

Statistical Inference: Non Parametric Tests Assignment

BACKGROUND:

The survey is conducted within a large organization to assess satisfaction level of employees in various functions. The satisfaction level is measured on 1-5 scale where higher number indicates more satisfaction.

QUESTIONS

1. Import EMPLOYEE SATISFACTION SURVEY data. Check for normality of the data.
2. Find median satisfaction level for 'IT', 'Sales' and 'Finance'. Test whether the satisfaction level among three roles differ significantly.
3. Is there any association between satisfaction level and experience level? Experience level is defined as midlevel (greater than 2 years) and Junior (less than or equal to 2 years).
4. Find number of employees with satisfaction score greater than 3 in each department

#Q1. Import EMPLOYEE SATISFACTION SURVEY data. Check for normality of the data.

##A.

```
emp_sat<-read.csv(file.choose(),header=T)
```

```
head(emp_sat)
```

```
str(emp_sat)
```

```
shapiro.test(emp_sat$exp)
```

```
shapiro.test(emp_sat$satlevel)
```

```
library(nortest)
```

```
lillie.test(emp_sat$exp)
```

```
lillie.test(emp_sat$satlevel)
```

```
#Interpretation:Since p-value <0.05, normality cannot be assumed
```

#Q2. Find median satisfaction level for 'IT', 'Sales' and 'Finance'. Test whether the satisfaction level among three roles differ significantly

##A.

```
md_satlevel<-aggregate(satlevel~dept,data=emp_sat,FUN="median")
```

```
md_satlevel
```

```
kruskal.test(formula=satlevel~dept,data=emp_sat)
```

#Interpretation:Since p-value <0.05, satisfaction level among three roles differs significantly

#Q3. Is there any association between satisfaction level and experience level? Experience level is defined as midlevel (greater than 2 years) and Junior (less than or equal to 2 years)

##A.

```
emp_sat$explevel<-cut(emp_sat$exp,breaks=c(0,2,Inf),labels = c("junior","midlevel"))
```

```
library(gmodels)
```

```
CrossTable(emp_sat$satlevel,emp_sat$explevel,chisq = TRUE)
```

#Interpretation:Since p-value >0.05, there is no association between satisfaction level and experience level

#Q4. Find number of employees with satisfaction score greater than 3 in each department.

##A.

```
emp_sub<-subset(emp_sat,satlevel>3 )
```

```
table(emp_sub$dept)
```