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Personality Types and Self-Reported Eating Habits

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Abstract

People with different personality types lead very different lifestyles; these personality types also affect the eating habits of an individual. Poor eating habits can lead to a myriad of health problems, including obesity and diabetes, while healthy eating habits can promote longevity. An associated problem is inaccurate reporting of eating habits by research participants and medical patients. While many studies have been conducted to examine the relationship between eating disorders and personality types, very few, if any, have examined the effects of personality types on actual eating habits as well as perceived eating habits. The proposed study will test for associations between personality traits and eating habits and inaccuracy in self-reported eating habits. Using the five factor personality model, participants will be given a questionnaire to assess the personality traits of openness, conscientiousness, extraversion, agreeableness, and neuroticism. Participants will then be given two more questionnaires to determine their actual eating habits and their perceived eating habits. The actual eating habits will be determined using the Self Reported Habit Index, a rigorous eating habit assessment that that can accurately determine the habits of an individual. Participants' perceived eating habits will be assessed using a questionnaire designed specifically for this study that will assess their general view of the healthiness of their own eating habits. Participants will be gathered via Amazon's Mechanical Turk. Through analysis of this data, conclusions will be drawn about the susceptibility of various personality traits to detrimental eating habits. Additionally, the discord between perceived and actual eating habits will be determined to provide insight into the attitudes of individuals regarding their own eating habits. This information will equip medical professionals and dieticians with knowledge about how to best accommodate patients with poor eating habits and provide them with top-notch treatment.

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Personality Types and Self-Reported Eating Habits

Introduction

Unhealthy eating has become a commonality in the United States, with fast food restaurants and processed foods becoming more popular than ever. The industrialized diet that is prevalent in the United States is notable for overconsumption of processed sugar, sodium, cholesterol, and saturated fats. Occasionally eating food that has these characteristics is not necessarily detrimental, but repeated eating behaviors involving the consumption of nutrient deficient foods that are high in sugar, sodium, and fat have been proven to have negative effects on the health of an individual. Unhealthy eating habits can also lead to a variety of chronic health problems, including diabetes, hypertension, and heart disease.

While it is no secret that unhealthy eating habits cause health problems, there is some confusion as to what makes individuals more susceptible to unhealthy eating habits. One way to search for the source of eating behaviors is to examine personality types. Claes et. al (2006) examined the correspondence of personality types to eating disorders and found that varying personality types was not specifically associated with certain eating disorders; however, a study examining the correlation between personality types and unhealthy eating altogether could provide more depth behind the cause of the eating disorders. Ghaderi and Scott (2000) also studied the relationship between eating disorders and personality types, finding that participants with eating disorders exhibited lower levels of agreeableness, conscientiousness, and emotional stability than participants who did not have eating disorders. Keller and Siegrist (2015) studied the effects of personality types of eating styles and found that the personality components of neuroticism, conscientiousness and extraversion all had significant impacts on the eating styles of the individual. These studies exemplify that a link between personality traits and eating behaviors, which will be integral in this thesis research.

This project investigates the relationship between different types of personalities and eating habits, both perceived and actual. It was hypothesized that individuals who better demonstrate the personality traits of extraversion, emotional stability, and

intellect/imagination will demonstrate more unhealthy eating habits, while individuals who better demonstrate the personality traits of agreeableness and conscientiousness will demonstrate healthier eating habits. Additionally, it was hypothesized that there will be a discord between actual and perceived eating habits that correlates to some of the personality traits.

Methods

Participants

Participants for this study were recruited using Mechanical Turk, a service offered online by Amazon. Participants were recruited from the premium pool of possible applicants, ensuring a representative and randomized sample population. There was a total of 287 responses. Of the respondents, 54.39% identified as male, 44.91% identified as female, and 0.70% identified as other. 65.5% of the respondents identified their ethnicity as white, 19.2% identified their ethnicity as Asian, and 5.6% identified their ethnicity as black. The average age was 34.5, with a standard deviation of 10.1. The most applicable demographic to this study was the BMI of the respondents, which was calculated using the height and weight of each participant. The average BMI of the respondents was 26.1, with a standard deviation of 6.2. This BMI generally considered healthy or slightly overweight, depending on the sex and age of the individual.

Materials

In order to investigate the relationship between different types of personalities and eating habits, a questionnaire was constructed that consisted of four separate sections. All of these surveys can be found in Appendix A. The first section was a demographic questionnaire in order to collect general information about the participants and ensure that the sample was randomized.

The second section included a shortened version of the International Personality Item Pool Test NEO (IPIP-NEO). This survey examined the personality traits of the participant based on the five factor model of personality (FFM), which examines the personality traits of emotional stability, intellect/imagination, conscientiousness, extraversion, and agreeableness. This portion of the study provided insight into the inclinations and dispositions of the individual, which was then compared to some of the

other variables that were recorded. This study utilized a modified version of the original test that was shorter in order to encourage participants to complete the entire survey. This survey is available in the public domain, and Johnson (2014) discusses the validity of the original, lengthy model as well as a new, shortened model.

The third section examined the actual eating habits of the individual using a shortened version of the Self Reported Habit Index (SRHI). The SRHI is an assessment that can accurately measure the eating habits of an individual. Verhoeven et. al (2012) discuss the use of the Self Reported Habit Index when measuring unhealthy snacking habits in their study. The SRHI was used because it would be nearly impossible to observe and record longitudinal data of a participant's eating habits. The SRHI utilized in this study was shortened to twelve questions in order to encourage participants to complete the entire survey.

In the fourth section, the perceived eating habits (PEH) of the participant were measured. A survey designed specifically for this study was created in order to gather the most accurate data that measures the participants' perceptions of their eating habits. Although the questions were asked differently, this survey was designed so that the results could be directly compared to the results from the Self Reported Habit Index used in this study. This section was twelve questions long, the same length as the SRHI. This section allowed a visualization of the discord between the self-reported eating habits of an individual and their perceived eating habits.

Procedure

After providing informed consent, participants clicked on a link in the Mechanical Turk post that directed them to the survey on surveymonkey.com. This survey included the four aforementioned sections listed above, as well as a debriefing page. Data was then downloaded from the online survey as an excel file; this data was sorted using excel and copied into SPSS in order to run analyses. Correlation tests were run and reviewed amongst the variables in order to determine the relatedness of the variables.

Results

Analyses from this study demonstrated a few different strong correlations. Tables and graphs that illustrate these correlations can be found in Appendix B. The strongest

correlation between variables was demonstrated between the Self-Reported Habit Index and Perceived Eating Habits surveys; these two variables showed a .609 correlation with .000 significance. Additionally, there were strong negative correlations seen between the SRHI and every personality factor. The personality factor of extraversion presented with a significant correlation at the 0.05 level, while all other personality factors presented with a significant correlation at the 0.01 level when analyzed with the SRHI. There was also a strong positive correlation demonstrated between BMI and the SRHI. Furthermore, the Perceived Eating Habits survey showed a few significant correlations. The personality factors of agreeableness, conscientiousness, and intellect/imagination all showed significant negative correlations at the 0.01 level. There was no correlation between BMI and the perceived eating habits of the participants.

Discussion

The correlations uncovered in this study illuminated some interesting findings. Table 1 in Appendix B provides a visualization of the correlations between the variables measured in this study. I had expected that there would be a slight amount of discord between the SRHI and PEH, but the correlation demonstrated a higher level of discord than I had initially expected. This could possibly demonstrate that the perception of the eating habits of some individuals does not entirely align with their true eating habits.

Additionally, I had expected that there would be some negative correlations between some of the personality traits and both the SRHI and PEH, but I did not expect that there would be strong negative correlations between nearly all of them. The strongest negative correlations were seen between the SRHI and personality factors of conscientiousness, emotional stability, and agreeableness. Therefore, if an individual was less conscientious, was more emotionally unstable, or was less agreeable, they were more likely to demonstrate unhealthy eating habits. Additionally, these three personality factors also showed strong negative correlations when compared to the PEH; therefore, it is possible that these personality traits could lead to higher likelihood of both unhealthy eating habits and one's perception that their eating habits are unhealthy.

Overall, lower scores on the IPIP-NEO test led to higher incidences of unhealthy eating. This means that if an individual was less agreeable, less conscientious, less

extraverted, had less emotional stability, or had less intellect/imagination, they were more likely to have unhealthy eating habits. Moreover, participants who scored lower with the personality traits of agreeableness, conscientiousness, and intellect/imagination demonstrated that they perceived their eating habits to be more unhealthy.

Limitations

One of the main limitations of this study was the need to use the Self-Reported Habit Index; although this measure has been found to accurately measure the habits of an individual, it would have been better to observe participants and record their true eating habits. However, this would have been nearly impossible without many more resources, and thus the Self-Reported Habit Index had to be used in order to carry out this study. Additionally, this study was limited by the online surveys. Without actively monitoring the participants in person, it is possible that the participants skipped through the survey and randomly clicked on answers. However, a survey conducted in person would not have feasibly been able to provide the same level of randomization obtained by using the online Mechanical Turk service.

Further Research

Further research could investigate the discord between the Self-Reported Habit Index and the Perceived Eating Habits Survey; although these two variables demonstrated a strong correlation, it is still interesting that there was a bit of discord between them. This could possibly demonstrate that individuals often have a different perception of themselves as compared to their true habits; it could also demonstrate the effectiveness of the Self-Reported Habit Index, illustrating that the habits of an individual can accurately be reported utilizing a survey. Further research could also involve a longitudinal study that required participants to evaluate their eating habits every few months to monitor changes and check for corresponding personality trait changes.

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Appendix A: Study Questionnaire

Study Questionnaire

A. Demographic variables (5 items)
B. Shortened IPIP-NEO (30 items)
C. Self-Reported Habit Index (12 items)
D. Perceived Eating Habits (12 items)

A. Demographics. Participant instructions: "*Please answer each of the following questions*"

  a. What is your age? _____
  b. How would you describe your ethnicity? Check all that apply
      i. Black
      ii. White
      iii. Latina/Latino
      iv. Asian
      v. Pacific Islander
      vi. Multi-ethnic
      vii. Native American / Alaskan Indian
      viii. Other
  c. What is your gender? _____
  d. How tall are you? _____
  e. What is your current weight? _____

B. IPIP-NEO. Participant instructions: "*Please answer each of the following questions based on their accuracy*"

  Response options:
    1. Very Accurate
    2. Accurate
    3. Neither accurate nor inaccurate
    4. Inaccurate
    5. Very Inaccurate

  Questions listed below are grouped by how they are keyed for each factor and will not be listed in this order in the final survey.

  a. Factor I: Extraversion
      i. Positive
          1. Am the life of the party.

                    2. Feel comfortable around people.
                    3. Start conversations.
        ii.   Negative
                    1. Don't talk a lot.
                    2. Keep in the background.
                    3. Have little to say.
  b. Factor II: Agreeableness
        i.   Positive
                    1. Am interested in people.
                    2. Sympathize with others' feelings.
                    3. Have a soft heart.
        ii.   Negative
                    1. Am not really interested in others.
                    2. Insult people.
                    3. Feel little concern for others
  c. Factor III: Conscientiousness
        i.   Positive
                    1. Am always prepared.
                    2. Pay attention to details.
                    3. Get chores done right away.
        ii.   Negative
                    1. Leave my belongings around.
                    2. Make a mess of things.
                    3. Often forget to put things back in their proper place.
  d. Factor IV: Emotional stability
        i.   Positive
                    1. Am relaxed most of the time.
                    2. Seldom feel blue.
                    3. Seldom get mad.
        ii.   Negative
                    1. Get stressed out easily.
                    2. Worry about things.
                    3. Am easily disturbed.
  e. Factor V: Intellect/Imagination
        i.   Positive
                    1. Have a rich vocabulary.
                    2. Have a vivid imagination.
                    3. Have excellent ideas.
        ii.   Negative
                    1. Have difficulty understanding abstract ideas.

2. Am not interested in abstract ideas.
3. Do not have a good imagination.

C. **Self-Reported Habit Index.** Participant instructions: "*Please answer each of the following questions*"

Eating unhealthy "junk" food is something…
   a. I do frequently.
   b. I do automatically.
   c. I do without having to consciously remember.
   d. that makes me feel weird if I do not do it.
   e. I do without thinking.
   f. that would require effort not to do it.
   g. that belongs to my daily routine.
   h. I start doing before I realize I'm doing it.
   i. I would find hard not to do.
   j. I have no need to think about doing.
   k. that's typically "me."
   l. I have been doing for a long time.

D. **Perceived Eating Habits.** Participant instructions: "*Please answer each of the following questions*"

I think that I…
   a. Often eat unhealthy foods.
   b. Do not consciously choose to eat unhealthy foods
   c. Commonly eat processed "junk" foods, like potato chips.
   d. Commonly drink soda or other drinks high in sugar.
   e. Eat too many calories each day.
   f. Rarely eat fruits and vegetables.
   g. Eat healthy foods with each meal.
   h. Have a diet that will promote health and longevity.
   i. Eat foods high in sugar.
   j. Am identifiable as a healthy eater.
   k. Enjoy the way I eat.
   l. I have recently changed the way I eat.

Informed Consent to Participate in a Research Project

Project Title:
Personality Types and Self-Reported Eating Habits

Investigator:
Jacob Burmeister, PhD

Description of Study:
Participants will complete a survey with questions that ask about personality traits, actual eating habits, and perceived eating habits.

Adverse Effects and Risks:
There are no anticipated risks in participating in this study.

Duration of Study:
The study will take approximately 10 minutes to complete.

Payment:
You will receive $1.00 for completing the survey

Confidentiality of Data:
Your identifying information will not be linked with your data. Your data will be kept in a locked laboratory on a password protected computer with an encrypted hard drive. Only the investigators named above will have access to your data. Your name will not be revealed in any document resulting from this study.

Contact Person:
Participants may contact Jacob Burmeister, PhD jburmeister1@udayton.edu. If you have questions about your rights as a research participant you may also contact the chair of the Research Review and Ethics Committee, Benjamin Kunz, PhD 937-229-2789, bkunz1@udayton.edu.

Consent to Participate:
I have voluntarily decided to participate in this study. The investigator named above has adequately answered any and all questions I have about this study, the procedures involved, and my participation. I understand that the investigator named above will be available to answer any questions about research procedures throughout this study. I also understand that I may voluntarily terminate my participation in this study at any time and still receive full credit. I also understand that the investigator named above may

terminate my participation in this study if s/he feels this to be in my best interest. In addition, I certify that I am 18 (eighteen) years of age or older.

By clicking NEXT and answering questions you are indicating that you consent to participate in this study.

The University of Dayton supports researchers' academic freedom to study topics of their choice. The topic and/or content of each study are those of the principal investigator(s) and do not necessarily represent the mission or positions of the University of Dayton.

Appendix B: Correlation Table and Graphs

Table 1

		Age	BMI	Extraversion	Agreeablene ss	Conscientiou sness	Emotional_St ability	Intellect_Ima gination	SHRI	PEH
Age	Pearson Correlation	1	.213**	.015	.305**	.208**	.234**	.108	-.207**	-.196**
	Sig. (2–tailed)		.000	.805	.000	.000	.000	.069	.001	.001
	N	287	283	285	282	283	281	286	274	276
BMI	Pearson Correlation	.213**	1	-.055	.073	-.021	-.026	.073	.166**	-.101
	Sig. (2–tailed)	.000		.357	.226	.730	.671	.221	.006	.096
	N	283	283	281	278	279	277	282	271	272
Extraversion	Pearson Correlation	.015	-.055	1	.331**	.087	.263**	.331**	-.119*	.025
	Sig. (2–tailed)	.805	.357		.000	.148	.000	.000	.049	.682
	N	285	281	285	282	281	279	284	273	275
Agreeableness	Pearson Correlation	.305**	.073	.331**	1	.360**	.316**	.367**	-.258**	-.187**
	Sig. (2–tailed)	.000	.226	.000		.000	.000	.000	.000	.002
	N	282	278	282	282	278	276	281	271	272
Conscientiousness	Pearson Correlation	.208**	-.021	.087	.360**	1	.414**	.312**	-.336**	-.225**
	Sig. (2–tailed)	.000	.730	.148	.000		.000	.000	.000	.000
	N	283	279	281	278	283	277	283	271	273
Emotional_Stability	Pearson Correlation	.234**	-.026	.263**	.316**	.414**	1	.252**	-.295**	-.077
	Sig. (2–tailed)	.000	.671	.000	.000	.000		.000	.000	.203
	N	281	277	279	276	277	281	280	268	271
Intellect_Imagination	Pearson Correlation	.108	.073	.331**	.367**	.312**	.252**	1	-.257**	-.201**
	Sig. (2–tailed)	.069	.221	.000	.000	.000	.000		.000	.001
	N	286	282	284	281	283	280	286	273	275
SHRI	Pearson Correlation	-.207**	.166**	-.119*	-.258**	-.336**	-.295**	-.257**	1	.609**
	Sig. (2–tailed)	.001	.006	.049	.000	.000	.000	.000		.000
	N	274	271	273	271	271	268	273	274	267
PEH	Pearson Correlation	-.196**	-.101	.025	-.187**	-.225**	-.077	-.201**	.609**	1
	Sig. (2–tailed)	.001	.096	.682	.002	.000	.203	.001	.000	
	N	276	272	275	272	273	271	275	267	276

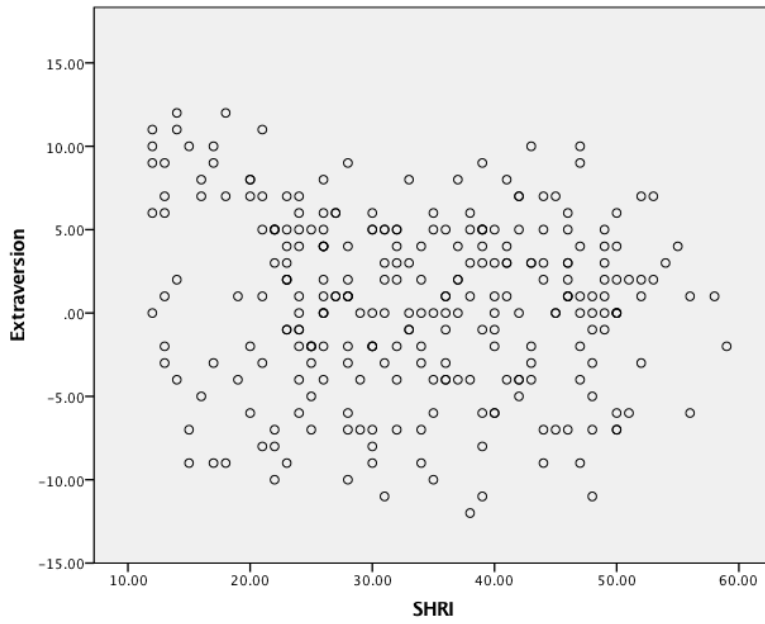**. Correlation is significant at the 0.01 level (2–tailed).
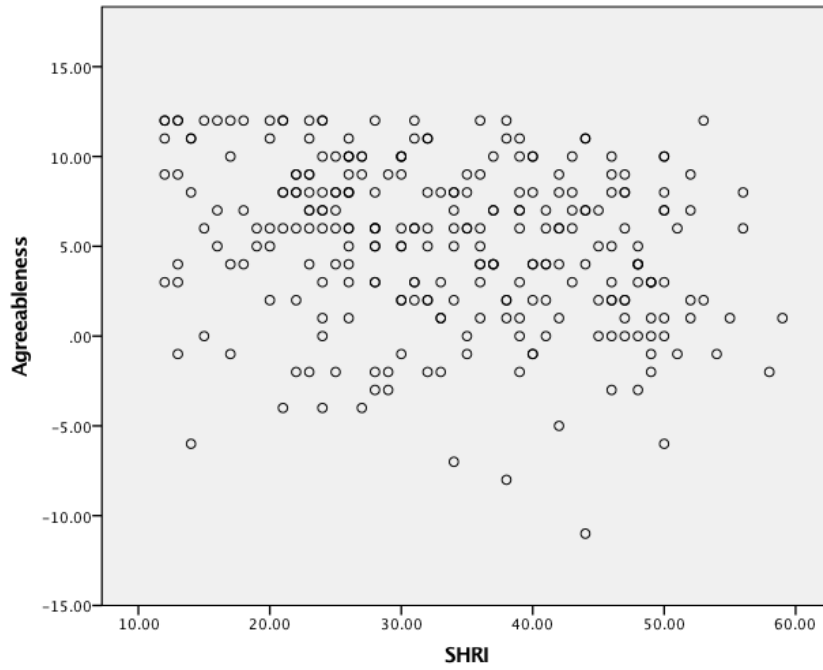
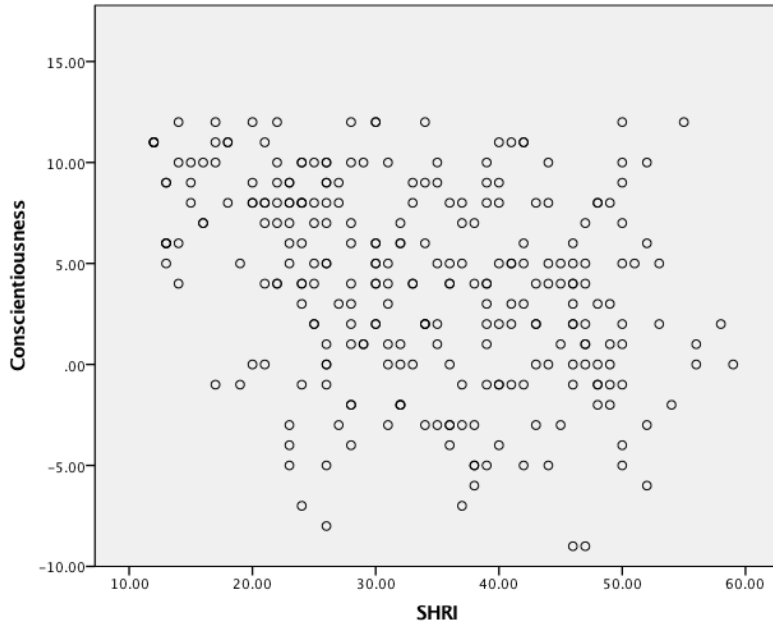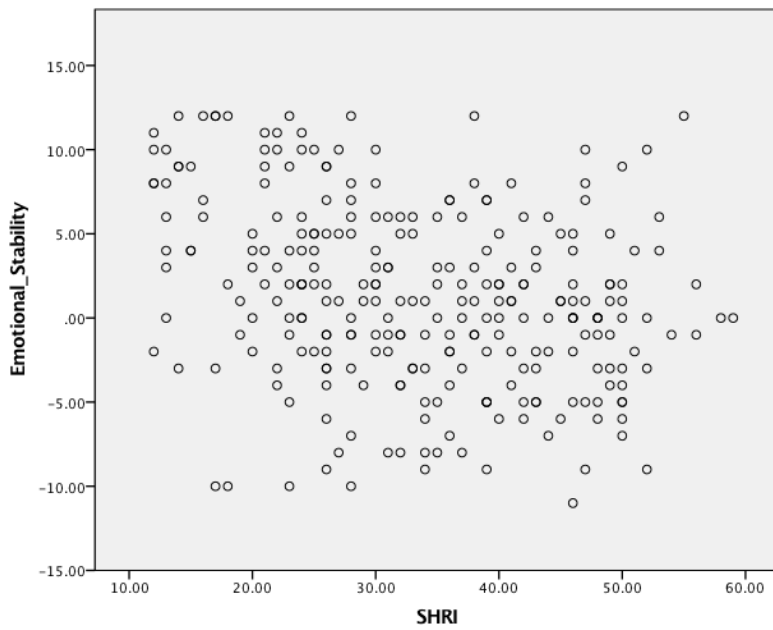*. Correlation is significant at the 0.05 level (2–tailed).
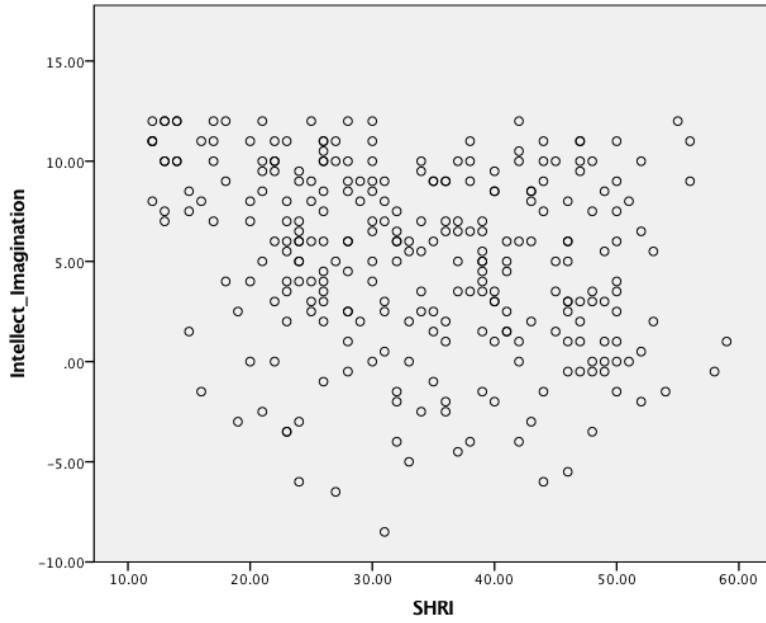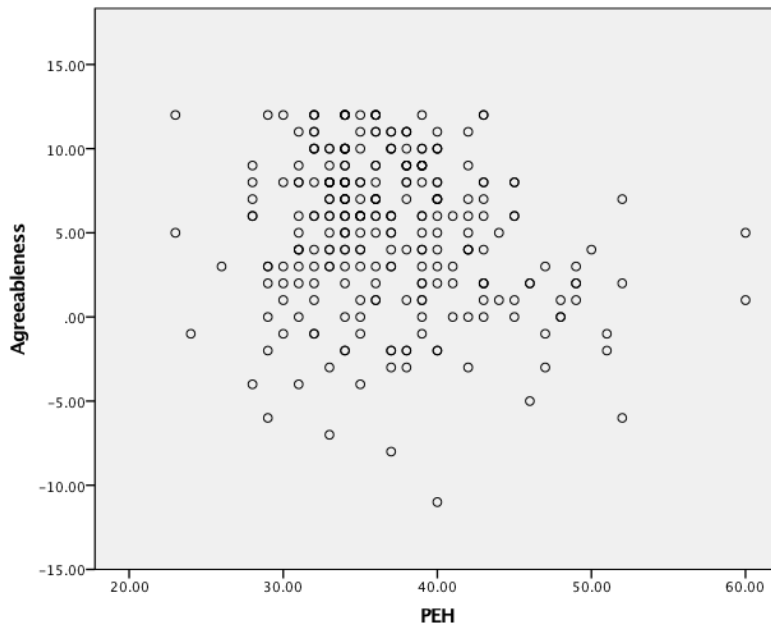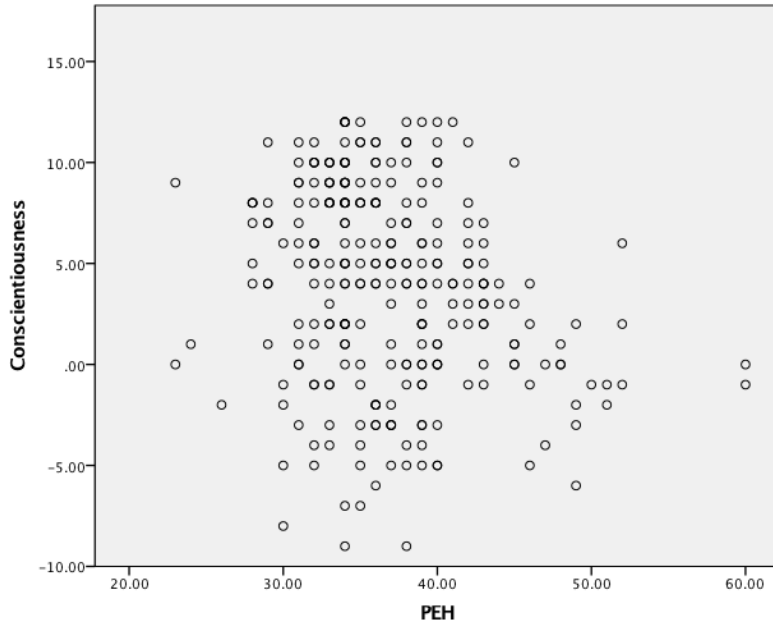
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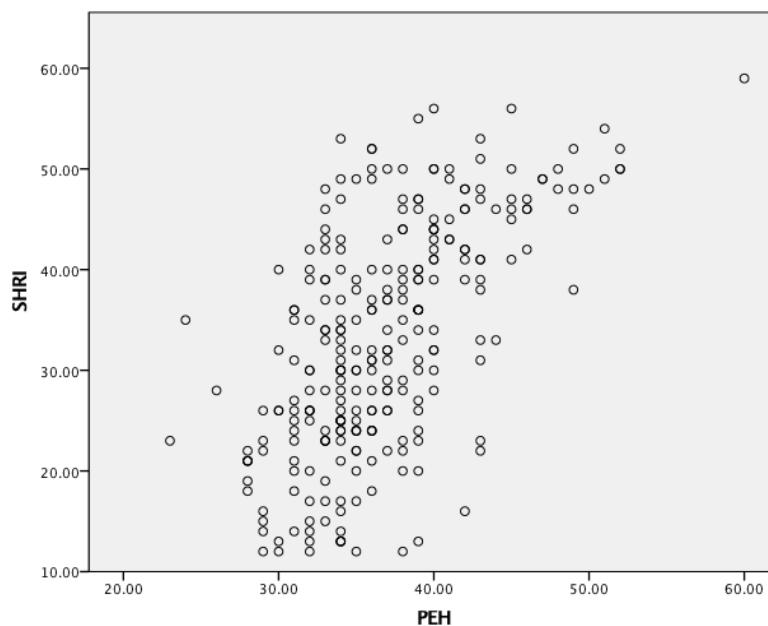
Graph 2

Graph 3

Graph 4

Graph 5

Graph 6

Graph 7

Graph 8

Graph 9