A regression model in which more than one independent variable is used to predict the dependent variable is called

What is multiple linear regression model?

Multiple linear regression is a **regression model** that estimates the relationship between a quantitative dependent variable and two or more independent variables using a straight line.
Feb 20, 2020

Select the correct option

- a simple linear regression model
- a multiple regression model
- a partial regression model
- a normal model

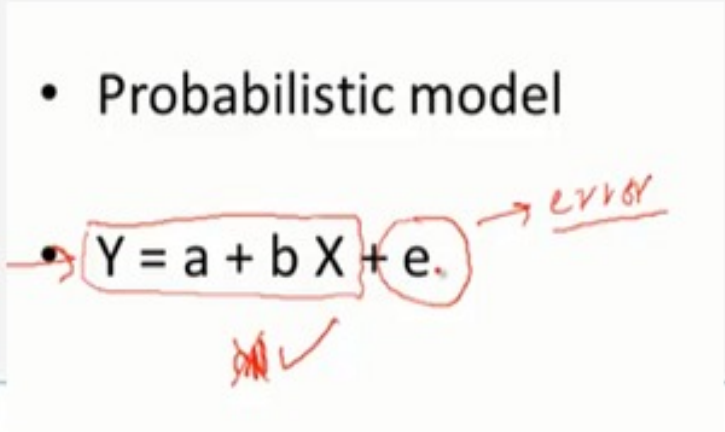
In regression analysis, the variable that is being predicted is the called:

Select the correct option

- independent variable
- intervening variable
- response, or dependent, variable
- is usually x

Question # 30 of 30 (Start time: 10:46:32 PM, 08 July 2020) Total Marks: 1

In which relationship model, the error term "e" is used.



Select the correct option

- Collective model
- Conversion model
- Deterministic model
- Probabilistic model

Question # 5 of 30 (Start time: 10:45:43 PM, 08 July 2020) Total Marks: 1

If X and Y are independent to each other, the coefficient of correlation is

If two variables are **independent** then the value of Kearl Pearson's **correlation** between them is found to be zero. Conversely, **if** the value of Kearl Pearson's **correlation** between two variables is found to be zero then the variables may not be **independent**.

Select the correct option

- -1
- +1
- 0
- 0.5

The difference between best-fit line and observed value is called _____ .

- If there is only one variable, the best prediction for other values is the mean of the "dependent" variable
- The difference between the best-fit line and the observed value is called the residual (or error)
- The residuals are squa[illegible]nd then added together to generate sum o[illegible](LITERALLY) residuals / error, SSE.

Select the correct option

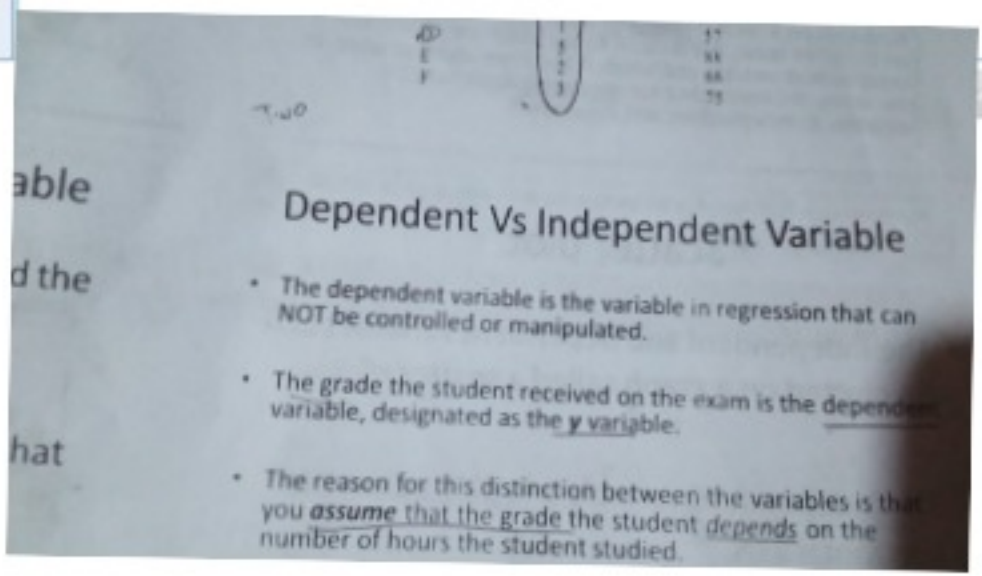
- Slop
- Intercept
- Residual
- Degree of freedom

Question # 17 of 30 (Start time: 10:57:19 PM, 08 July 2020) Total Marks:

In scatter plot, which variable is drawn on the y-axis?

Select the correct option

- Dependent variable
- Independent variable
- Normal variable
- Residual variable



Question # 16 of 30 (Start time: 10:56:08 PM, 08 July 2020) Total Marks: 1

In the equation of a straight line, Y = a + bX, if b is equal to -2 then:

Select the correct option

- There is no relationship between the two variables.
- There is perfect relationship between the two variables.
- There is a negative relationship between the two variables.
- There is a positive relationship between the two variables.

➢ Equation of a straight line: Y=a+bX

- Y and X are the dependent and the independent variable respectively and $y_1, y_2, \ldots, y_n$ and $x_1, x_2, \ldots, x_n$ their values
- a is the intercept. It determines the level at which the straight line crosses the vertical axis, i.e. it gives the value of y when x=0
- b measures the slope of the line
  - → Positive relationship: b>0
  - → No relationship: b=0
  - → Negative Relationship b<0

In simple regression analysis, we assume that the relationship between "x" and "y" is:

Select the correct option

- Linear
- Positive linear
- Negative linear
- Complex linear

All data points falling along a straight line is called:

Select the correct option

- Residuals
- Non linear relationship
- Linear relationship
- Scatter diagram

Regression analysis is widely used for the purpose of:

variable or explanatory variable. Regression analysis is widely used for Prediction & forecasting. The purpose of Regression analysis is to answer, Are two or more variables related? If so, what

Select the correct option

- Error diagnosis
- Prediction and forecasting
- Reference and Indexing
- Data collection and sampling

In multiple regression having two independent variables, what will be the total number of normal equation?

Multiple Linear Regressions With Two Regressor: -

For two independent Variable X_1 & X_2 the predicting equation for an individual Y value is $Y_i = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \varepsilon_i$ and the estimated multiple regressions based on sample data is $Y_i = a + b_1 X_{1i} + b_2 X_{2i} + \varepsilon_i$ for a set of n observations, each of which is a number (X_{1i}, X_{2i}, Y_i).

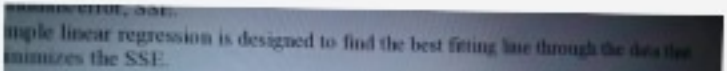
19

Select the correct option

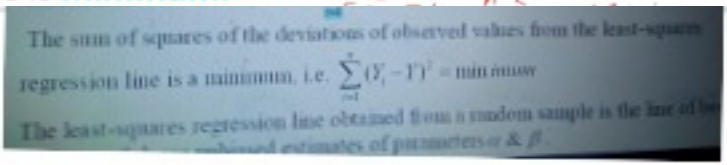
- 1
- 2
- 3
- 4

Question # 19 of 30 (Start time: 10:59:02 PM, 08 July 2020) Total Marks: 1

The method of least squares dictates that we choose a regression line where the sum of the square of deviations of the points from the line is:



- The sum of the squares deviations of the observed values of y from the LS regression line is **minimum.**



Select the correct option

- Maximum
- Minimum
- Zero
- Positive

Question # 6 of 30 (Start time: 10:46:54 PM, 08 July 2020) Total Marks: 1

The correlation coefficient between U = X and V = -X is

Select the correct option

- -1
- +1
- 0
- 0.5

Question # 9 of 30 (Start time: 10:49:33 PM, 08 July 2020) Total Marks:

In simple regression equation, the numbers of variables involved are:

Select the correct option

- 0
- 1
- 2
- 3

In the equation of a straight line, Y = a + bX, the term "b" is known as:

generally written as $Y_i = a + bX_i$,where a is the value of Y when X is zero, & is called Y-intercept, b indicates the change in Y for one unit change in X & is called the slope of the line.

Select the correct option

- Independent variable
- Intercept
- Dependent variable
- Slope

In multiple regression $Y = a + b_1X_1 + b_2X_2$; the variable Y is known as :

Select the correct option

- Independent variable
- Dependent variable
- Normal variable
- Multiple variable

- The **general form** of the multiple regression equation with ***k independent variables is***

$$\hat{Y} = a + b_1X_1 + b_2X_2 + \cdots + b_kX_k$$

- *Y is called DEPENDENT variable*
- *The x's are the independent variables.*
- *The b's are called partial regression coefficients.*
- *K is number of independent variables*

Question # 23 of 30 (Start time: 11:02:09 PM, 08 July 2020) Total Mark:

The least square regression equation is a line that is always passing through _____

The least square regression line always goes through the point $(\bar{X}, \bar{Y})$ means of data.

Select the correct option

Reload Math Equation

- the point (X, Y)
- the point (Y, X)
- the point $(\bar{X}, \bar{Y})$
- the point $(\bar{Y}, \bar{X})$

The partial correlation coefficient:

Partial Correlation-Main Points

- The Value of **r** can range from -1 to +1;

Select the correct option

- Can vary within the range from -1 to +1, inclusive
- Can be less than the 0
- Can vary within the range from 0 to +1, inclusive
- Cannot achieve an absolute value of unity

Question # 26 of 30 (Start time: 11:04:38 PM, 08 July 2020)
Total Marks:

Which one is the correct symbol of slop in a POPULATION regression line?

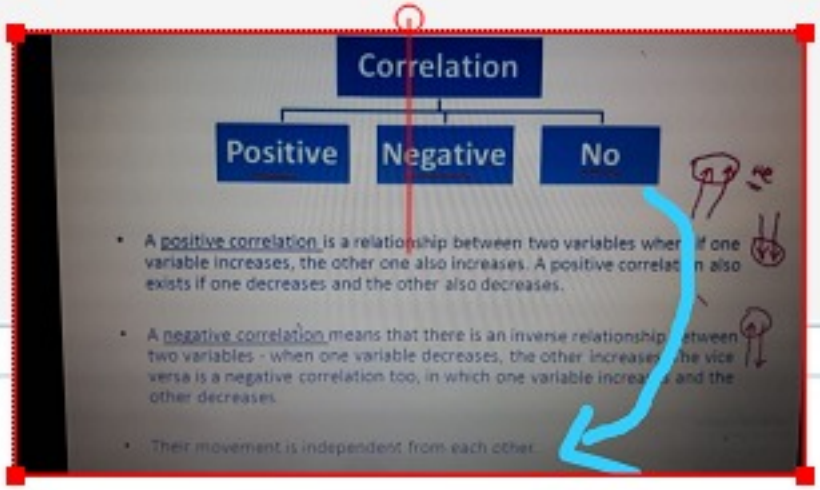
Here ε_i is randc

- The correlation coefficient computed from the sample data measures the **strength and direction** of a linear relationship between two variables.
- The symbol for the sample correlation coefficient is r.
- The symbol for the population correlation coefficient is (Greek small letter "rho").

Select the correct option

- r
- a
- ρ (rho)
- α (alpha)

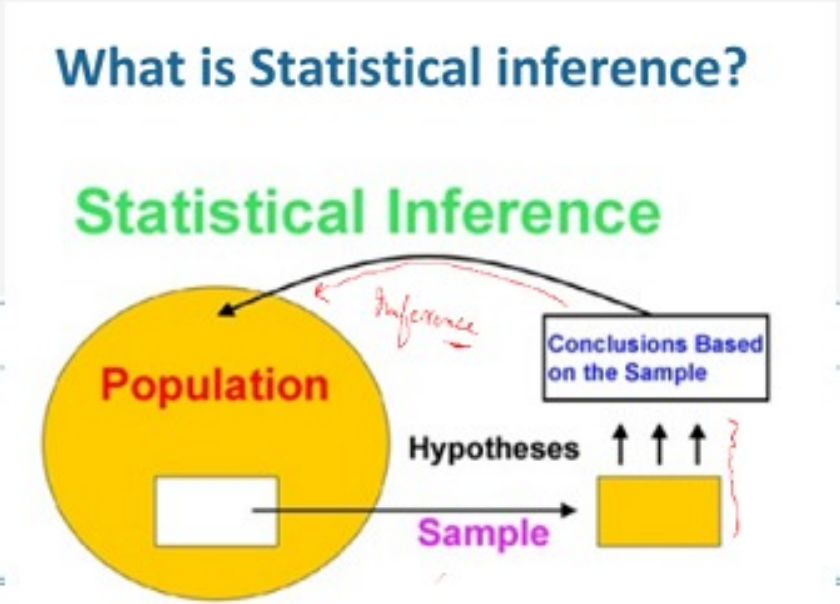
If the movement of two variables is independent from each other than there is



Select the correct option

- No correlation
- Positive correlation
- Positive and normal correlation
- Negative correlation

Making decision about population on the basis of information of the sample is called:



Select the correct option

- Statistical sampling
- Statistical thinking
- Statistical probability
- Statistical inference

Question # 30 of 30 (Start time: 11:07:26 PM, 08 July 2020)

Total Marks: 1

What is the value of slop in the regression line $Y = -3 - 2X$?

Select the correct option

Reload Math Equations

- -3
- -2
- 2
- 1

It is named as multiple regression because there are

Multiple Linear Regression Analysis
The technique of simple regression which involves one dependent variable & one independent variable is often inadequate in most real-world situations where a variable depends upon two or more independent variables or regressor. For example, the yield of a crop depends upon the fertility of the land, fertilizer

Select the correct option

- multiple dependent variables
- multiple independent variables
- multiple constants
- multiple coefficients

If the movement of two variables is independent from each other than there is

Select the correct option

- No correlation
- Positive correlation
- Positive and normal correlation
- Negative correlation

The negative correlation means that there is a _____ relationship between two variables.

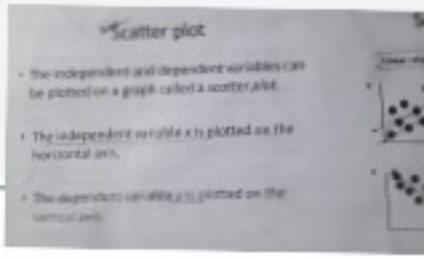
CORRELATION

Correlation, like covariance is a measure of degree to which any two variables vary together. Two variables are said to be correlated if they tend to vary simultaneously in some direction. If the both variable are increased or decreased in the same direction together the Correlation is said to be **Positive or Direct Correlation**, e.g. the length of iron bar will increase as the temperature increases. If one variable tend to increase as the other decreases, the correlation is said to be **negative or inverse**, e.g. the volume of gas decreases as the pressure increases. In correlation we

Select the correct option

- inverse
- weak
- strong
- no

In scatter plot, the independent variable is drawn on:



Select the correct option

- x-axis
- y-axis
- z-axis
- Can draw on any axis, it makes no difference.

Question # 3 of 30 (Start time: 11:16:51 PM, 08 July 2020)

The method of measuring rank correlation was developed by


Methods of Studying Correlation:

The following are the important methods of ascertaining between two variables.

- Scatter diagram method
- Karl Pearson's Simple Correlation Coefficient
- Spearman's Rank Correlation Coefficient

Select the correct option

- Spearman
- Karl Pearson
- Wilcoxon
- Fisher

Question # 7 of 30 (Start time: 11:19:30 PM, 08 July 2020)

In assumptions, we assume that there is _____ between "x" and error term "e".

- The errors terms (e_i, e_j) are **Independent** from each other. Also, "e" and "x" has no effect with each other.



Select the correct option

- no relationship
- Linear relationship
- Constant relationship
- Negative relationship

The range of the correlation coefficient is:

Range of correlation coefficient is from -1 to +1

Select the correct option

- -1 to 0
- 0 to 1
- -1 to 1
- 0 to 100

Which of the following values could not represent a correlation coefficient?

Select the correct option

- r = 0.99
- r = 1.09
- r = -0.73
- r = -1.0

Which of the following would not allow you to calculate a correlation?

Select the correct option

- a negative relationship between X and Y
- a positive relationship between X and Y
- a linear relationship between X and Y
- a curvilinear relationship between X and Y

Question # 4 of 30 (Start time: 11:09:17 PM, 08 July 2020) Total M

In multiple regression $Y = a + b_1X_1 + b_2X_2$; the variable Y is known as :

Select the correct option

Reload Math Eq

- Independent variable
- Dependent variable
- Normal variable
- Multiple variable

Click to Save Answer & Move to Next Question

Question # 10 of 30 (Start time: 11:21:46 PM, 08 July 2020)

In a regression and correlation analysis, if Coefficient of Determination CoD = 1, then which equation is true?

Select the correct option

- SSE = SST
- SSE = 1
- SSR = SSE
- SST = SSR

It is named as multiple regression because there are

Select the correct option

- ○ multiple dependent variables
- ◉ multiple independent variables
- ○ multiple constants
- ○ multiple coefficients

Question # 14 of 30 (Start time: 11:23:59 PM, 08 July 2020)

Multiple regression analysis is used when

Select the correct option

- there is not enough data to carry out simple linear regression analysis.
- the dependent variable depends on more than one independent variable.
- one or more of the assumptions of simple linear regression are not correct.
- the relationship between the dependent variable and the independent variables cannot be described by a linear function.

The larger value of Coefficient of Determination imply that the observations are more closely grouped about the _____ of _____ .

Select the correct option

- average value of the independent variables
- average value of the dependent variable
- least squares line
- origin

We can apply the rank correlation

Select the correct option

- when ranks are in acceding order only.
- when ranks are in descending order only.
- when ranks are in alphabetical order only.
- when ranks are in any order.

The least square regression equation is a line that is always passing through _____ .

Select the correct option

- the center of the data
- the maximum value of the data
- the minimum value of the data
- Lower and upper values of the data

Question # 11 of 30 (Start time: 11:26:54 PM, 08 July 2020)

Multiple correlation study the effect of _____ independent variable(s) simultaneously on the dep

Select the correct option

- all
- one
- few
- main

Question # 19 of 30 (Start time: 11:28:35 PM, 08 July 2020)

A coefficient of correlation is computed to be -0.95 means that

Select the correct option

- The relationship between two variables is weak
- The relationship between two variables is strong and positive
- The relationship between two variables is strong but negative
- Correlation coefficient cannot have this value

Question # 24 of 30 (Start time: 11:27:58 PM, 08 July 2020) Total Mark

How many dependent variable(s) may appear in a multiple regression?

Select the correct option

- 0
- 1
- 2
- 3

The Karl Pearson's method is to measure the correlation coefficient based on the assumption that population being studied is _____ .

Select the correct option

- normally distributed
- equally distributed
- highly skewed distributed
- moderately skewed distributed

The Karl Pearson's method is to measure the correlation coefficient based on the assumption that population being studied is _____ .

In simple linear regression, the model assumes that for each value of x the observed values of the response variable y are normally distributed with a mean that depends on x. We use μy to represent these means. We also assume that these means all lie on a straight line when plotted against x (a line of means).

11:26

Select the correct option

- normally distributed
- equally distributed
- highly skewed distributed
- moderately skewed distributed

In simple regression analysis, we assume that the relationship between “x” and “y” is:

In simple linear regression, the model assumes that for each value of x the observed values of the response variable y are normally distributed with a mean that depends on x. We use μy to represent these means. We also assume that these means all lie on a straight line when plotted against x (a line of means).

11:01 PM

Select the correct option

- Linear
- Positive linear
- Negative linear
- Complex linear

In a regression analysis, if SSE = 200 and SSR = 300, then what is the value of coefficient of determination?

Select the correct option

- 0.6667
- 0.6000
- 0.4000
- 1.5000

Question # 30 of 30 (Start time: 11:33:31 PM, 08 July 2020) Total Marks:

The Karl Pearson's method is to measure the correlation coefficient based on the assumption that population being studied is _____ .

Select the correct option

- normally distributed
- equally distributed
- highly skewed distributed
- moderately skewed distributed

A perfect negative correlation is signified by

This is an indication that both variables move in the opposite direction. In short, any reading between 0 and -1 means that the two securities move in opposite directions. When ρ is -1, the relationship is said to be perfectly negatively correlated

11:09 PM

Select the correct option

- 0
- 1
- 0.5
- -1

With only one variable, and no other information, the best prediction for the next measurement is the _____ of values itself.

- If there is only one variable, the best prediction for other values is the mean of "dependent" Variable.
- The difference between the best fit line & the observed value is called the residual (e

Select the correct option

- mean
- regression
- sample
- maximum

The multiple correlation coefficient R:

In statistics, an index of how well a dependent variable can be predicted from a linear combination of independent variables. It ranges from 0 (zero multiple correlation) to 1 (perfect multiple correlation), and the value of R2 is the coefficient of determination

11:19 PM

Select the correct option

○	Can vary within the range from -1 to +1, inclusive
○	Can be less than the 0
○	Can vary within the range from 0 to +1, inclusive
○	Cannot achieve an absolute value of unity

Question # 4 of 30 (Start time: 10:44:57 PM, 08 July 2020)

Sales of a company depends on

Select the correct option

- Price
- Demand
- Advertisement
- All of the given option

In regression analysis, we need to find the values of:

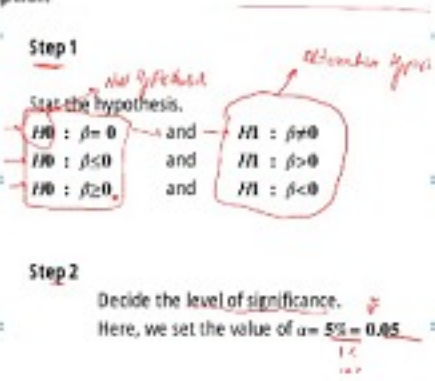
Select the correct option

- a and b
- a and x
- b and y
- x and y

Question # 1 of 30 (Start time: 10:41:42 PM, 08 July 2020)

Which null hypothesis is not correct?

Select the correct option



- $H_0 : \beta = 0$
- $H_0 : \beta \leq 0$
- $H_0 : \beta \geq 0$
- $H_0 : \beta \neq 0$

In simple linear regression, the number(s) of unknown constants is/are:

In simple linear regression, the number of unknown constants are :Two The line of regression of y on x is given by y = a + bx where

Select the correct option

- One
- Two
- Three
- Four

To check how well does the estimated regression fit the our data, we use _____ .

Select the correct option

- Coefficient of Determination
- Coefficient of Regression
- Coefficient of fitness
- Coefficient of variation

Click to Save Answer & Move to Next Question

For which correlation type, there is no need for any assumption.

Select the correct option

- Simple correlation coefficient
- Multiple correlation coefficient
- Rank correlation coefficient
- Partial correlation coefficient

The correlation coefficient is used to determine:

Select the correct option

- A specific value of the y-variable given a specific value of the x-variable
- A specific value of the x-variable given a specific value of the y-variable
- The strength of the relationship between the x and y variables
- Dependence of one variable on other variable

What value of level of significance is most frequently used in hypothesis testing?

Using **5% level** of significance, test the hypothesis that the intercept of regression line, α is zero.

Select the correct option

- 1%
- 5%
- 10%
- 20%

Total Marks:

On the graph, the shape of the linear correlation looks like a

Select the correct option

- line
- curve
- U shape
- V shape

In the equation of a straight line, Y = a + bX, the term "b" is known as:

Select the correct option

- Independent variable
- Intercept
- Dependent variable
- Slope

Question # 9 of 30 (Start time: 11:25:31 PM, 08 July 2020)

In the following relationships, which one is the example of exact relationship?

Select the correct option

- Temperature in Fahrenheit and Celsius
- Weight and height
- Summer and ice cream sale
- Study and marks

Question # 17 of 30 (Start time: 11:21:55 PM, 08 July 2020) Total Marks: 1

In regression and correlation, "error" values are also called:

Select the correct option

- Residuals
- Restrictions
- Variations
- Observations

In least squares regression, which of the following is NOT a required assumption about the error term "e"?

- The mean of the responses is a **Linear function**
- The errors are **Independent**.
- The errors are **Normally distributed**.
- The errors have **Equal variances** (denoted σ^2) for all x values.

LINE

Select the correct option

- The expected value of the error term is one.
- The variance of the error term is the same for all values of x.
- The values of the error term are independent.
- The error term is normally distributed.