



JIGSAW ACADEMY  
THE ONLINE SCHOOL OF ANALYTICS

## Business Statistics: Graded Assignment

Notes: Please use Excel to solve the assignment. All of the questions are based on the associated dataset: Graded Assignment Dataset – Statistics.xlsx

Please find the datasets below this document in LMS or you can also find the same in the Lab.

Please find the path below:

C:\Data Science with R\Assignments\Graded Assignments\Topic 4.2 Statistics in Business

An ecommerce retailer wants to run some promotional tests on its products, categories and therefore wants to understand current behaviour better to plan and execute the promotions.

A random sample of approx. 100 transactions has been obtained for an initial assessment. First step is to assess sample representativeness, and the next to understand behaviour based on sample.

Please answer the following questions, based on the sample provided:

Q1: The average revenue per transaction in the population is Rs 614. Based on this attribute only, would you be confident that this sample is representative of the population? (5 points)

Hint: Is the sample average different from the population average? If yes, how different based on statistical significance? Please note that sample size > 100

Q2: The average order rate (Orders with revenue > 0) is 58% in the population. How likely is it that the observed sample order rate or greater is because of random chance? (5 points)

Hint: The order rate is based on a variable that has 1/0 values. We want to compare the order rate of sample vs the order rate in the population and then to find out the likelihood of seeing the sample order rate simply because of randomness

Q3: Is there a significant difference in average time spent on the site between visitors that come in on Mondays only vs Sundays only? (5 points)



JIGSAW ACADEMY  
THE ONLINE SCHOOL OF ANALYTICS

Hint: This will require some data subsetting or filtering to identify customers that are on the site on Mondays (only!) and Sundays (only!)

Q4: What is the likelihood that based on this sample, a random customer will add at least 3 products to his cart in a visit? (5 points)

Hint: What is the average number of products in the cart in the sample?

Q5: Is there a difference in time spent on the website between customers from the NCR region, Mumbai, and Bangalore? (5 points)

Hint: Multiple sample test, and time spent is a continuous variable

Q6: These are the order counts (for successful orders) by category for three cities: Mumbai, Bangalore, Chennai. Is there an association between location and category? (5 points)

	Home	Fashion	Electronics	Jewellery
Mumbai	15	18	12	4
Bangalore	12	22	10	6
Chennai	26	12	9	3

Q7: One of the new members of your team has suggested that local offers and regional offers are one way of attracting more customers. Should you try to build a localization strategy? (10 points)