Chi Square Test:

It is a test technique for categorical variables.

The chi square test for goodness of fit claims about population proportion.

It is a non-parametric test that is performed on the categorical [ordinal and nominal] data.

Example:

There is a population of male who likes different color bikes.

1/3rd like Yellow, 1/3rd like Red, 1/3rd like Orange bikes according to the theory for the population (theory categorial distribution).

They collected a sample from which they know that 22 people like yellow bike, 17 people like red bike and 59 people like orange bike (observed categorical distribution).

When sample data is available, we will try to determine whether the sample data is a goodness of fit test for the theory.

The problem we will be solving here is h the goodness of fit test, does the sample data we have collected support the theory?

The theory part is called nothing but theory categorial distribution.

The sample part is called nothing but observed categorical distribution.

In Chi squared test, we are comparing two categorical variables.

Goodness of fit test:

Q. In a science class of 75 students, 11 are left handed, does this class fit the theory that 12% of the people are left handed?

|  |  |  |
| --- | --- | --- |
|  | Observed | Expected |
| Left Handed | 11 | 9 |
| Right Handed | 64 | 66 |