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INFO 3401

Problem Set 5

**Monday:**

1. Starbucks wants to evaluate whether their mobile pay solutions are having a positive impact on customer service. Outline how they might collect data to answer this question using:
   1. **An observational study:** In this case, it may be useful to observe a Starbucks store that either hasn’t implemented the mobile pay system or has disabled it for the day as well as a Starbucks that does have the mobile pay system. As an observer, you can compare the perceived experiences of customers at at the two different stores.
   2. **Focus Groups:** Holding an “impromptu” focus group in a Starbucks that has a mobile payment system would be effective in getting feedback from customers while the purchasing experience is fresh in the mind and they can retrieve those emotions easier. It would also be useful to conduct a focus group with Starbucks employees to get their feedback on what effects they think that the mobile pay solutions have had on customer experience.
   3. **Online Survey:** Many people come to Starbucks to use the WiFi and an online survey inserted into the WiFi connecting experience could help quickly gather opinions that are fresh on the customer’s mind as they have just sat down with their coffee and their laptop. This method would be useful in getting data on predefined metrics that the research team is interested in.

**Wednesday:**

1. (a) How does seeing posts on Facebook affect a user’s emotion and the sentiment of what they post on Facebook. (b) Independent variables: the content that is shown to the user. (c) Dependent variables: the emotions of the user and what they end up posting on Facebook after encountering the other content in their feeds.
2. 1. A questionnaire would be best to determine the perceptions of a social media campaign.
   2. Assessing the effectiveness of a web redesign would be best achieved by using a combination of observations and experiments.
   3. Simulations or Archival data would be useful in this case as there is a lot of historic pricing and sales data that is available
3. 1. Research Question: How effective was this social media campaign?

In this case a survey or interview study would work best to gather data. A survey would be most useful to cast a wide net and get as many perceptions as possible. The questions asked on a survey like this would use Likert scales to assign a metric to the perceptions of the campaign. This would make the data easier to analyze statistically. Interview study would be useful for gathering emotional perceptions and in depth data. This data would be analyzed by coding of the interviews to find consistencies and different between different participants.

* 1. Research Question: Did this web redesign make the user experience faster and more efficient?

Collecting log data from before and after the web redesign would allow us to get a view of response times and efficiency from before and after the redesign was conducted. By using these methods, we could gain quantitative data that can be statistically analyzed to prove whether or not the redesign was “effective”. In-person user observations could also be used in this case. Observing someone using the website before and after the redesign could produce qualitative data from the user’s reactions or comments while they use the site.

* 1. Research Question: Are people buying or skipping the next iPhone?

There are a variety of factors that go into whether or not an iteration of the iPhone will be successful. Some of those are Apple’s marketing campaign efforts, news sentiment, what types of features are being added, price and when the new phone will be available. We could use this data to run simulations using the parameters of the new iPhone and the sentiment surrounding it to get a better idea of whether or not it will live up to its hype. For example, iPhone sales have recently been declining so Apple is raising the price to make sure they still turn a profit on the product line. Historic sales data could be used to gauge how many people might buy the phone based on previous sales and pricing data.

1. Data fusion would enable us to capture the text messages, phone calls, live conversations and location of individuals. All of this could be obtained through the sensors built into a smartphone. The key data that would be needed is location data from the phone and the contents of any communication between them and other people. Content analysis on text messages or phone calls fused with spatial analysis of GPS data would allow us to draw conclusions about how the content and topics of messages changes based on location. This data would also allow is to see what forms of communication people prefer in different situations.