Case study: Credit card promotion

Continuous data = purchases i.e. Y is continuous

No of groups = FWI, SCA i.e. X is two discrete samples

Step 1: Go to the graph and refer graph flow to decide the test to be done

Normality test (FWI):

H0: Data is normal

Ha: Data is not normal

Action: Make data normal

p-value = 0.2246

p>0.05 i.e. p high null fly i.e. let h0 fly i.e. fail to reject h0

conclusion: Data is assumed to be normal

Normality test (SCA):

H0: Data is normal

Ha: Data is not normal

Action: Make data normal

p-value = 0.1916

p>0.05 i.e. p high null fly i.e. let h0 fly i.e. fail to reject h0

conclusion: Data is assumed to be normal

Kindly go back and check the flowchart

Next checkpoint: External conditions are same? No (both samples are different)

Next checkpoint: Are variances equal?

Equality of variance:

H0: Is Var (FWI) = Var (SCA) -> Var (FWI)/Var (SCA) =1

Ha: Is Var (FWI) ≠ Var (SCA) -> Var (FWI)/Var (SCA) ≠1

p-value = 0.653

p>0.05 i.e. p high null fly i.e. let h0 fly i.e. fail to reject h0

conclusion: Variances are assumed to be equal

Final test from flow chart: 2 sample T for equal Variances

H0: Avg Pur (FWI) = Avg Pur (SCA)

Ha: Avg Pur (FWI) ≠ Avg Pur (SCA)

p-value = 0.02423

p<0.05 i.e. p low null go i.e. let h0 go i.e. reject h0

Conclusion or action: Average purchases across both promotional are not equal

But it won’t help completely so I need to check which is more and which is less

H0: Avg Pur (FWI) <= Avg Pur (SCA)

Ha: Avg Pur (FWI) > Avg Pur (SCA)

p-value = 0.01211

p<0.05 i.e. p low null go i.e. let h0 go i.e. reject h0

Conclusion: Avg Pur of FWI > Avg Pur of SCA

**Imp takeaway: Where ever there is null hypothesis there is assumption**