

Flower Color and Happiness

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Hypothesis

Flowers are one of the most synonymous gifts for emotional events like valentine's day, weddings, or funerals. We sought out to investigate the effect of different colors and types flowers have on modifying someone's mood. Specifically, we wanted to test the following hypothesis: seeing dark colored flowers (gray/black/dark blue) evokes feelings of sadness.

Data

We scraped data from <https://xxxx.com> which contains creepily obtained data on individual's moods on a 1-10 scale across Happiness, Sadness, Anger, Love for every day they were alive. We had data from Instagram where people posted about flowers they'd looked at, and used deep learning to label the flower color and type. Therefore, we had a data table with the following columns of interest: date, anonymous_person_id, country, age, gender, flower_color, flower_type, happiness, sadness, love, anger. Note, if a flower was not seen on a day, the value in our flower-related columns is NULL. Of our 80 trillion data points, 83% had null values in the flower column.

Findings

Claim #1: Dark flowers are associated with significantly higher increases in sadness than light flowers.

Support for Claim #1: On each day when a person saw a flower, we computed the change in sadness from the previous. We binned colors into "light colors" and "dark colors" manually. Figure 1 shows a side by side histogram. We can see that on average, dark color flowers are associated with larger increases in sadness. The mean and 95% CI was 4+/-0.07 and 6+/-0.8 for light and dark flowers, respectively.

[Put in fake chart here]

Claim #2: There is no evidence to suggest that dark flowers cause increases in sadness.

Support for Claim #2: We ran a multiple regression to predict change in sadness from flower color, controlling for age, gender, flower type, and previous day's sadness. We binned types into "roses" and "non-roses" manually. We found that the coefficient on flower color was not significant, while the coefficient on type was significant, with an effect size of 1.3 (p=0.02). That is, all else being equal, seeing non-rose flowers leads to an increase of 1.3 in sadness rating. Table 1 shows our full regression results.

Variable	Coef.	P-Val
Color (1=dark)	0.5	0.34
Age	1.6	0.12
Gender (1=female)	0.03	0.43

Flower Type (1=non-rose)	1.3	0.02
Previous Day's Sadness	1.5	0.02

Claim #3: Roses are significantly less likely to be dark in color than non-roses.

Support for Claim #3: We wanted to investigate whether there was an association between flower color and type that could explain the initial positive effect we saw in Figure #1. To do this, we ran a chi-squared test to see if the distribution of colors was significantly different for roses vs. non roses. We found that there was a significant difference ($p=0.03$), the distributions are shown in Table 2 below. This is consistent with the above two trends we observed.

	Light	Dark
Rose	72%	18%
Non-Rose	30%	70%