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UNCOVERING IMPLICIT RACIAL BIAS

Introduction

Many people believe themselves to be ethical and fair, especially when it comes to issues surrounding race. There is a belief that racial bias is a character flaw reserved only for overt forms of bigotry. However, implicit racial bias is pervasive in everyone despite our best efforts to avoid and disassociate ourselves from it. Once confronted with our own biases, we are forced to self reflect on our own views and assumptions that we were unaware we ever had and we are inclined to question and examine the influence that social conditioning plays in our lives. Although implicit racial bias in of itself may not be a pressing issue, it can become problematic when that bias leads to subconscious discriminatory behavior. In the worst cases, racial bias can reach the highest levels of the government resulting in discriminatory laws impacting the lives of millions. But in many cases, it reveals itself through the subtle choices and actions we make daily. The experiment outlined in this proposal intends to examine implicit racial bias with the research question “Does implicit racial bias influence peoples’ perception of product value?”

Proposed Experiment

Description

While the original intent was to explore the broader intricacies of racial bias and social conditioning, this research question was formulated to be more specific to fit an experiment that could be designed within the time and resource constraints of the course. To answer the research question, the proposed experiment will ask subjects the price they are willing to pay for various wardrobe items, such as shirts and sweatshirts. The key measure and intervention that will be implemented is varying the skin tone of the model wearing the wardrobe. The control group will consist of models with light/fair skin tone, while two treatment groups will be implemented. One treatment group will consist of subjects that provide their price point on wardrobe with models of dark complexion and a second treatment group with models of a skin tone between light and dark. The concept of “product value” will be measured by the price that subjects state that they would be willing to pay for various articles of clothing. The experiment will measure the difference between the average treatment effects of the potential outcomes. An analysis will be conducted to determine if there is a statistically significant difference in the subjects stated price points based on the skin tone of the models.

Unbiased Estimate Assumptions

Given that the causal effect for any given subject is unobservable, this experiment will address three key assumptions among all subjects to provide unbiased estimates of the average treatment effect. These assumptions are addressed as follows:

Random Assignment: To establish treatment assignments that are statistically independent of the subjects' potential outcomes, each subject will be assigned to control and treatment groups through simple random assignment. The experiment and the random allocation of treatments will be administered by an online crowdsourcing marketplace that conducts business research and tasks, such as surveys. Given that the execution of the allocation of treatment is essential to meeting the random assignment assumption, the randomization procedure administered by the online platform will be reviewed extensively to minimize the bias in estimates.

Excludability: It is essential that potential outcomes respond exclusively to the receipt of treatment and not to any third party interventions. Precautions will be taken to minimize the presence of interventions other than the intended treatment. One such intervention is the attractiveness of the model. A given subject may be influenced by the facial beauty of the model, which is a subjective feature that may affect the subject's response to the intended treatment. This intervention will be removed by presenting subjects with photos of the model and worn clothing from the neck down. In addition, the pose and body shape of the model will be identical across control and treatment groups. A second intervention to be aware of is the design of the clothing. While clothing preference is subjective in nature and can be difficult to control in an experiment, the presence of identifiable designs that elicit strong reactions can bias the results. An extreme example of this situation would be shirts with sports team logos. Subjects might price the clothing based on their connection with the sports team, which can confound the results. To address this issue, the clothing design will not include any identifiable markers and will be designed to be as neutral as possible.

Non-Interference: The last assumption that will be addressed is ensuring that potential outcomes reflect only the treatment or control status of their respective groups. This criteria could be at risk if the subjects are aware of the treatments being administered to other groups. An extensive review of the online platform's sampling process will be conducted. There is potential that the participants in the experiment may come from a common group, which opens up the possibility that participants can view or communicate about each other's surveys and become aware of the treatment being administered. In addition, the results of the study may be misleading if the survey is not conducted in a natural manner. Additional measures will be taken to present the survey in a realistic setting in which the subjects believe they are taking part in a pricing market research study for a reputable, but anonymous, clothing company. The clothing will come with full product details, similar to those on clothing websites, to increase the realism of the survey. Given that the subjects will simply be providing their opinion on clothing options, there are no ethical or safety concerns with the execution of the experiment.

Statistical Methods and Experimental Design

Once the experiment has been carried out, data will be gathered and analysis will be conducted to determine the statistical significance of the findings. A test of the sharp null hypothesis of no effect, stating that the treatment effect is zero for all subjects, will be conducted. More formally stated, each subject's outcome for models' with the light skin tone is equal to that of the models' with the darker skin tone. Using the observed outcomes in our experiment, a large sample of possible randomizations will be simulated to closely approximate the sampling distribution of potential outcomes. Using random inference, a two-tailed hypothesis will be run to determine if the results of the experiment hold statistical significance.

In addition to testing the sharp null hypothesis, a probability statement about the range of values within which the treatment effect is located will be calculated. Given that the experiment will attempt to have a similar number of treatment and control subjects, there will be less concern regarding the confidence intervals being too wide or narrow. Creating a balanced experimental design will help construct a conventional 95% confidence interval by assuming the treatment effect for each subject is zero and filling in the missing treatment and control values to yield a complete schedule of potential outcomes.

As part of the experimental design, block random assignment will be administered to improve precision. Subjects will be blocked into male and female groups, as self-identified by the subject, with complete random assignment occurring within each block. Subjects will be given the option to not respond to gender identification. Blocking will help reduce sample variability while also reducing inaccuracy that may be associated with subjects providing responses on clothing that does not pertain to their typical preferences.

Risks and Potential Issues

As discussed in the above sections, some of the risks and potential issues with the experiment stem from violations of the unbiased estimate assumptions. One concern is that sampling will not be conducted from the intended population of interest. A foundational component of the research question that is being addressed relates to social conditioning and the idea that individuals are subconsciously trained by societal and cultural norms. In order to answer this question, samples will need to be pulled from a population that has been influenced by U.S. culture. The sampling process should be reviewed to collect data from within the U.S. In addition, while subjects will be selected from within the U.S., there may be cases where they recently moved to the country and grew up with different customs and social norms. U.S. citizenship status can be used as the benchmark for determining if the subject has had substantial exposure to American social conditioning.

Before committing both financial and human resources to this experiment, a pilot study could be administered to address potential design mistakes in the experiment. Given the short duration and ease of administering the treatment, a pilot study would not be needed to assess the feasibility of the study. However, a pilot study could be beneficial in receiving feedback to address any lurking variables that might not have been openly apparent to the design team during experiment planning.

Conclusion

So what can come from the results of this experiment? Given the current social landscape in America, race relations are a prevalent topic on everyone's mind. While addressing overt forms of racism are justifiably at the forefront of discussions regarding race relations, people are more likely to encounter implicit racial bias and subtle discrimination in their daily lives. The trouble with implicit biases is that it is present in everyone and it is very difficult, nearly impossible, to identify in ourselves. Most people have no conscious knowledge that their own biases could drive their daily actions. While the results of this experiment cannot untrain our biases, it can bring to light that implicit racial bias does exist. Once we can acknowledge that implicit racial bias is present in many of us, we can move towards the next steps of untying the link between these biases and discriminatory actions.