

How does a student's academic performance affect his degree of extraversion?

Karl Juhl, Kaj Woehr, Qiji Xiang, Tharun Komari, Théo Gandolphe

Abstract

Our goal with this study is to verify if there is a correlation between academic performances (GPA as operationalized variable) from English speaking students and their degree of extraversion. The study will only include a survey, sent to students from IE University in Segovia (sample), asking them to give their result of their extraversion value given by the online Hexaco test, and their GPA. As a result, we found out that students with a higher GPA are often less extraverted than those with a lower GPA. These results confirm our initial hypothesis: as freshmen students in IE University, we noticed that most of the people who constantly obtain really high grades in class are often less outgoing and sociable. The logical explanation we found is pretty straight forward: students who get good grades usually spend more time working than the others, and therefore have less available time to socialize or do external activities. Moreover, they're also probably just more focused towards their studies, and are therefore less willing to participate in activities which are not related to school.

Introduction

In the microcosm of university life there are two main components; academics, and social events. As students from IE University, we would like to figure out how these two factors are related. It is a common stereotype that students who excel academically tend to be less social, and would rather spend their time studying for their classes. A prominent paper on this topic is A meta-analysis of the five-factor model of personality and academic performance, by Poropat (2009). His study sufficiently explores the relationship between academic performance and the Big Five personality traits. Our study will be focusing on one of the Big Five traits, extraversion, and comparing it to the academic performance of the participants. From this past study we were able to find the best strategy to operationalize the variable of extraversion which we will be measuring from our participants. Additionally, rather than studying this topic from a global perspective we will be investigating locally at IE University. Based on the past work we have reviewed, we believe students with higher GPA will tend to be less extraverted than those with lower GPA.

Method

A. Participants

In order to ensure the representativeness and accuracy of the data to be collected, we gathered a sample of the IE University Segovia population, consisting of 100 students of the 2,085 currently studying. The participants were chosen by random sampling and were required to be

a current student of IE University Segovia as well as have an internet-connected computer or phone in order to be considered a possible participant.

B. Apparatus

The only required equipment and software are a device with access to internet for the participants, and google forms and google sheets for the observers to gather and analyze the results.

C. Materials

The HEXACO test created by Kibeom Lee & Michael C.Ashton, is a personality structure, designed to evaluate 6 different factors. These 6 factors consist of: (H) Honesty & Humility, (X) Extraversion, (A) Agreeableness, (C) Conscientiousness, (O) Openness to experience. The test consists of 100 questions the participants must rate on how true they are about themselves on a five point scale. We have included the questions asked in questionnaire in the appendix of the paper. Extraversion score operationalizes the scores of Social Self Esteem, Social Boldness, Sociability and Liveliness of the participant.

D. Design

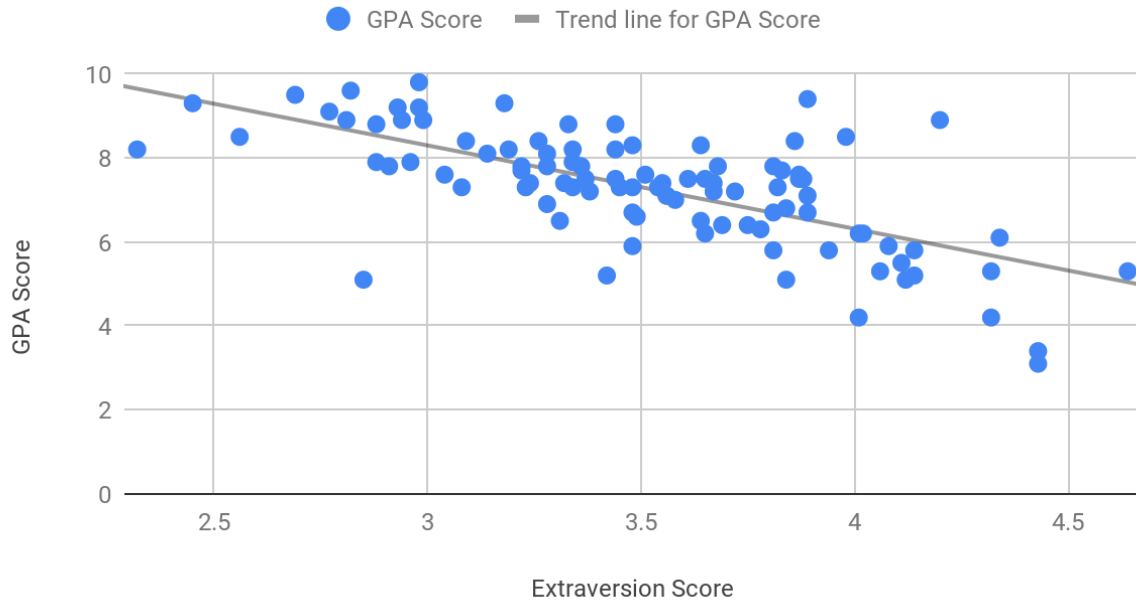
Our experiment will measure two aspects; a value indicating the level of extraversion of the participants (from 0 to 5), and their current GPA score in university (from 0 to 10). Therefore this is a correlational study where we will be studying the relationship between the GPA and level of extraversion of IE University Segovia students.

E. Procedure

The sample was obtained by sending a survey we created to all our facebook and whatsapp groups from IE University in Segovia, which is our population of interest. The survey includes 2 questions: the first one redirects participants to the online Hexaco test and asks for the extraversion score they obtain. The second asks for their current GPA at IE University. We only take into consideration the 100 first people answering the survey, who will be our sample.

Results

GPA Score vs Extraversion Score



The data collected has been inserted into Figure 1, a scatter plot which can be seen above.

Through the 100 questions answered by each participant within the online Hexaco survey, an extraversion score was produced from the survey which ranges from 0 to 5. The median

average extraversion score from the Hexaco survey globally is 3.5, while the 10th percentile value is 2.72 and 90th percentile value is 4.22, according to their website. The Hexaco survey uses a 5-point scale as the answering system, ranging from 'Strongly disagree', 'Disagree', 'Neutral', 'Agree', and 'Strongly agree'. The system weighs each question and the answer in order to calculate the weighted extraversion score for each participant, which is the value which we collected from participants and used for our study. When reviewing the raw collected data we decided there were no major outliers which needed to be discarded, as there were no submissions which stood out as incorrect.

In figure 1, the Y axis measures the GPA scores submitted by students while the X axis scales the extraversion score collected by the Hexaco test. The inserted trendline shows there is at least a general trend within the data, shown as a negative linear relationship between the two data points. The pattern of the relationship is that while extraversion score decreases, so does the majority of the GPA scores. While this result is in line with our hypothesis, the relationship is not as strong as we initially thought.

We calculated Pearson's Correlation Coefficient, which is equal to -0.676, which indicates a moderately strong negative relationship between the two measures. Visually we can analyze the graph to be following the trendline broadly with a medium spread around the line and many exceptions which do not follow the idea presented in our hypothesis. The Average Extraversion Scores of the Participants is 3.51 with a standard deviation of 0.47 whereas the The mean of Students Grade Point Average is 7.27 with a standard deviation of 1.37.

-Inferential statistics (t-test = t-value, p-value)

Discussion

Even though we were pretty convinced to find at least a moderate correlation between students' GPA and their extraversion score, we were quite surprised to find such a strong one between those two variables. Being students, it was pretty clear for us that working hard to obtain good grades also has a downside: having a harder time socializing and investing time in other activities. The results we found showed a strong positive correlation between the GPA score and level of extraversion within the participants.

The results we obtained are similar to other published results, which all tend to show that the better a student is academically, the less chances there are for them to be extraverted.

Those findings should lead future research to focus on consequences this correlation can have on an individual's life. Indeed, in our society, being really smart when it comes to school does not have as much importance as it used to in the past. We have many examples, such as Steve Jobs and Mark Zuckerberg, who proved that success does not necessarily come from being academically smart, but from being smart overall.

An interesting approach that researchers could take for future studies would be to determine if the low degree of extraversion someone can have can be compensated by his intelligence.

Nowadays, many companies pay a lot of importance to their employees' wellbeing and mental state, which is why having low self esteem could be a barrier in a world where

colleagues have their meetings in a forest and where communication has never been so crucial.

What we would have done after this study would have been to create another research paper regarding the implications of being extraverted vs introverted in our modern society. We believe that the difference between those two traits play a big role in achieving success. That's why finding out other attributes that participate to the introversion degree (or likewise, extraversion) would be really useful in order to determinate actions leading to a lower level of self-esteem.

References

Poropat, A.E. (2009). A meta-analysis of the five-factor model of personality and academic performance. *Psychological Bulletin*, 135(2), 322-338.

doi:10.1037/a0014996

https://pdfs.semanticscholar.org/6b9c/91107f309e107ee9383f99a6e1c7c32b47ac.pdf?_ga=2.105052870.457142755.1543079165-782851423.1543079165

http://hexaco.org/questionnaire_consent

http://ei.yale.edu/wp-content/uploads/2013/12/pub58_LopesBrackettNezlekSchutzSellinSalovey2004_EISocialInteraction.pdf

<https://openpsychometrics.org/tests/IPIP-BFFM/>

Appendices

Descriptive Statistics and Internal Consistency Reliabilities of the HEXACO-60 Scales in a College Student Sample

<u>HEXACO-60 Scales</u>	Self-Report Form				Observer Report Form			
	Total		Women	Men	Total		Women	Men
	(N=1126)		(N=691)	(N=429)	(N=1126)		(N=690)	(N=428)
	α	M (SD)	M (SD)	M (SD)	α	M (SD)	M (SD)	M (SD)
Honesty-Humility	.76	3.23 (.66)	3.31 (.64)	3.09 (.69)	.80	3.20 (.67)	3.28 (.65)	3.07 (.68)
Emotionality	.80	3.36 (.70)	3.66 (.55)	2.87 (.64)	.84	3.24 (.71)	3.55 (.59)	2.73 (.58)
Extraversion	.80	3.51 (.62)	3.48 (.64)	3.54 (.60)	.83	3.51 (.64)	3.47 (.63)	3.56 (.64)
Agreeableness	.77	3.10 (.63)	3.06 (.59)	3.16 (.68)	.84	3.20 (.70)	3.19 (.69)	3.21 (.72)
Conscientiousness	.76	3.47 (.61)	3.54 (.58)	3.34 (.63)	.84	3.40 (.68)	3.54 (.62)	3.17 (.72)
Openness to Experience	.78	3.49 (.67)	3.52 (.64)	3.44 (.71)	.81	3.26 (.70)	3.29 (.68)	3.20 (.73)

Note. Gender information is missing for 6 self-reports and 8 observer reports.