayer) female 38   1   0   PC 17599
3          3         1       3 Heikkinen, Miss. Laina female 26   0   0 STON/O2. 3101282
4          4         1       1 Futrelle, Mrs. Jacques Heath (Lily May Peel) female 35   1   0   113803
5          5         0       3 Allen, Mr. William Henry male 35   0   0   373450
6          6         0       3 Moran, Mr. James male NA   0   0   330877
  Fare Cabin Embarked
1  7.2500      S
2 71.2833     C85    C
3  7.9250      S
4 53.1000    C123    S
5  8.0500      S
6  8.4583      Q
> data2$Sex <- as.factor(data2$Sex)
> data2$Survived <- as.factor(data2$Survived)
> table_data <- table(data2$Sex, data2$Survived)
> chisq.test(table_data)

Pearson's Chi-squared test with Yates' continuity correction

data: table_data
X-squared = 260.72, df = 1, p-value < 2.2e-16
> |
```

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

The screenshot displays the RStudio interface with a script editor, console, and environment pane. The script editor contains R code for reading a CSV file, creating a table, and performing a Chi-square test. The console shows the output of the test, including the Pearson's Chi-squared test results and the p-value.

```
> data3 <- read.csv("C:/Users/Admin/Desktop/Suicides_in_India_random_500 (1).csv")
> head(data3)
  State Year Gender Age_group Total
1 A & N Islands 2003 Female 0-14 0
2 Kerala 2001 Male 60+ 120
3 Gujarat 2010 Male 60+ 7
4 Delhi (ut) 2011 Female 45-59 0
5 Sikkim 2010 Female 45-59 2
6 west Bengal 2002 Male 15-29 9
> data3$Gender <- as.factor(data3$Gender)
> data3$Age_group <- as.factor(data3$Age_group)
> table_data <- table(data3$Gender, data3$Age_group)
> table_data
      0-100+ 0-14 15-29 30-44 45-59 60+
Female    13    53    48    35    48    55
Male      9    46    63    39    45    45
> chisq.test(table_data)

Pearson's Chi-squared test

data: table_data
X-squared = 4.5126, df = 5, p-value = 0.4782
> |
```

The environment pane on the right shows the data objects: anova_... (List of 13), data1 (20 obs. of 5 va...), data2 (891 obs. of 12 ...), and data3 (499 obs. of 5 v...). The Files pane shows the file explorer with various folders and files.

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