CASE :

Is there any different response on these two promotions between Starbucks customers in different age groups?

A. 50% off	B. Buy one ,get one free (BOGF)
	

Target Group :

Starbucks Customer in 3 age Starbucks Customer in 3 age ranges

1) 20 - 30
2) 30 - 40
3) 40 - 50

A/B Testing Process :

See in **Note A.**

A/B Result :

There is no different response on these two promotions between Starbucks customers in different age groups

Note A :

A/B Testing on Promotion

Starbucks User by Age Group

1 H0 : The population proportion of people who will choose promotion are the **same**
H1 : Not Ho

2 Alpha 0.05

3 **Oij : Starbucks Promotion Observation**

Choose ?	50% Off (j=1)	Buy one get One free (j=2)	Total
20-30	5	1	6
30-40	7		7
40-50	1	1	2
	13	2	15

Pi
0.4
0.466666667
0.133333333
1

Ei

Choose ?	50% Off	BOGF
20-30	5.20	0.80
30-40	6.07	0.93
40-50	1.73	0.27

(Oij-Eij)^2/Eij

Choose ?	50% Off	BOGF
20-30	0.01	0.05
30-40	0.14	0.93
40-50	0.31	2.02

k 2

m 3

4

Chi Square	3.46	=sum ((Oij-Eij)^2/Eij)
Degree of Freedom	2	=(k-1)*(m-1)
Critical Value	5.9915	=CHISQ.INV.RT(0.05,**DF**)
P- Value	**0.1771**	=1-CHISQ.DIST(**ChiSquare**,**DF**,TRUE)
P Value > 0.05 **>>>**	**Do not reject H0**	

5 **Conclusion :**

The population proportion of people who will choose 2 types of promotion is not **differnce** from the others at significant level 0.05