

Maximizing The Likelihood of Getting a Match

1. Background

In this day and age, love has gone digital, and the use of dating applications has become more and more common. While many dating profiles contain textual information that helps users convey their personality and interest, often times profile pictures is one of the primary focal points when it comes to wooing potential matches.

One topic that has been a subject of discussion among my social network is around the type of pictures one should have in their profile to improve the probability of getting matches. There has been many advice put out there in reddit¹ or newspaper articles², suggesting the types of picture to have or not have in order to be successful in the online dating world. But a lot of these suggestions seems to be based on anecdotal evidence, which is why this is a topic of interest for the sake of experiment, and brings us to our next topic: the research question.

2. Research Question

One thing we would like to explore is to see whether having certain pictures in the dating profile can help the user improve the rate of getting matches. This is a broad topic that has a lot of theories that can be tested, so to be specific and get started on answering this question, in this experiment we would like to see if profiles that contain an international travel pictures would have a better rate of matches.

3. Experimental Design

Test Subjects

For the experiment our subjects will be dating profiles, not people directly. We will be asking 6-10 people to provide a set of pictures that can be used to create dating profiles on a mobile dating application (e.g. Tinder, Coffee Meets Bagel). We will then proceed and create two versions of a profile for each person who donated their pictures -- a treatment and control profiles.

To control potential issues due to variety of type of pictures that each person may have we will be imposing a certain standard on the pictures that are used in the control version. In particular

¹ "My advice for online dating profiles : seduction - Reddit." 11 Jun. 2013, https://www.reddit.com/r/seduction/comments/1g5am0/my_advice_for_online_dating_profiles/. Accessed 3 Oct. 2018.

² "Do's and don'ts for profile pictures on dating sites - Chicago Tribune." 13 Jan. 2018, <http://www.chicagotribune.com/lifestyles/ct-online-dating-profile-pictures-advice-20180112-story.html>. Accessed 3 Oct. 2018.

each of the control profiles will strictly have only four pictures in an indoor setting (e.g. a simple headshot picture, a picture of the person sitting at a restaurant).

Each of the treatment profile on the other hand will have the same four pictures that were used in the control profile plus two more pictures that shows international travel. The specificity of the type of travel pictures (e.g. beach vacation, museum, famous landmark) however probably warrants some additional discussion when we start the experiment, but preferably we would like to use the same type of vacation pictures across all the treatment profile to prevent any confounding effects on our analysis.

Lastly, a quick note on random assignment. We would like to argue that since the dating profiles are the subjects in this experiments, it is possible to have both a control and treatment version at the same time, we do not think that randomly assigning treatment is necessary for the experiment.

Measuring Treatment Effect

After the dating profiles have been created we will conduct the experiment over a course of a week, where we will measure the number of profiles that each of the dating profiles liked/swiped right on, and also the number of matches that we receive (i.e. mutual likes). Using these two metrics we will then create a match rate, which is the number of matches over the number of likes/swipes, and this metric is what we will be using as the outcome variable for the experiment.

To make data gathering easier and prevent selection bias (i.e. selectively swiping right/like) the dating profiles will not be handled by the people who donated their pictures, instead they will be handled by the researchers themselves. Furthermore, the researchers will be liking/swiping right on every single potential match that is presented to the dating profile they are handling.

Blocking variables

One blocking variable that is immediately obvious to us is gender. Due to various reasons, there may be a different baseline in terms of the match rate between men and women, so we will be preemptively block by having an even split of men and women that we have profiles for in the experiment.

Analysis

After the data have all been collected, we will then conduct a hypothesis test to determine if there is a statistically significant average treatment effect in having international travel pictures in the dating profile.

Covariates/Secondary Measures

For secondary outcomes we will also be collecting some basic demographic (e.g. race, height, education) information on the people that we encounter during the experiment. The demographic information then can be used to further tease out the outcome variable to see if the treatment is particularly effective on people with particular demographics.

Covariates such as height, education and background will vary for each of the person who donates their pictures for our experiment, and these covariates may cause certain profiles to be liked more than others. Fortunately, to prevent issues mentioned, these covariates can easily be manipulated to be the generally the similar for each of the dating profiles we have for the experiment.

4. Limitations and Risks

One of the potential serious issues we have with the experiment is the violation of non-interference assumption. To illustrate, imagine if we put all the treatment and control profiles in the same geographic area. Doing this may cause for the actual people who are using the application to be exposed to both the treatment and control profiles that we have created, and in turn make these users suspicious that the profiles are not real or be part of an experiment. To prevent non-interference assumption violation we will be setting the treatment and control profiles in two separate cities that are demographically similar (e.g. San Francisco, and Seattle). This probably warrants further detailed discussion before we start the experiment.

Another challenge with the experiment is the small amount of subjects that this experiment has. Since we are only planning to create 6-10 dating profiles for each of the control and treatment group, we may run into difficulty in varying the treatment that we can introduce to the treatment group. Another potential issue related to the small amount of subjects is that our analysis may be more sensitive to large variances in the outcome variable (e.g. one profile that contains particularly high physical attractiveness may end up having significantly higher match rate compared to the others), which then may exaggerate the average treatment effect or cause a non-normal distribution. This will be a topic that needs to be discussed further with the research team and see whether it will be feasible to increase the number of subjects for the experiment.