

QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS

- The strength (degree) of the correlation between a set of independent variables X and a dependent variable Y is measured by
- A) Coefficient of Correlation B) Coefficient of Determination C)
 Standard error of estimate D) All of the above
 - The percent of total variation of the dependent variable Y explained by the set of independent variables X is measured by
- A) Coefficient of CorrelationB) Coefficient of Skewness
- C) Coefficient of Determination
- D) Standard Error or Estimate
- E) Multicollinearity
- 3. A coefficient of correlation is computed to be -0.95 means that
- A) The relationship between two variables is weak
- B) The relationship between two variables is strong and positive
- C) The relationship between two variables is strong and but negative
- D) Correlation coefficient cannot have this value
- Let the coefficient of determination computed to be 0.39 in a problem involving one independent variable and one dependent variable. This result means that
- A) The relationship between two variables is negative
- B) The correlation coefficient is 0.39 also
- C) 39% of the total variation is explained by the independent variable
- D) 39% of the total variation is explained by the dependent variable
 - Relationship between correlation coefficient and coefficient of determination is that
- A) both are unrelated
- B) The coefficient of determination is the coefficient of correlation squared
- C) The coefficient of determination is the square root of the coefficient of correlation
- D) both are equal
- 6. Multicollinearity exists when

- A) Independent variables are correlated less than -0.70 or more than 0.70
- B) An independent variables is strongly correlated with a dependent variable
- C) There is only one independent variable
- D) The relationship between dependent and independent variable is non-linear
- If "time" is used as the independent variable in a simple linear regression analysis, then which of the following assumption could be violated
- A) There is a linear relationship between the independent and dependent variables
- B) The residual variation is the same for all fitted values of Y
- C) The residuals are normally distributed
- D) Successive observations of the dependent variable are uncorrelated
- In multiple regression, when the global test of significance is rejected, we can conclude that
- A) All of the net sample regression coefficients are equal to zero
- B) All of the sample regression coefficients are not equal to zero
- C) At least one sample regression coefficient is not equal to zero
- D) The regression equation intersects the Y-axis at zero.
- 9. A residual is defined as
- A) Y-Y^
- B) Error sum of square
- C) Regression sum of squares
- D) Type I Error
- 10. What test statistic is used for a global test of significance?
- A) Z test
- B) t test
- C) Chi-square test
- D) F test
 - 11. The correlation coefficient is used to determine:
- (A) A specific value of the y-variable given a specific value of the x -variable
- (B) A specific value of the x variable given a specific value of the y variable
- (C) The strength of the relationship between the x and y variables

- (D)None of these
 - 12.If there is a very strong correlation between two variables then the correlation coefficient must be
- (A) any value larger than 1
- (B) much smaller than 0, if the correlation is negative
- (C) much larger than 0, regardless of whether the correlation is negative or positive
- (D) None of these alternatives is correct.
 - 13.In regression, the equation that describes how the responsevariable (y) is related to the explanatory variable (x) is:
- (A) the correlation model
- (B) the regression model
- (C) used to compute the correlation coefficient
- (D) None of these alternatives is correct
 - 14.SSE can never be
- (A) larger than SST (B) smaller than SST (C) equal to 1 (D) equal to zero
 - Relationship between correlation coefficient and coefficient of determination is that
- A both are unrelated
- B The coefficient of determination is the coefficient of correlation squared
- C The coefficient of determination is the square root of the coefficient of correlation
- D both are equal
 - 16.In multiple regression, when the global test of significance is rejected, we can conclude that
- A All of the net sample regression coefficients are equal to zero
- B All of the sample regression coefficients are not equal to zero
- C At least one sample regression coefficient is not equal to zero
- D The regression equation intersects the Y-axis at zero.

- 17.In general, the expected frequencies per cell in the conduct of a Chi-Square test are those one would
- A. expect to find in a given cell if the null hypothesis were actually true
- B. expect to find in a given cell if either the null hypothesis or the alternative hypothesis were actually true
- C.expect to find in a given cell if the null hypothesis were actually false
- D. expect to find in a given cell if the alternative hypothesis were actually true
 - 18. The degrees of freedom for the Chi-Square test statistic when testing for independence in a contingency table with 4 rows and 4 columns would be

A. 5 B.9 C.7 D. 12

- 19. Which of the following statistical methods is appropriate to test whether or not there is sufficient evidence of a difference between the proportions of two related samples?
- A. Chi-Square test of independence B. Wilcoxon Rank Sum Test C. Kruskal-Wallis rank test D. McNemar Test
- 20. When using the chi-square test for differences in two proportions with a contingency table that has r rows and c columns, the degrees of freedom for the test statistic will be:

A.
$$(r-1)+(c-1).B.$$
 $n1+n2-2.C.$ $n-1.$ D. $(r-1)(c-1).$

- 21. An advantage of nonparametric statistics is that
- A. you need a computer to calculate them. B. they have many assumptions to meet.
- C. they are easy to calculate. D. they are very powerful
- 22. In most situations, parametric tests
- A. have the same power as nonparametric tests.
- B. are less powerful than nonparametric tests.

- C. are more powerful than nonparametric tests.
- D. are less sensitive than nonparametric tests.
- 23.If you have nominal data which nonparametric statistic should you use?
- A. Chi-square B. Spearman's rho C. the t-test D. Wilcoxon
- 24. Power of a test is related to
 - A. Type I error B. type II error C. both a and b D. none
- 25. Range of variance ratio, F is
 - A. -1 to +1 B. -∞ to ∞ C. 0 to ∞ D. 0 to 1
- 26.In one way classification of ANOVA the observations are classified into
 - A. two groups B. three Groups C. as many as required D. many group
- 27.In one way ANOVA the variance are
 - A. between samples B. within samples C. total D. all
- 28. Probable error is used for
 - A. measuring the error in r B. testing the significance of r C. both a and b
 - D. neither a nor b
- 29. Which one is not a non-parametric test
 - A. chi square test B. t test C. sign test D. rank test
- 30. Analysis of variance utilises
 - A. F test B. chi square test C. Z test D. t test
- 31. The idea of product moment correlation was given by
 - A. Fisher B. Francis C. Karl pearson D. Spearman
- 32. When r = 1 the correlation is
 - A. positively perfect B. perfect C. good D. normal
- 33. An analysis of covariance between two or more variable is
 - A. regression B. time series C. correlation D. coefficient of variation
- 34. Control chart is:
 - i. Process monitoring tool
 - ii. Process control tool
 - iii. Process planning tool
 - A. i only B. i & ii C. i, ii & iii D. None of the above
- 35. Estimation is possible only in case of a:
 - A. Par a meter B. Sample C. Random sample D. Population
- 36.Estimation is of two types:
 - A. One sided and two sided B. Type I and type II C. Point estimation and interval estimation

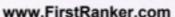
- D. Biased and unbiased
- 37. The level of confidence is denoted by

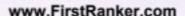
A. α B. β C. 1 - α D.1 - β

- Using the terminology of statistical control, the variation within a stable system
 - A. is random variation.
 B. results from common causes.
 - C. is predictable within a range. D. a and b. E. all of the above.
- Using the terminology associated with statistical process control (SPC), the variation within a stable system is
 - A. predictable within a range of values. B. controllable.C. in control.D. a and b. E. a and c.
- 40.Cluster sampling, stratified sampling and systematic sampling are types of A. direct sampling B. indirect sampling C. random sampling D. non random sampling
- Quota sampling, judgment sampling and convenience sampling are classified as types of
 - A. random sampling B. non random sampling C. direct sampling D. indirect sampling
- 42. Type of sampling In which each element of population has equally likely chance of occurrence in a random sample is classified as

A. regular and irregular sampling B. error free sampling C. inertia sampling D. simple random sampling

- 43. What is the advantage of using SPSS over calculating statistics by hand?
 A. It equips you with a useful transferable skill.
 - B. It reduces the chance of making errors in your calculations.
 - C. Many researchers use SPSS as it is a recognised software package.
 - D. All of the above.
- 44. What does the operation "Recode Into Different Variables" do to the data?
 A. Replaces missing data with some random scores.
 - B. Reverses the position of the independent and dependent variable on a graph.
 - C. Redistributes a range of values into a new set of categories and creates a new variable.
 - D. Represents the data in the form of a pie chart.
- 45.Malcolm Baldrige national quality award is for (MBNQA)
 - A. Total Quality Management B. International Standard Organization
 - C. Total Productive Maintenance D. Total Quality Control







- 46.TQM & ISO both focuses on
 - A. Customer B. Employee C. Supplier D. All of the above
- 47. Quantitative tools of TQM are
 - A. fishbone diagram B. paretto diagram C. both a and b D. none
- 48. Examples of control charts
 - A. mean chart B. range chart C. pie chart D. both a and b
- 49. Size of samples are
 - A. 29 or less B. 30 or more C. 50 or less D. 20 or less
- When the estimated value is a single specific value of population, it is called
 - A. point estimate B. time estimate C. interval estimate D. none