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Problem set 5

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:

First of all, I would try to figure out what they define as “having a positive impact” and what measures we’re going to use to operationalize that.

A. An Observational Study

For an observational study, they could observe how many customers choose to use mobile pay solutions as opposed to those who don’t. They could also observe how many times those people who use mobile pay solutions return to Starbucks as opposed to how many times those who don’t use mobile pay return to Starbucks. If those people who use mobile pay return to Starbucks more often, it could be said that perhaps mobile pay solutions are having a positive impact on customer service.

B. Focus Groups

For this method, I would start by arranging for 4 focus groups (2 groups who use the mobile pay solutions and 2 groups that don’t use them). I would then ask the same set of questions to both groups regarding their experiences paying for their drinks at Starbucks. Questions that could be worth asking could be: do you find it easy to pay for your drink with the method you choose? Is there a reason why you chose to use that particular method? What do you like/dislike about that method, if anything at all?

Then take their statements and see how the two groups’ responses differ. Examine what the overall sentiment of these groups are about their payment methods. If it appears like the “mobile pay using” group is happier than the “non-mobile pay using group”, then it can be determined that, yes, the mobile pay option is having a positive impact.

C. An Online Survey

Create an online survey using a platform like Qualtrics and distribute it to customers. First, ask them whether they use the mobile pay solutions at Starbucks to separate out those people who use it vs those who don’t using branching logic. Then follow up with questions asking about their levels of satisfaction with customer service, wait times, and level of satisfaction with the mobile payment system. After collecting responses, analyze the differences between the two groups using the first question (whether or not they use mobile pay solutions) as a filter. If you find a correlation with more positive responses regarding customer service with the use of mobile pay solutions, you could reasonably assume that mobile pay solutions have a positive effect on customer service.

2. In 2014, Facebook conducted their infamous Emotional Contagion study where they manipulated users' newsfeeds to contain differing amounts of positive and negative content. Name the (a) research question, (b) independent variables, and (c) dependent variables that Facebook used in this study.

1. Research question: How does the emotional content that people see in their newsfeed influence their own emotions?
2. Independent variables: 2 groups where one was exposed to mostly negative emotional messages in their newsfeed while the other was exposed to mostly positive emotional messages.
3. Dependent variables: The type of emotional content that these two groups of users would generate themselves after being exposed to either negative or positive emotional content from their newsfeeds.

3. What kind of data collection strategies would you use to:

A. Determine user perceptions of a social media campaign

Questionnaires: create a survey that asks people questions about their perception of the social media campaign in question. Some basic questions you could ask could be: Are you aware of this social media campaign? If yes, how many times can you recall being exposed to this social media campaign? Have you ever bought the item that the campaign is selling? If not, how likely are you to buy it? On a scale of 1 to 5, how much do you like (or dislike) this social media campaign? Do you find it offensive? Etc.

Without knowing anything else about the users who are exposed to this campaign, the more straightforward way to figure out their perceptions is to ask them through a short online survey.

B. Assess the effectiveness of a web redesign

Observational study: First, define “effectiveness”. If the measure of effectiveness is how easily people can navigate to a given page, observe how many clicks a user has to make before getting to the page you want them to find. Also, observe the amount of time they spend on each page. Longer time spent on a page could indicate that people find that page difficult to navigate. Also, observe bounce rates – how many times have people clicked on a page only to quickly click on a different page or press the back button? High bounce rates could also indicate that people get lost within the site structure.

This method works because it allows us to see exactly how users interact with the redesigned website in a natural state of searching for information. It wouldn’t be as effective to use a questionnaire because most people don’t pay a lot of conscious attention to how they use websites and using archival data simply wouldn’t fit because it would likely come from before the website redesign.

C. Decide whether the next iPhone will live up to its hype (and turn a profit)

Questionnaires: create a survey and distribute it to as many category consumers as possible. Ask them a set of questions to ascertain what kind of expectations a flagship smartphone would have to meet in order for them to buy it. Then ask them another set of questions specifically about the features of the new iPhone and how much those features would or would not affect their purchase decisions. If possible, follow up with focus groups.

The goal of this method is to determine the criteria that potential buyers are going to use to judge the value of this product. The only way to determine these criteria is to ask consumers directly what they might be looking for in this product.

4. For the three scenarios above, describe how you would conduct each investigation (i.e., not only the type of method, but what question would you answer, what procedure would you use, what kind of data would you collect, and how would you analyze that data to answer your question).

A. Determine user perceptions of a social media campaign (Questionnaire)

The question I would answer is what do people think of this campaign and whether or not they like it. The procedure would be creating the survey, distributing it using a survey platform like Qualtrics or Survey Monkey, and collecting the responses as both text and numeric data. Then I would do a basic analysis with descriptive statistics to see how many people answered positively or negatively about the campaign.

B. Assess the effectiveness of a web redesign (Observational study)

The question that I would answer with this study is how easy is the website to navigate after the redesign. The procedure of observation and the data I get really depends on what tool are available for observation. If we can do mouse tracking, I would definitely use that. I might also use something like Google Analytics to check bounce rates, time spend on each webpage, and website navigation flow. I’m not really sure how this data would look in its raw form so I can’t say exactly how I would analyze it.

C. Decide whether the next iPhone will live up to its hype (and turn a profit) (Questionnaire)

The question I would be answering with this method is what criteria do potential buyers use when evaluating a flagship smartphone? Answering this question will show us what kind of criteria customers need to have met by a smartphone in order to purchase it and then see how many of that criteria are met by the new iPhone. If these criteria aren’t met, then we could predict that the new phone will flop. The procedure would involve creating the survey (making sure that each question is worded in a way that will get the responses we need), distributing it using a survey platform like Qualtrics or Survey Monkey, and collecting the responses as both text and numeric data. I would then use descriptive statistics, visualizations, and (maybe) regressions/distributions to analyze it.

5. Describe how you might use data fusion to determine how the location people are in influences the ways they communicate with others. Assume you have full access to data from all technologies that a person may be carrying with them or that may be embedded in the environment.

If I have unlimited access to people’s cellphones (highly unethical), I would look at geographic data if they have their GPS turned on and tap into their microphones. I would use the geographic data to pinpoint their location and use the audio data from the microphones to record what they say to those around them during the time that they’re present in different locations. For the geographic dataset for each person, mark each location with its name (like “school”, “home”, “restaurant”, etc.). For the audio dataset, make sure it has the GPS location attached to each recording. Then join the two datasets on GPS coordinates. Using mostly the audio data, I would look at how tone of voice and vocabulary changes for people based on what kind of environment they’re in at that moment.