Graded Homework #3 : Part 1

Started: Apr 9 at 10:46pm

Quiz Instructions

Graded Homework #3 - Part 1 covers the topics in **Weeks 8, 9, 10, 11 and 12** and is worth **6% of your overall grade**. You may work on the homework for as long as you like within the given window. Please note that your answers will automatically save as you key them. As long as you do not click submit, you can enter and exit the assignment as many times as necessary during the time period that it is available. Again, please note, **you should only click "submit" when you are completely finished with the assignment and ready to submit it for grading**.

Also, please remember that you are to complete this assignment on your own. Any help given or received constitutes cheating. If you have any general questions about the assignment, please post it to the Piazza board. **If your question involves specific references to the answer to a question or questions, please be sure to mark your post as private**.

Good luck!

Question 1 — 5 pts

The “Value” factor belongs to which of the following category of factors?

- ○ Macroeconomic Factors
- ○ Statistical Factors
- ◉ Fundamental Factors

Question 2 — 5 pts

In Factor Regression, what does the intercept tell us?

- ○ A. Fund’s excess return above the risk free rate
- ◉ B. Fund manager’s performance

- C. Quantifies the risk of the fund
- D. The traditional market beta

Question 3

5 pts

Which of the following statements **is correct** with respect to Bounce Rate?

- Bounce Rate gives an indication of the proportion of visitors who did not interact with the website.
- Bounce Rate tells us how long, on average, visitors are staying on our website.
- Bounce Rate increases when someone loads a page and decreases after 30 minutes of inactivity.
- A high Bounce Rate generally indicates that the website entrance pages are very relevant to the website's visitors.

Question 4

5 pts

In which scenario will you not be able to run a successful A/B test on a landing page of a website?

- Changing website's background color to attract more visitors, with all else unchanged
- Enlarging the website's sign-up button to increase the new leads, with all else unchanged
- Redesigning the whole website at once, including logos, images, background color, headings and button designs
- In all cases above, the website can be improved through A/B testing

Question 5

5 pts

The objective of Conversion Rate Optimization (CRO) is to:

- ○ Increase number of website visitors
- ○ Increase website sales
- ○ Enhance engagement
- ◉ All the above

Question 6

5 pts

A website that uses Google Analytics wants to know the percentage of visitors that do not interact with the website. Which metric should be used?

- ○ Page per sessions
- ○ Pageviews
- ○ Users
- ◉ Bounce Rate

The following questions can be answered using case study: Chase

Question 7

5 pts

In the Chase case, Chase segmented customers based on the types of rewards they preferred. Which segmentation strategy does Chase use?

- ○ Behavioural method
- ◉ Demographic method

- Psychographic method

Question 8

5 pts

A complete economics of credit card transaction includes:

- Card Issuer; Merchant Acquirer; Merchant
- Card Issuer; Cardholder; Merchant Issuer; Merchant
- Card Issuer; Cardholder; Merchant; Merchant Acquirer; Credit Card Network
- Card Issuer; Cardholder; Merchant; Merchant Issuer; Credit Card Network

The following questions are based on the **Advertising** dataset (**Advertising_Updated.csv**). The sales are in thousands of units, while the advertising budgets (TV, Radio, Newspaper) are in thousands of dollars.

Load the data as following:

```
ad = read.csv('P:\\6203 TA\\Advertising_Updated.csv')
```

Run the following linear regression model:

```
lm <- lm(Sales~., data=ad)
```

Question 9

5 pts

Now that we have our linear regression model, let's try to make a prediction for the sales given a new set of advertising budgets as follows:

```
new.dat <- data.frame(TV=200, Radio=10, Newspaper=20)
```

You are required to report the predicted sales as well as the lower and upper bound for the 95% **prediction** interval. What will you report?

- The predicted sales value is $13,543.06, with a 95% prediction interval of $10,210.25 and $16,875.87.
- (•) The predicted sales value is $13,956.37, with a 95% prediction interval of $10,613.31 and $17,299.43.
- The predicted sales value is $15,852.04, with a 95% prediction interval of $12,508.44 and $19,195.64.
- The predicted sales value is $9,379.90 with a 95% prediction interval of $6,038.61 and $12,721.20.

Question 10

5 pts

Which form(s) of media contribute (are related) to sales?

- TV
- Newspaper
- TV and Newspaper
- (•) TV and Radio
- TV, Radio, and Newspaper

A popular vegan restaurant is known to have long waiting lines from 12-2 pm in the afternoon. Recently, due to an increase in the demand, the amount of time that customers wait in the queue has increased. The manager does not want to lose customers due to this and hence decides to set up another counter to increase the overall service rate. The arrival rate has increased to 58 customers/hour. The current service rate with 4 counters in the restaurant is 60 customers/hour.

Question 11

5 pts

What is the average amount of time customers will wait in line under the current scenario? (in minutes)

- 19 minutes
- 25 minutes
- 29 minutes
- 33 minutes

Question 12

5 pts

On average, how many customers will be waiting in the queue after the manager introduces another counter? Total service rate with 5 counters is 65 customers/hour. (Round to the nearest integer)

- 5
- 7
- 9
- 11

Quiz saved at 11:58pm

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