JAYOTI VIDYAPEETH WOMEN'S UNIVERSITY, JAIPUR
Faculty of Law & Management

Faculty Name - JV'n Dr. Shahnawaz Alam

(Asst. Prof./Asso. Prof./Professor)

Program - BBA III SEM

Course Name - Research Method in Business

Academic Day starts with saying

'Namaste' by joining Hands together following by 2-3 Minutes Happy session, Celebrating birthday of any student of respective class and **National Anthem**.

Lecture Starts with Review of previous Session

Topic to Be Discussed Today: Test of statistical significance

A statistical test provides a mechanism for making quantitative decisions about a process or processes. The intent is to determine whether there is enough evidence to "reject" a conjecture or hypothesis about the process. The conjecture is called the null hypothesis. Not rejecting may be a good result if we want to continue to act as if we "believe" the null hypothesis is true. Or it may be a disappointing result, possibly indicating we may not yet have enough data to "prove" something by rejecting the null hypothesis. Hypothesis tests also address the uncertainty of the sample estimate. However, instead of providing an interval, a hypothesis test attempts to refute a specific claim about a

population parameter based on the sample data. Basically we have two types of Tests based parameters .

I.   Parametric Test: a statistical test in which specific assumption are made about the population parameter, is known as the parametric. These types of test Student t-Test, z-Test, Chi-square, F- test, correlation and ANOVA.

II. Non-Parametric Test: Non-parametric covers techniques that do not rely on data belonging to any particular distribution. These include distribution free methods, which do not rely on assumptions that the data are drawn from a given probability distribution. As such it is the opposite of parametric statistics. It includes non-parametric descriptive statistics, statistical models, inference and statistical tests. In hypothesis testing, non-parametric tests play a central role for statisticians and decision makers. Among various noteworthy researchers, statistical hypotheses concern the behavior of observable random variables. It is applied when no exact information about population.chi square test commonly used as non parametric test.

Difference between Parametric Test and non Parametric Test

Parametric Test	Parametric Test
1. Parametric test apply when data is normally distributed	1. Parametric test apply when distribution of data is skewed
2. Apply for quantitative data Scale of measurement is matrix scale (interval or ratio scale)	2. Apply for qualitative data
	3. Apply when measurement is nominal and ordinal scale
3. Compare mean and standard deviation of two groups.	4. Compare percentage and proportion
4. More powerful measurement	5. Less powerful measurement
5. Assumptions involved	6. Assumptions not involved

6. Mean value is central tendency Value	7. Median value is central tendency Value
7. Pearson method used for correlation	8. Spearman method used for correlation
8. Population knowledge is requires	9. Population knowledge is not requires
9. It is applicable for variable	10. It is applicable for variable or attributes
10. Test (t test , z test, f test, chi square test , correlation and ANOVA)	11. Test (Kruskal-Wallis method, Mann-Whitney method, Friedman's ANOVA and chi square test) NOTE: generally chi square test commonly used by researcher to measure of goodness of fit)

System for statistical analysis

- State the Hypothesis (Null hypothesis and Alternative hypothesis)
- State the level of significance
- Calculate the test statistic
- Compare the calculate test statistic with tabulated value
- Decision
- Statements of results

University Library Reference:

Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International

Online Reference:

1. Dahiru, T. (2008). P-value, a true test of statistical significance? A cautionary note. *Annals of Ibadan postgraduate medicine*, *6*(1), 21-26.

2. Shaver, J. P. (1993). What statistical significance testing is, and what it is not. *The Journal of Experimental Education*, *61*(4), 293-316.

Competitive questions from today topic (2 questions Minimum)-

A statement made about a population for testing purpose is called?

a) Statistic

b) Hypothesis

c) Level of Significance

d) Test-Statistic

A statement whose validity is tested on the basis of a sample is called?

a) Null Hypothesis

b) Statistical Hypothesis

c) Simple Hypothesis

d) Composite Hypothesis

Questions to check understanding level of students-

Discuss the meaning; importance and needs Test of statistical significance for research work