THE IMPACT OF COVID-19 ON HAPPINESS

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DataFest 2020

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Health

The bundle of questions asked in the AP Survey that fall under the “physical factors” refer predominantly to how one’s health, and how one’s tangible actions to curb the spread of coronavirus have contributed to their overall level of happiness/unhappiness during the pandemic.

In order to see how the combination of these affect one’s happiness, two linear regression models were built: one of the month of April and one for the month of May. Both models gave a very high R^2 value (31.1387% for April and 31.52095% for May). This shows that there is a correlation between one’s health and their overall happiness during the pandemic.

From the estimates, there is no specific factor that stands out, but rather it is a culmination.

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Social factors

The questions with answers marked with "**SOC**" prefix are mostly related to how much contact with different groups of people the individual had (Figure 1) and whether they were involved in volunteering opportunities.

Similarly to physical factors, multivariable regression models were created on the dataset split into train-test (75/25%) to see which one had the highest impact on the unhappiness variable ranging between 0 and 15. This was verified by running the algorithm 100 times to see how the models would vary. The models were tested on their own test sets, as well as on the other month's to observe the changes due to the virus. Interestingly, even though the models had low and stable RMSE values, only varying at most by ~0.2 (Figure 2, 0.2 = 1.3% of 15), those values were consistently slightly larger when applied to the other month's test data, suggesting a shift between the months. However, the distance between the model min and max value for the coefficients varied by as much as 7 (median distance being ~1), thus making it difficult to predict which variable had the greatest effect and to spot the shift that had occurred.

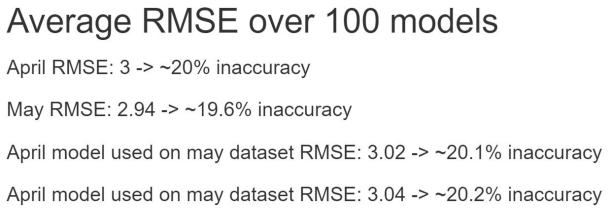
SOC3A.
In the past month, how often did you communicate with friends and family by phone, text, email, app, or using the Internet?

RESPONSE OPTIONS:

1. Basically every day
2. A few times a week
3. A few times a month
4. Once a month
5. Not at all
77. Not sure

Source: CPS Civic Engagement Supplement, adapted

Figure 1. Sample SOC question.



Average RMSE over 100 models

April RMSE: 3 -> ~20% inaccuracy

May RMSE: 2.94 -> ~19.6% inaccuracy

April model used on may dataset RMSE: 3.02 -> ~20.1% inaccuracy

April model used on may dataset RMSE: 3.04 -> ~20.2% inaccuracy

Figure 2. A sample of RMSE estimates for the models.

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Economic factors

The respondents had to answer questions on their current economic situation and their outlook on it in the future. While in general, economic factors did not influence happiness as much as health factors, it is possible to discern a trend related to covid-19: among the variables with the largest coefficients are food security concerns and whether a person has newly applied for a form of income assistance such as Social Security. While the likelihood of being employed within the next three months had, on average, a larger influence on happiness in April than in May, which would suggest that most respondents could absorb the economic shock of not being employed in the short term, the situation was much different in May, where concerns about being employed within the next month changed the average happiness significantly.

To conclude, covid-19 seems to have made economic factors a more important component of happiness than they were before the crisis.