

Q1. Assume you work for a client who has recently done some changes to his website's landing page. The objective behind these changes is to increase traffic to the "payments page". The design changes were made on 1<sup>st</sup> December. Use the data.csv to answer the following

(i) Is it possible to do a paired t test on the data?

(ii) Based on the data what can be said about the traffic pattern post design changes?

Q2. A certain client is worried about the bounce rates on the payments page of his website. The client believes that platform used and the geography of the visitors has an impact on the bounce rate. Take a look at the data1.csv and help your client make some conclusions based on the data.

Q3. Assume one of your clients wants to understand the effectiveness of his campaign across 4 channels: Youtube, Facebook, Google and Yahoo. He collects data on CTR on these channels for 15 days. Are all advertising channels equally effective?

YouTube	Facebook	Google	Yahoo
0.201947	0.162873	0.348631	0.052876
0.23006	0.191531	0.178958	0.09679
0.346935	0.174132	0.213008	0.06665
0.079646	0.221786	0.334882	0.081001
0.219418	0.236989	0.300493	0.017403
0.030293	0.290343	0.430847	0.054673
0.303926	0.239681	0.205256	0.059221
0.183762	0.185492	0.298662	0.133836
0.076038	0.18979	0.419938	0.232227
0.195367	0.167196	0.290715	0.055935
0.075236	0.193577	0.331393	0.138207
0.250078	0.013521	0.251345	0.179143
0.255781	0.227743	0.608798	0.050658
0.102194	0.149609	0.303225	0.186843
0.048679	0.18698	0.176381	0.20306

Q4. A retailer wants to understand the reasons behind failed payments on his website. He collects data on the failed transactions in past 20 days. Look at the data in data3.csv and help this retailer to come up with some insights.

Q5. An advertising firm is trying to determine the demographics for a new product. They have surveyed randomly selected 75 people in different age group and the following are the result (use chi square test to make a conclusion):

	20-30	30-40	40-50	50-60	60-70
Purchased	30	43	46	46	62
Not purchased	45	32	29	29	13

What is the conclusion at 0.05 significance level?

Q6. The general manager of a company believes that the sales are being affected by age in two different cities. The following is the data:

Age	City A	City B
20-40 yrs.	383	415
	408	398
	369	386
	375	391
40-60yrs	289	300
	356	322
	305	310
	305	293
60 and above	250	237
	263	280
	259	279
	246	282

What can be concluded at 0.05 significance level?