

DEPARTMENT OF PSYCHOLOGY
PATNA UNIVERSITY, PATNA
STATISTICS FOR PSYCHOLOGY, SEM.2

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- 'b' coefficient is the slope of regression line(line of best fit).
- The error of prediction will have mean of zero'0' and variance would remain square of standard deviation.

Linear regression equation:

$$Y = a+bx$$

B= regression equation

Multiple regression equation:

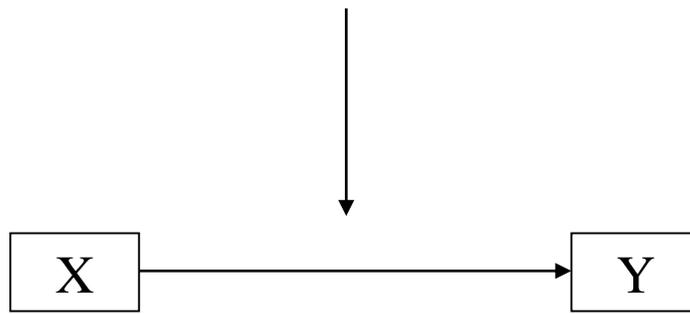
$$Y = b_0 + b_1x_1 + b_2x_2 + \dots\dots\dots$$

B0= partial regression equation

In the simplest way, we can say regression analysis helps us to estimate or understand the probability of causation from the simple correlational data.

Moderation in Regression

Moderator variables influence the strength or direction of relation between an independent variable (IV) and a dependent variable (DV). Objective of the moderator variable is to measure M length of the relationship between the IV & DV.



Y= Dependent Variable

X= Independent Variable

M= Moderator Variable

$$Y = b_0 + b_1 X + b_2 M + b_3 (X \times M)$$

Interaction

Two types of moderation (Interaction)

1. Categorical (Moderator : Nominal)
2. Continuous (Moderator : Ratio)

1. Categorical Moderator

$$Y = b_0 + b_1 X + b_2 M + b_3 (X \times M)$$

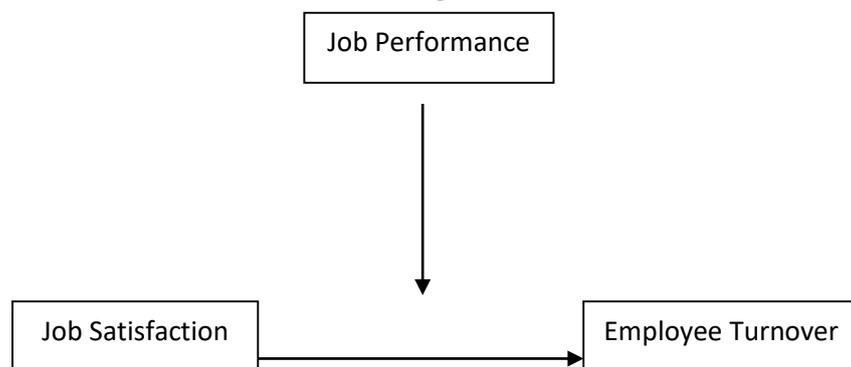
Interaction

Porter's Theory of Job Satisfaction

Y = Employee Turnover

X = Job Satisfaction

M = Job Performance (Low or High)



Y (Employee turnover) = $b_0 + b_1$ (Job Satisfaction) + b_2 (Job performance) + b_3 (Job Satisfaction X Job Performance)

Interaction

1. Simple Regression Analysis

Y (Employee turnover) = $b_0 + b_1$ (Job Satisfaction)

2. Independent t-test

$$\mathbf{Y \text{ (Employee turnover)} = X \text{ (Job performance)}}$$

3. ANCOVA(Analysis of Covariance)

$$\mathbf{Y \text{ (Employee turnover)} = b_0 + b_1 \text{ (Job Satisfaction)} + b_2 \text{ (Job performance)}}$$