

One Way MANOVA

Two Dependent Vars are 1. Anxiety Score(Y1) 2. Depression Score(Y2)

Factor – University (3 levels)

Normality – p-value > level of sign then data is normal distributed

Observe that data is partially normal – Pillai's Trace

Multicollinearity

Observe that the correlation co-eff 0.259 < .3 therefore data is free from multicollinearity

Let $Y = Y1 + Y2$ be the linear combination of the dependent vars

Null: There is no sign diff between the population means for the linear combination of the dependent vars w.r.t 3 universities

Alternative: There is a sign diff between the population means for the linear combination of the dependent vars w.r.t 3 universities

Assume 5% level of sign

Pillai's Trace (0.000...) < 0.05 – Rejecting the null hypothesis at 5% level of sign

Conclusion: There is a sign diff between the population means for the linear combination of the dependent vars w.r.t 3 universities

Two Way MANOVA

Two Dependent Vars are 1. Anxiety Score(Y1) 2. Depression Score(Y2)

Two Factors – University (3 levels) Gender (2 levels)

Normality – p-value > level of sign, then data is normal distributed

Observe that data is normal – Wilk's Lamda

Multicollinearity

Observe that the correlation co-eff 0.418 which is moderate positive correlation (<0.9) therefore data is free from multicollinearity.

Let $Y = Y1 + Y2$ be the linear combination of the dependent vars

Null(1): There is no sign diff between the population means for the linear combination of the dependent vars w.r.t 3 universities

Null(2): There is no sign diff between the population means for the linear combination of the dependent vars w.r.t 2 gender

Null(3): There is no sign diff between the population means for the linear combination of the dependent vars w.r.t joint effect of the 3 universities and 2 gender

Assume at 5%

Wilk's Lambda (University) = .108 > 0.05 – Cannot Reject Null (1)

Conclusion: There is no sign diff between the population means for the linear combination of the dependent vars w.r.t 3 universities

Wilk's Lambda (Gender) = .200 > 0.05 – Cannot Reject Null (2)

Conclusion: There is no sign diff between the population means for the linear combination of the dependent vars w.r.t 2 genders

Wilk's Lambda (Joint Effect) = .042 < 0.05 – Reject Null (3)

There is a sign diff between the population means for the linear combination of the dependent vars w.r.t joint effect of the 3 universities and 2 gender

Simple Linear Regression Model

1. Dependent Var – Manpower(Y); Independent Var – Number of Sales Offices (X); $Y=a+bX$
 $Y= 0.241 +16.05 (X)$

Estimate Manpower for 2015 target is to have 43 sales offices i.e. $X=43$

$Y=0.241+16.05(43) = 690.4$ (Appro 690)

R2 value is .986 (98.6% changes that are taking place in manpower estimation are explained by the changes in the values of sales offices)

Std. error: 12.3 (Prediction can have over or underestimate of 12.3 units)

Test for Sign: Model is significant (Good for prediction) if p-value of ANOVA < level of sign
p-value is 0.000....<0.05 therefore the model is significant (Robust for prediction)

