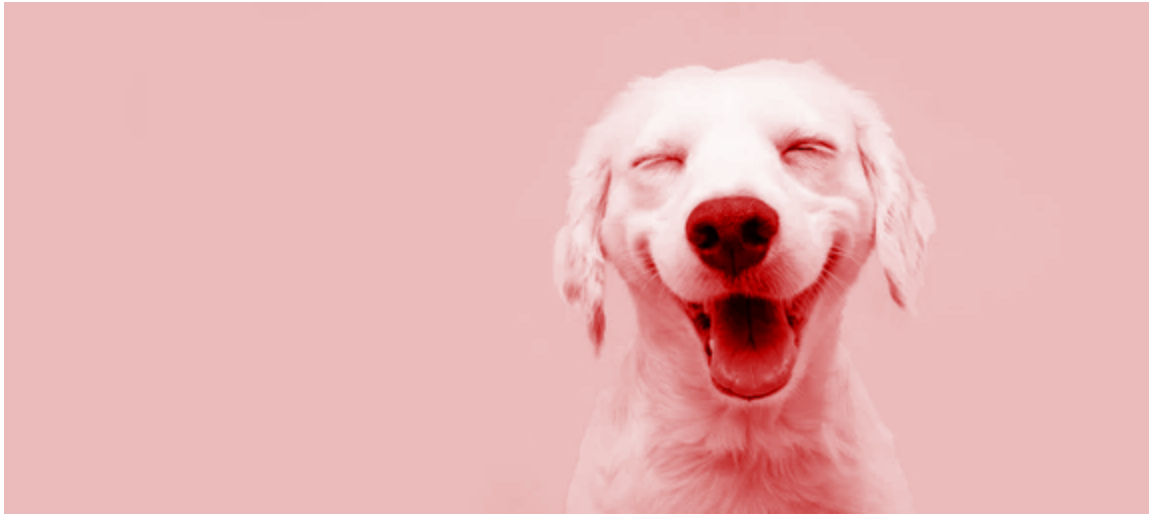


Happiness at Rutgers- What About It?



By Ella Walmsley for Data 101, March 2022

Background

When I was choosing my college major, I chose it largely based on my own interests and passions. I wanted to believe the “Do what you love and you’ll never work a day in your life” rhetoric. Not that I’ve really changed my mind, by the way- I’m still double majoring in Plant Science and Agriculture, although I did add minors in data science and computer science. Life seemed entirely too short to spend the majority of it doing something I wasn’t at least a little interested in.

Happiness has a large effect on our lives. People who are happier tend to live longer and be, well, happier and more satisfied with their lives¹.

But as I began working through my college courses, I wondered what else could possibly factor into a happy life. Of course, there is no perfect formula for happiness, no one size fits all. But there are things we can do that experts, such as Dr. Laurie Santos (aka “The Yale Happiness” professor), note as common themes among people that are happy- these are things like close friends, exercise, generosity and gratitude, and sleep², all of which you will see throughout this essay. I wanted to see how these practices were reflected in college students, especially among things that are unique to people pursuing higher education, such as schools (area of study), GPA’s, and predicted financial stability after obtaining a degree as opposed to current financial stability.

However, as I scoured through Kaggle for an appropriate dataset, I struggled to find one that had the things I was looking for. Finally, I found one that only kind of sufficed from an Ivy League institution. It had data compiled from about 150 responses via google forms. Which isn’t bad, but wouldn’t it be cool to see what Rutgers students thought? What follows is compiled data via google forms generously provided by the students of Rutgers University.

Thank you very much to all those that participated in the survey. In addition, thank you to Professor Tomasz Imieliński for letting me actually do this assignment and to my TA (Janash Parikh) who will probably have to read this. And lastly, thank *you* for reading this.

¹<https://www.health.harvard.edu/blog/if-you-are-happy-and-you-know-it-you-may-live-longer-2019101618020>

² <https://www.nytimes.com/interactive/2022/02/21/magazine/laurie-santos-interview.html>

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Methods

The survey was distributed over a roughly 36 hour period. The survey was distributed to the school's Reddit, Discord, and various academic chats across different schools and disciplines. It was analyzed in the R programming language for Data 101's "Data Blog Assignment." The survey asked a total of ten questions in both multiple choice and fill-in format.

1. What year are you?
 - a. Options: Freshman, Sophomore, Junior, Senior, "Super Senior," graduate, unsure
2. What school are you in?
 - a. Options: SEBS, SAS, SOE, RBS, Mason Gross, Douglass, Edward J. Bloustein School of Public Planning/Policy, Ernesto Mario School of Pharmacy, Graduate School, Undecided
3. Do you volunteer? If so, how often do you do it a semester on average?
 - a. Options: 10+ hours, 5-10 hours, at least one hour, I don't volunteer
4. How many acts of kindness do you perform on an average day?
 - a. Options: 10+, 5-9, 3-5, at least one, none
5. Can you identify at least 2-3 friends or acquaintances you have that support you, cheer you up, or generally just enhance your life?
 - a. Options: Yes, no, I have one friend like this
6. Do you feel like you'll be able to live comfortably in a financial sense after you graduate college?
 - a. Options: Yes, no, maybe
7. What is your GPA? (fill in option)
8. How many hours do you sleep per day, usually?
 - a. Options: 8+ hours, 6-8 hours, less than six hours
9. What is your overall happiness level/satisfaction with life/etc on a scale of one to ten, with one being the lowest and ten being the highest?
 - a. Options: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
10. Thank you so, so much for taking my survey! It really means a lot and I appreciate it greatly. Have a great day!
 - a. Options: You're welcome!, Thanks, you as well!, :)

Addressing of Possible Issues With the Survey

Happiness, of course, is subjective. It is an ordinal scale. To account for this, a Spearman method of determining correlation between GPA and happiness was used. In addition, although an effort was made to distribute this survey to all types of students, it may very well be true that results are skewed and not representative of the entire student body. This is a voluntary response sample, nobody was forced to take it. In order to try and avoid as much bias as possible, questions were kept short and precise, answers were kept clear (with only one relying on the opinion of the respondent, which was their own happiness), and leading questions were largely avoided. In addition, it's difficult to say if this survey is truly representative of the Rutgers- New Brunswick student body because of the smaller sample size. This website,³ for example, tells us that for a population with a size of about 50,000 students, if we assume a 7.5% margin of error, and a .5 sample proportion, we should be good with 196 responses. However, again, this is very small and it is a decent margin of error. In short- these results should be taken with a grain of salt. However, they are interesting to look at. **As a general disclaimer for this entire blog project, CORRELATION DOES NOT EQUAL CAUSATION. WE CANNOT AND WILL NOT SAY RUTGERS STUDENTS ARE HAPPIER AS A RESULT OF THESE THINGS OR VICE VERSA. WE CANNOT SAY THAT THESE THINGS ARE CAUSED BY EACH OTHER IN ANY WAY, SHAPE, OR FORM, NOR AM I IMPLYING THAT A STUDENT WHO DOES ALL THESE THINGS WILL AUTOMATICALLY BE HAPPY. KEEP THIS IN MIND AS YOU READ. THANK YOU!**

³<https://conjointly.com/blog/sample-size-calculator/>

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The Main Question: Happiness and GPA

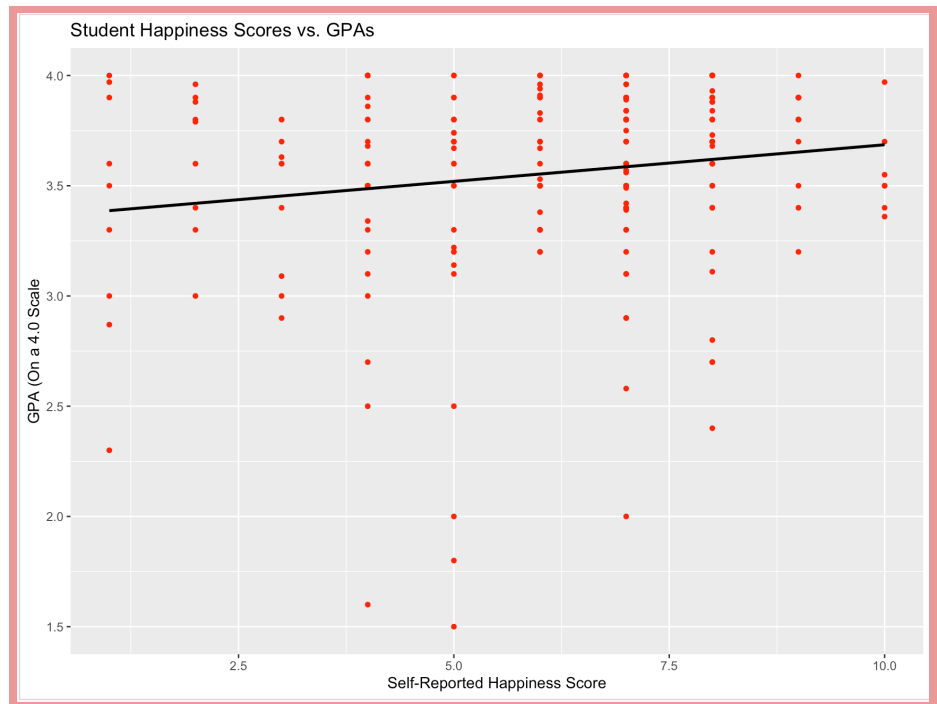
This was my main question going into the assignment. So, happiness and GPA: are they correlated? It turns out that they just might be.

Null hypothesis: Happiness and GPA have no relationship.

Alternative hypothesis: Happiness and GPA have some sort of positive relationship.

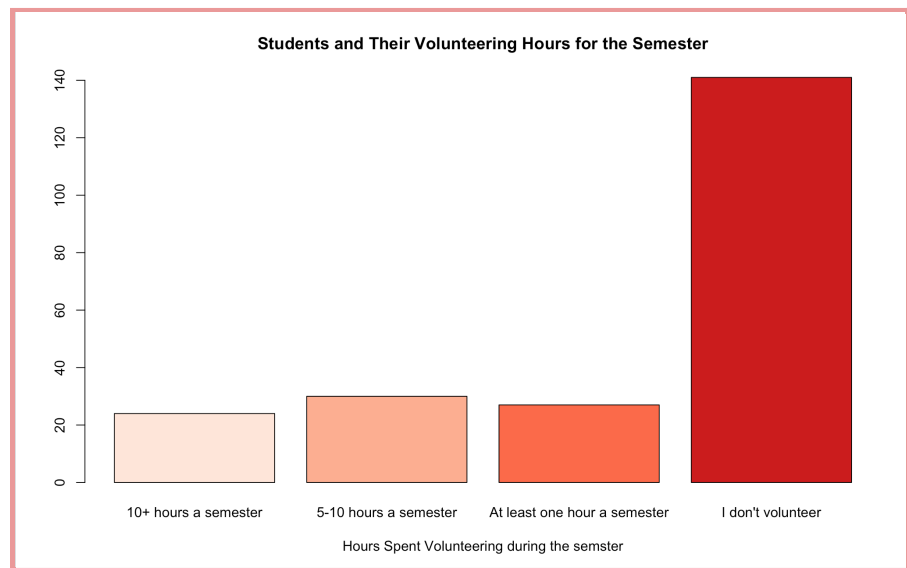
To see if we could reject the null hypothesis, I ran a Spearman correlation test and received a p-value of .015. Assuming a confidence level of .95%, it appears that we can reject the null hypothesis and say that there is some evidence for a positive relationship with happiness and GPA. Of course, correlation doesn't equal causation. It's hard to say if students are happier because of their high GPAs or if they have higher GPAs because of their happiness, or if neither of these things are true at all and this is just a coincidence.

But this got me thinking- what else appears to be linked to happiness?



Volunteering and Happiness

Volunteering is one of the best ways to give back to your community and gain gratitude⁴. Rutgers has a plethora of clubs and organizations dedicated to creating volunteer opportunities for students on campus. I wanted to see how many students volunteered and if there was a potential relationship between volunteering and their happiness score.



⁴<https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-017-4561-8>

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Volunteering and Happiness (continued)

It seems that a large majority of students did not volunteer at any point during the semester. However, those that did seemed to report higher happiness scores. I wondered if the students who volunteered the minimum amount of their time (at least one hour a semester) were statistically more likely to rate their happiness score higher than students who didn't volunteer. I ran a permutation test with the following hypothesis to find out:

Null hypothesis: Happiness and time spent volunteering have no relationship

Alternative hypothesis: Students who volunteered at least one hour a semester were more likely to rate their happiness higher than those who didn't volunteer at all.

P-value: .0001



From this p-value, we can reject the null hypothesis and say that, statistically, there is some positive relationship with how students rated their happiness and volunteering. Again, a disclaimer: correlation doesn't equal causation. But that got me thinking about what students can do to put some good into the world, even if it isn't just volunteering. But what if students are just kind? It's easier to be kind for five seconds than volunteer for an hour, arguably.

Acts of Kindness and Happiness

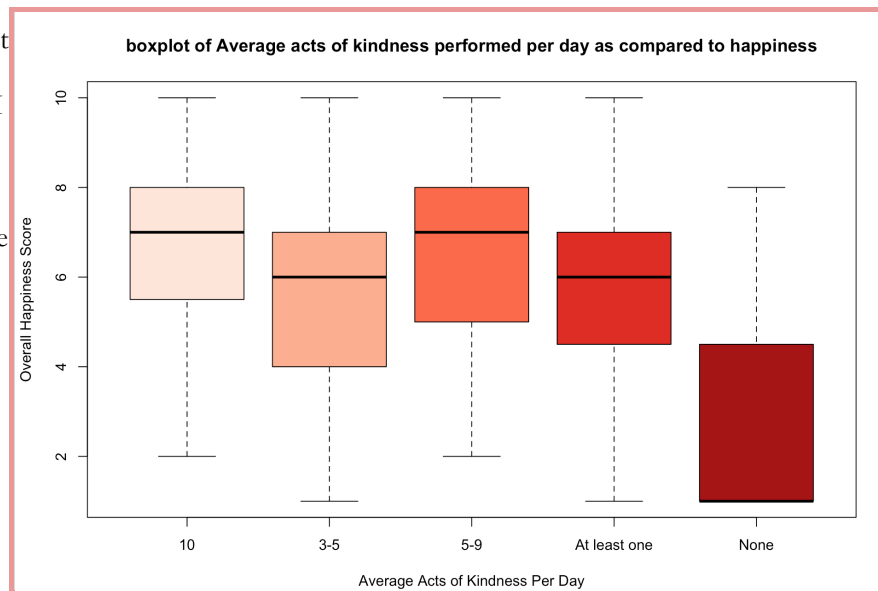
Are people that make more of an effort to be kind happier? Studies have shown that being kind does increase happiness levels⁵, but I wanted to put it to the test with Rutgers students. In addition, how kind does one have to be in order to be happier than not? Here's what I found. Clearly, people that perform more acts of kindness tended to report higher happiness scores. But is performing at least one act of kindness statistically more likely to make someone happier? I ran a permutation with the following hypothesis:

Null: The number of acts of kindness or lack thereof have no relationship with happiness.

Alternative: People who perform at least one act of kindness per day will report higher happiness levels than those that perform none.

P-value from permutation test: .0015

Thus, we can reject the null hypothesis. There isn't sound evidence to say that making an effort of kindness has no relationship with happiness.

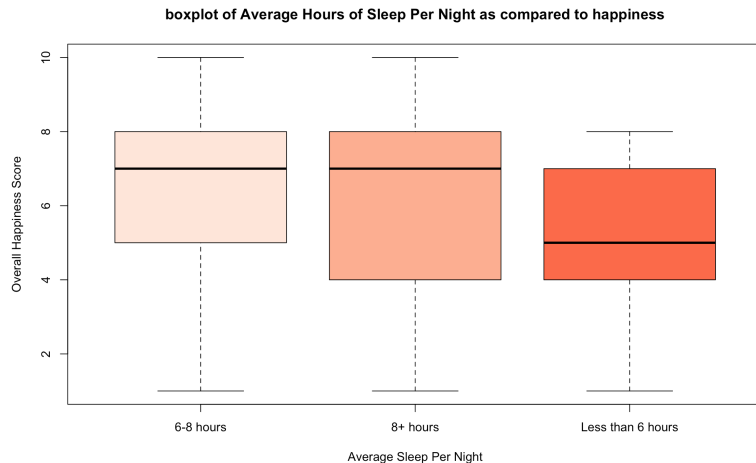


⁵https://greatergood.berkeley.edu/article/item/kindness_makes_you_happy_and_happiness_makes_you_kind

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Health and Happiness

It is well known that good sleep and exercise are one of the best things a person can do for their health⁶. But do these things correspond with the self-reported scores of happiness? The answers may surprise you. As usual, I sought to see if the absolute minimum (6 hours, one day) were enough to raise happiness. So:



Null: Sleep and happiness score were not related in any way

Alternative: Students who usually get 6-8 hours of sleep rated their happiness significantly higher than those who get less than six hours

P-value from permutation test: .0075

Reject null hypothesis. There does seem to be a suggestion that students who get better sleep report higher happiness scores



Null: Exercise and happiness score were not related in any way

Alternative: Students who workout at least one day a week rated their happiness significantly higher than those who usually get none

P-value from permutation test: .0507

Fail to reject null hypothesis. There does not appear to be evidence that students who work out one day a week report higher happiness scores than students who don't

The potential (again, we can only reject the null hypothesis, not 'accept' our alternative one) sleep/happiness connection was to be expected, but I was particularly surprised about the apparent lack of an exercise/happiness correlation. I usually feel much happier after a good workout, and research suggests that this is the norm. Fascinating!

Close Acquaintances and Happiness

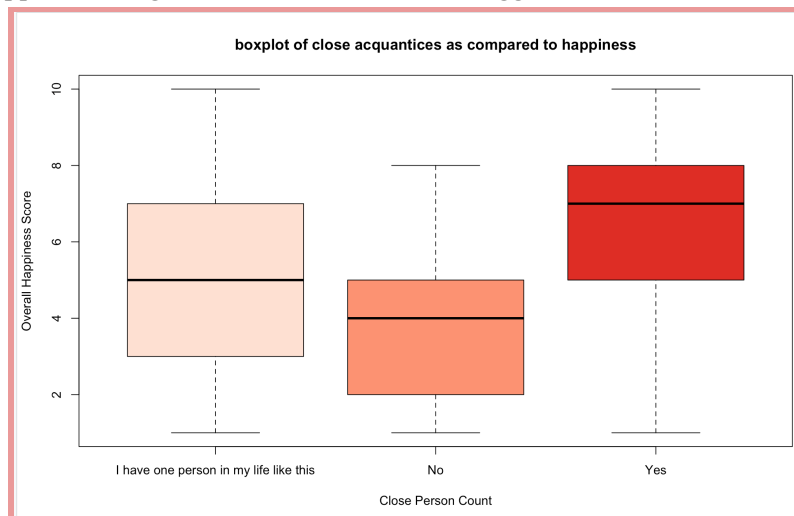
Research suggests that having 2-3 close friends can make one significantly happier⁷. I wondered if this held true for Rutgers students, so I put it to the test. But I also pondered- could even one close friend make a difference? Here are my results:

Null: Close friends have no effect on student happiness scores

Alternative: Students who could identify even one close friend were more likely to have a higher happiness score than those who could not

P-value: .0009

It appears that we can reject the null hypothesis.



⁶ <https://psycnet.apa.org/record/2000-07284-000>

⁷ <https://news.harvard.edu/gazette/story/2008/12/having-happy-friends-can-make-you-happy/>

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Predicted Financial Stability and Happiness

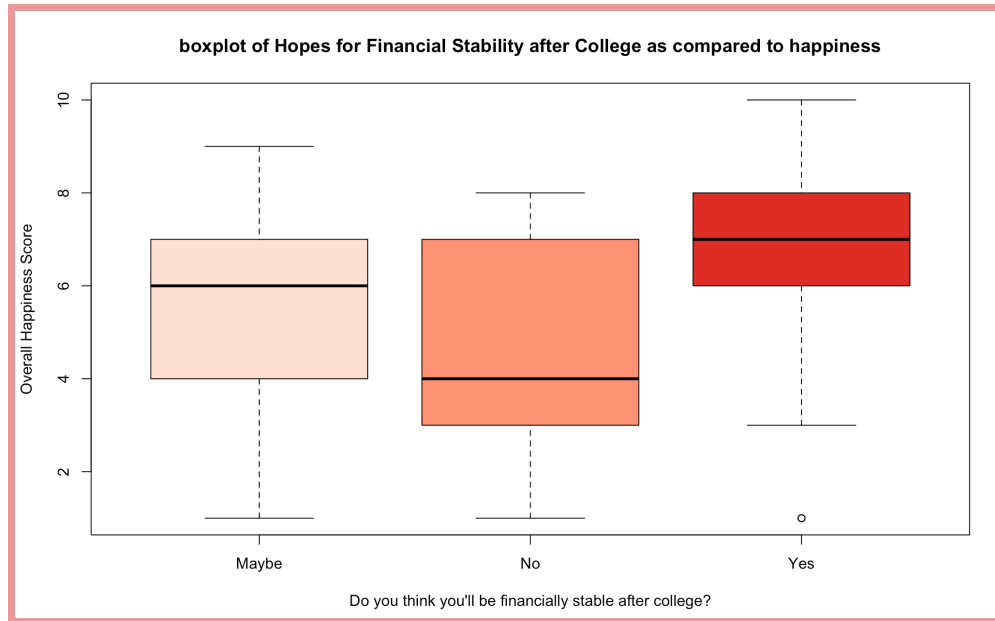
“Money doesn't buy happiness” is in fact not true. It turns out that money does buy happiness- to a point. That point is about \$105,000 a year. This is enough to put food on the table, have a nice house, and enjoy luxuries⁸. From there,

happiness tends to plateau. So I guess it's no surprise that Rutgers students who predicted that they would be financially stable after graduation rated their happiness scores higher. Take a look:

Null: Predicted financial stability has no relationship with student happiness score.

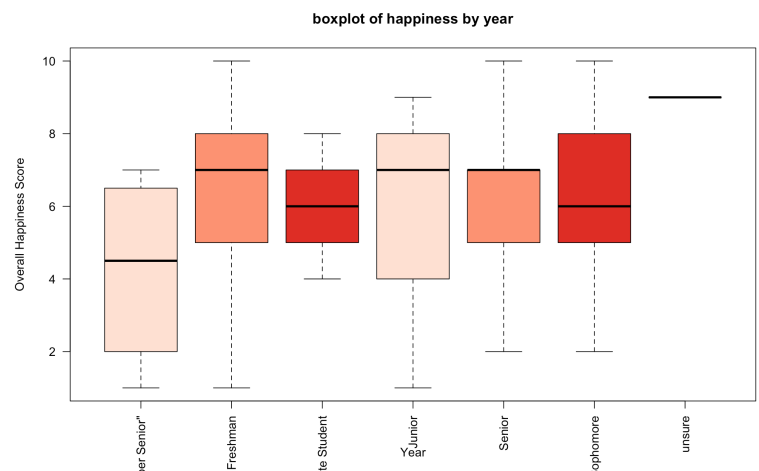
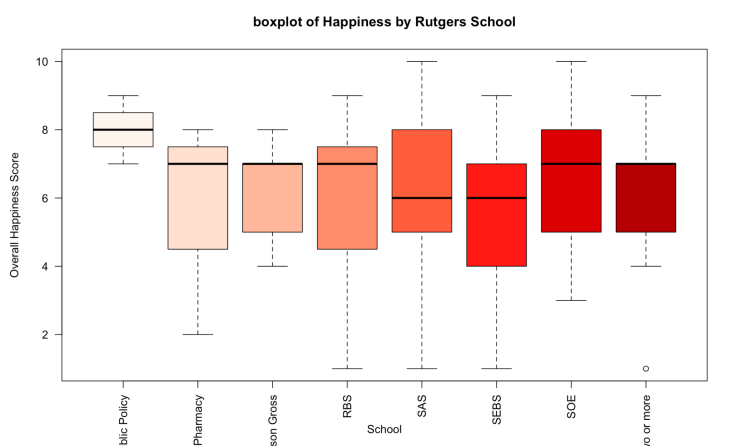
Alternative: Students who are confident that they will be financially stable after college are happier than those who are unsure.
P-value from permutation: .0004

Thus, we can reject the null hypothesis, and say that there is evidence to suggest those who are more confident in their financial stability after college will rate their happiness higher than those that are unsure.



For Fun

Didn't run p-values on these, just made the graphs to show distributions. Enjoy!



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Final Notes

This was a very fun project to do! I really enjoyed getting to see and map out the results, even if they may not hold a more solid statistical significance due to the smaller sample size and the potentially biased collection method. That being said, I really do appreciate everyone that participated.

If you read all the way through this (thanks, by the way) and you want to see if trying out some of the activities mentioned here does anything for your happiness (again, correlation does not equal causation and I nor these results are saying you will be happy even if you maintain a perfect 4.0, sleep 8+ hours, have 3 wonderful, close, and supportive friends, volunteer extremely often and perform uncountable acts of kindness per day, etc) see the following items below- you may be interested in them.

- An 'exercise' doesn't have to be a crazy weight-lifting, sprinting, awesome-display-of-your-jacked-muscles session- a simple walk may do wonders⁹
- If you want to volunteer but only have an hour every two months to do so, donating blood is a fantastic way to give back. Rutgers hosts at least one a month through the New York Blood Center (<https://www.nybc.org/donate-blood/>). From personal experience, it is a wonderful opportunity because A. You get to help someone in need B. You can find out your blood type for free and C. When your blood is sent out for use at a hospital, you get a notification about what hospital it went to and how it was used to save a life. It's very rewarding, relatively painless, and the actual process only takes about twenty minutes (the perfect time to scroll through the tiktok or r/Rutgers)
- If you want to volunteer from the comfort of your own home and/or without giving up any bodily fluids, you can fill out a form to donate to the Rutgers Food Pantry at the bottom of this link (<http://ruoffcampus.rutgers.edu/food/>), which is an organization at Rutgers that provides food for food-insecure students.
- Lastly, you may be interested to know that the mean happiness score for students that took this survey was around 6.05. This means that the Rutgers Students who took the survey were more happy than not. I, in a completely personal and non-scientific opinion, found that this mean made me feel a little happier. Maybe it will do the same for you.

Thanks again, and have a nice day :)

⁹ <https://bjsm.bmj.com/content/52/12/800.full>