DELHI TECHNOLOGICAL UNIVERSITY

PROBABILITY AND STATISTICS (MC-205)

PRACTICAL FILE

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INDEX

EXPERIMENT 9

Chi-square Test

SOURCE CODE:

Chi-square Test of Independence

```
tbl=cbind(x=c(12,23,26,17,9,45),y=c(34,25,41,19,53,33))

chisq.test(tbl)

chisq.test(rnorm(10),rnorm(10))
```

OUTPUT:

Chi-square Test of Independence

```
> tbl=cbind(x=c(12,23,26,17,9,45),y=c(34,25,41,19,53,33))
> tbl
      x  y
[1,] 12 34
[2,] 23 25
[3,] 26 41
[4,] 17 19
[5,]  9 53
[6,] 45 33
> chisq.test(tbl)

        Pearson's Chi-squared test

data:  tbl
X-squared = 32.876, df = 5, p-value = 3.983e-06
```

```
> chisq.test(rnorm(10),rnorm(10))

        Pearson's Chi-squared test

data:  rnorm(10) and rnorm(10)
X-squared = 90, df = 81, p-value = 0.2313
```

CONCLUSION:

A **chi-squared test**, is a statistical hypothesis test that is valid to perform when the test statistic is chi-squared distributed under the null hypothesis, specifically Pearson's chi-squared test and variants thereof.

Pearson's chi-squared test is used to determine whether there is a statistically significant difference between the expected frequencies and the observed frequencies in one or more categories of a contingency table.