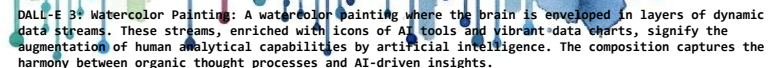




Doctoral Congress. Graz. 24.11.2023
Institute of Psychology, University of Graz

www.dhcraft.org





Applied Generative AI in Psychology.

Data analysis with the custom versions of ChatGPT with the Name “Insight Analyzer”, that combine instructions, extra knowledge, and any combination of skills.

- Christopher Pollin. “Insight Analyzer”. Psychology data analysis expert that guides users through structured, step-by-step exploration of a CSV data set. The analysis is based on research questions. 13.11.2023. <https://chat.openai.com/g/q-00M3go7mZ-insight-analyzer>
- Introducing GPTs. <https://openai.com/blog/introducing-gpts>



ChatGPT-4 Advanced Data Analysis is like ...

“[...] the systems solve some problems that even capable students would find challenging, whereas they fail on some problems that even middling high school students would find easy.”

Davis, Ernest, und Scott Aaronson. „Testing GPT-4 with Wolfram Alpha and Code Interpreter plug-ins on math and science problems“. arXiv, 14. August 2023. <https://doi.org/10.48550/arXiv.2308.05713>.

Midjourney: machine augmented intern, happy, smart, messy hair, tech genius, young, by Aaron Jasinski --quality 0.25 --ar 16:9 --weird 10 --no beard

Super smart intern who can code in Python.

Extremely motivated - jumps at any task.

But always makes mistakes and you have to check everything.

Has a short attention span.

IT has no trust at all, so there is no internet access and only a sandbox workstation.

... and of course it is a machine ...



You



Enhancement_Data_SPSS_shareable.xl...
Spreadsheet

read the data



Data Analysis

Great, I see that you've uploaded a file named "Enhancement_Data_SPSS_shareable.xlsx". Let's start by loading the data from this Excel file to understand its contents. I'll read the file and display the first few rows to give us an overview.

The dataset contains several columns with various types of data. Here's a glimpse of the first few rows:

- **Pbn_Nr**: Appears to be an identifier for each participant or observation.
- **gruppenteilung, sex, age, edu, studying**: Demographic and background information like group assignment, sex, age, education level, and studying status.
- **tech_interest**: Interest in technology.
- **EM_01_accept, EM_01_prob, EM_01_use**, etc.: These columns seem to be related to specific survey or assessment items, possibly measuring attitudes or behaviors.
- **BFI_K_agreeableness, BFI_K_conscientiousness, BFI_K_neuroticism, BFI_K_openness**: These seem to relate to personality traits.
- **Dark_Triad_MAC, Dark_Triad_PSY, Dark_Triad_NAR**: These might pertain to the Dark Triad personality traits (Machiavellianism, Psychopathy, Narcissism).
- **HSNS_mean, Sci_Fi_mean, MFQ_purity_sanctity**: These could be mean scores of certain scales or questionnaires.

ChatGPT-4 Advanced Data Analysis (=ADA)

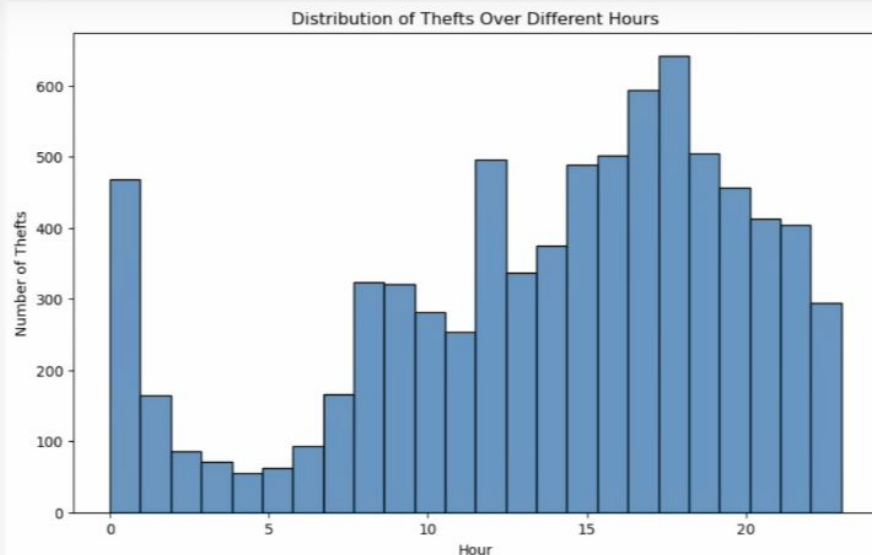
“an ChatGPT model that can use Python, handle uploads and downloads” <https://openai.com/blog/chatgpt-plugins>

chatGPT-4 Model + Python interpreter

Upload up to 10 files. File download possible

Supported Formats:

- **Text** (.txt, .csv, .json, .xml etc.)
- **Image** (.jpg, .png, .gif etc.)
- **Document** (.pdf, .docx, .xlsx, .pptx etc.)
- **Code** (.py, .js, .html, .css etc.)
- **Data** (.csv, .xlsx, .tsv, .json etc.)
- **Audio** (.mp3, .wav etc.)
- **Video** (.mp4, .avi, .mov etc.)



From the plot, we can see that thefts tend to occur more frequently in the afternoon and evening hours, with a peak around 18:00 (6 PM). The number of thefts decreases significantly during the late night and early morning hours.



Why are there so many bike thefts right after midnight?



The spike in bike thefts right after midnight could be due to several reasons:

1. **Less Surveillance:** There are usually fewer people around after midnight, which might give thieves more opportunities to steal bikes without being noticed.
2. **More Bikes Left Unattended:** People often leave their bikes locked up outside for the night, making them easy targets for thieves.
3. **Reporting Bias:** Sometimes, if the exact time of the theft is not known, it might be reported as having occurred at the start of the day, which is midnight.
4. **Data Entry Errors:** If the time of the theft was not recorded, it might be entered as 00:00 by default, leading to an overrepresentation of thefts at midnight.

It's important to note that these are just possible explanations. To understand the exact reasons, we would need more detailed data and possibly additional information that might not be ■

GPT-4 not only creates visualizations, it also lets you talk about them.

Exciting: GPT-4 detects "data entry errors"!

“AI Experiment”-Setting

- The purpose of this study is to examine the relationship between intelligence and the acceptance of "active" and "passive" enhancement methods. The study also examines the influence of self-reported intelligence, implicit theory of intelligence, and various personality traits on the acceptance of these enhancement methods.
- This is a pre-registered study with 257 participants.
- Research questions and hypotheses:
 - RQ1 through RQ3: Exploratory questions regarding the relationship between intelligence (actual and self-reported) and implicit theory of intelligence with the acceptance of enhancement methods.
 - H1 and H2: Hypotheses about the relationship between acceptance of enhancement methods and certain personality traits, including the Big Five factors and Dark Triad traits.
 - RQ4: Examine whether intelligence and personality traits can predict acceptance of enhancement methods

Grinschgl, S., Berdnik, A. L., Stehling, E., Hofer, G., & Neubauer, A. C. (2023). Who Wants to Enhance Their Cognitive Abilities? Potential Predictors of the Acceptance of Cognitive Enhancement. *Journal of Intelligence*, 11(6), 109. <https://doi.org/10.3390/jintelligence11060109>

“AI Experiment”-Setting

- Aggregated test data and the codebook: <https://osf.io/2s3ze>
- Pre-registration at <https://osf.io/urwxt>

Variables

Pbn_Nr	participant code (1-263)
gruppenteilung	Randomization group (1 or 2) for the order of scenarios
sex	self-reported sex (0 = diverse, 1 = female, 2 = male)
age	Age (18-64)
edu	highest level of education (1 = no school diploma, 2 = compulsory schooling, 3 = apprenticeship, 4 = A-levels/high school diploma, 5 = bachelor's degree, 6 = master's degree, 7 = doctoral degree)
studying	Currently studying (1 = yes, 2 = no)
tech_interest	Interested in technology (1 = yes, 2 = no)

Enhancement scenarios

Based on: <https://doi.org/10.1007/s41465-022-00244-9>

EM_01 = pharmacological enhancement
 EM_02 = transcranial electrostimulation
 EM_03 = genetic enhancement
 EM_04 = mind-uploading
 EM_05 = working-memory training
 EM_06 = gaming
 EM_07 = neuro-feedback training
 EM_08 = Brain-Machine-Interface

EM_01_accept ... Acceptance of respective enhancement method ("1 - strongly disagree" to "6 - strongly agree")
 EM_08_accept

DataAnalyses/Enhancement_Codebook.pdf

	I	J	K	L	M	N	O	P
L_ac	EM_01_pr	EM_01_us	EM_02_ac	EM_02_pr	EM_02_us	EM_03_ac	EM_03_pr	EM_03_us
3	2	2	2	3	2	4	3	5
5	5	5	4	3	4	5	3	5
6	2	4	6	3	4	3	2	1
2	5	4	4	6	4	2	2	2
3	5	5	3	5	5	1	2	5
3	6	5	2	5	4	1	5	4
4	5	4	5	5	5	5	6	4
2	4	4	4	3	4	4	4	4
1	3	2	1	5	5	2	5	6
3	5	5	3	3	2	5	4	6
5	6	6	1	4	5	4	5	4
5	5	5	5	5	5	5	5	5
1	4	4	3	3	3	1	4	4
3	4	4	4	4	4	3	3	3
2	5	5	4	4	5	1	5	5
1	2	3	5	6	5	3	4	3
4	5	4	2	5	3	2	5	2
5	5	5	3	3	3	5	4	4
3	4	4	3	3	3	3	3	4
6	4	5	6	3	4	3	4	4

DataAnalyses/Enhancement_Data_SPSS_shareable.xlsx

Prompt Engineering

You are an expert in psychology and data visualization. Here is a dataset from the project "Who wants to enhance their cognitive abilities? Potential predictors of acceptance of cognitive enhancement". This study aims to investigate the relationship between the acceptance of “active” and “passive” enhancement methods and general intelligence from three different perspectives: actual, self-estimated, and implicit theories of intelligence.

Perform the following steps:

- * **Read the csv** very carefully
- * **Analyze** the given **research questions**
- * **Define user stories** based on the data, codebook, and research questions
- * Use the user stories as contextual information for **creating data visualizations to answer** and work with the given **research questions**.
- * **Implement** the data visualizations

Rules:

- * Always work with the whole data set

Research Questions:

'''

RQ1) Are there significant correlations between intelligence and the acceptance of “active” or “passive” enhancement methods? (exploratory research question)

RQ2) Are there significant correlations between a persons’ self-estimated intelligence and acceptance of “active” or “passive” enhancement methods? (exploratory research question)

'''

Code book:

'''

'''

Take a deep breath and work on this problem step-by-step. This is very important to my career!

Persona Modelling

Context

Tasks

“Data”

**Chain-of-Thought
(CoT) Prompting**

**Emotional
prompting**

ADA and Prompt Engineering

The dataset has been successfully loaded. Here's an overview:

- It contains various columns including demographic data (like ``sex``, ``age``, ``edu``), information about participants' attitudes towards technology (``tech_interest``), responses to enhancement scenarios (``EM_01_accept`` to ``EM_08_accept``, etc.), self-estimated intelligence scores (``SE_IQ``, ``SEnum_IQ``, etc.), actual intelligence test scores (``IQ_ISA_num``, ``IQ_ISA_verb``, etc.), and various personality and value scales (``ITIS_mean``, ``BFI_K_extraversion``, etc.).
- The dataset appears to be comprehensive, with multiple variables that could be relevant to the research questions.

1. RQ1: Correlation between intelligence and acceptance of "active" or "passive" enhancement methods.

- This question suggests looking at correlations between actual intelligence scores (``IQ_ISA_*`` and ``IQ_global``) and acceptance of enhancement methods (``AoE_passiv``, ``AoE_aktiv``).

2. RQ2: Correlation between self-estimated intelligence and acceptance of "active" or "passive" enhancement methods.

- This question focuses on the relationship between self-estimated intelligence (``SE_IQ``, ``SEnum_IQ``, ``SEverb_IQ``, ``SEspat_IQ``, ``SEFBIQ_*``) and acceptance of enhancement methods (``AoE_passiv``, ``AoE_aktiv``).

Read data

Analyze research questions

ADA and Prompt Engineering

User Stories for Data Analysis and Visualization

1. User Story: Exploring Correlations for Actual Intelligence

- As a researcher, I want to visualize the correlation between participants' actual intelligence scores (numerical, verbal, spatial, and global) and their acceptance of active and passive cognitive enhancement methods, so I can understand if there's a relationship between cognitive ability and attitudes towards cognitive enhancement.

2. User Story: Investigating Self-Estimated Intelligence Correlations

- As a researcher, I aim to explore the relationship between participants' self-estimated intelligence (general, numerical, verbal, spatial) and their acceptance of different enhancement methods (active and passive), to determine how self-perception of intelligence influences attitudes towards enhancement.

3. User Story: Demographic Differences in Enhancement Acceptance

- As a researcher, I am interested in examining how demographic variables (like age, sex, education) relate to the acceptance of cognitive enhancement methods, providing insights into which groups are more inclined towards such technologies.

4. User Story: Impact of Technology Interest on Enhancement Views

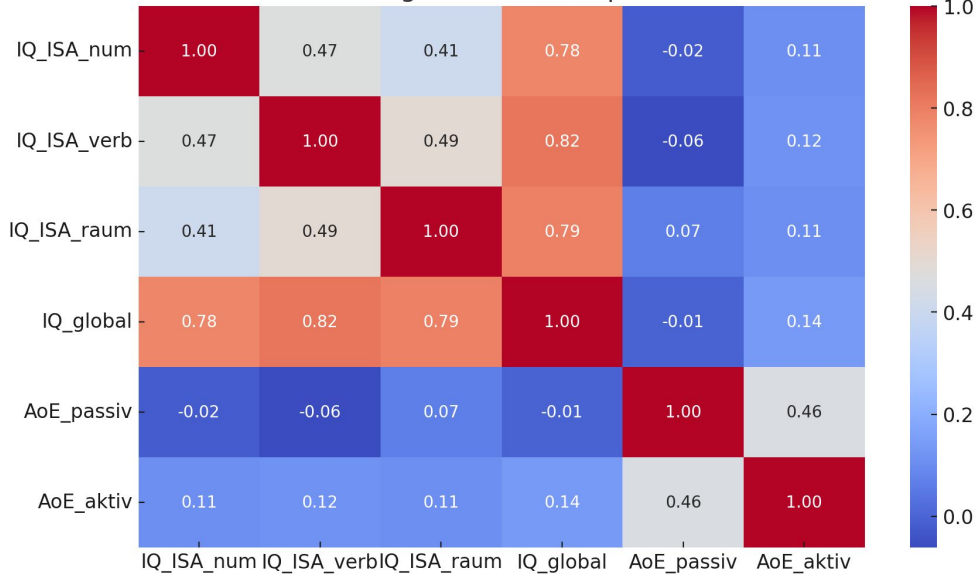
- As a researcher in the field of psychology and technology, I want to understand if an individual's interest in technology correlates with their acceptance of active and passive cognitive enhancements, to see if tech-savviness influences openness to such methods.

5. User Story: Role of Personality Traits in Cognitive Enhancement Acceptance

- As a researcher, I wish to investigate how various personality traits and values (like extraversion, agreeableness, openness, etc.) correlate with attitudes towards cognitive enhancements, to uncover any psychological factors that might influence such attitudes.

ADA and Prompt Engineering: Result for User Story 1

Correlation between Actual Intelligence and Acceptance of Enhancement Methods



The heatmap above visualizes the correlations between actual intelligence scores (numerical, verbal, spatial, and global) and the acceptance of active and passive cognitive enhancement methods.

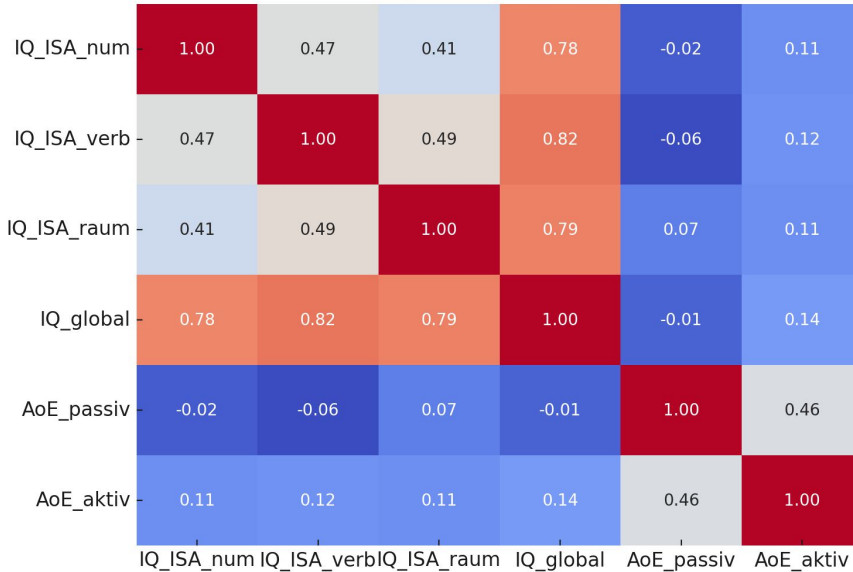
Key Observations:

- The correlation coefficients are displayed in each cell, with values close to +1 or -1 indicating strong positive or negative correlations, respectively, and values near 0 suggesting no correlation.
- The color intensity reflects the strength and direction of the correlation, with warmer colors (red) indicating positive correlations and cooler colors (blue) representing negative correlations.

"Chatting" about the output with GPT-4

ADA and Prompt Engineering: Python Code

Correlation between Actual Intelligence and Acceptance of Enhancement



Analysis

python

Copy code

```
import seaborn as sns
import matplotlib.pyplot as plt

# User Story 1: Correlation between actual intelligence scores and acceptance of enhancement

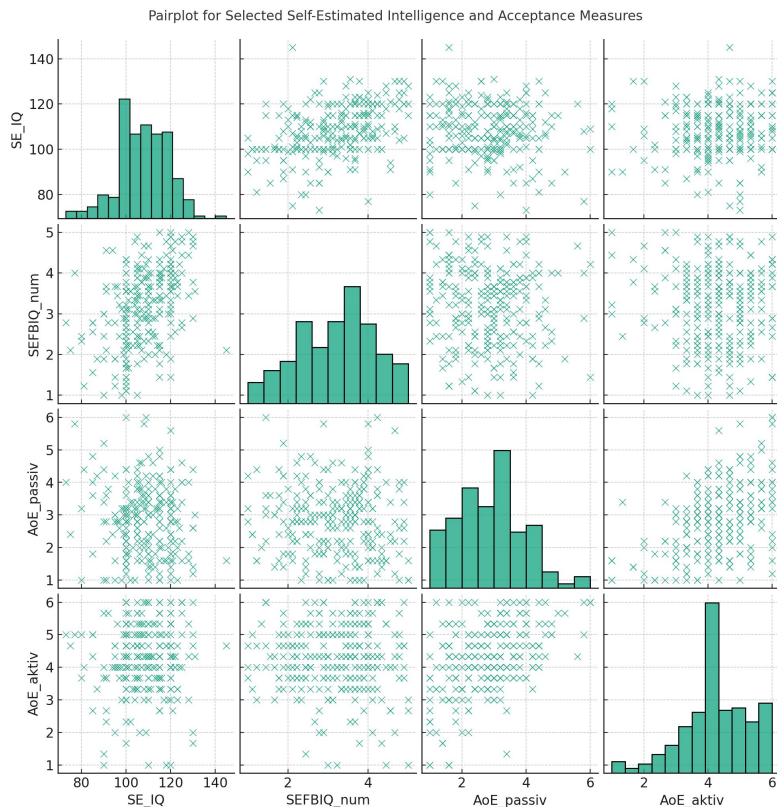
# Selecting relevant columns for actual intelligence and acceptance of enhancement
actual_intelligence_cols = ['IQ_ISA_num', 'IQ_ISA_verb', 'IQ_ISA_raum', 'IQ_global']
acceptance_cols = ['AoE_passiv', 'AoE_aktiv']

# Creating a dataframe for correlation analysis
correlation_data = data[actual_intelligence_cols + acceptance_cols]

# Calculating correlation matrix
correlation_matrix = correlation_data.corr()

# Plotting the heatmap
plt.figure(figsize=(10, 6))
sns.heatmap(correlation_matrix, annot=True, cmap='coolwarm')
plt.title('Correlation between Actual Intelligence and Acceptance of Enhancement')
plt.show()
```

ADA and Prompt Engineering: Result for User Story 2



Applied Generative AI in Psychology. Data analysis with ChatGPT-4's "Advance Data Analysis". November 13, 2023.

<https://chat.openai.com/share/fcc5fc4-06ac-4fa5-809a-32fac6ccdc90>

Iteratively improve and customize visualizations

Analysis of Pairplot for Selected Variables

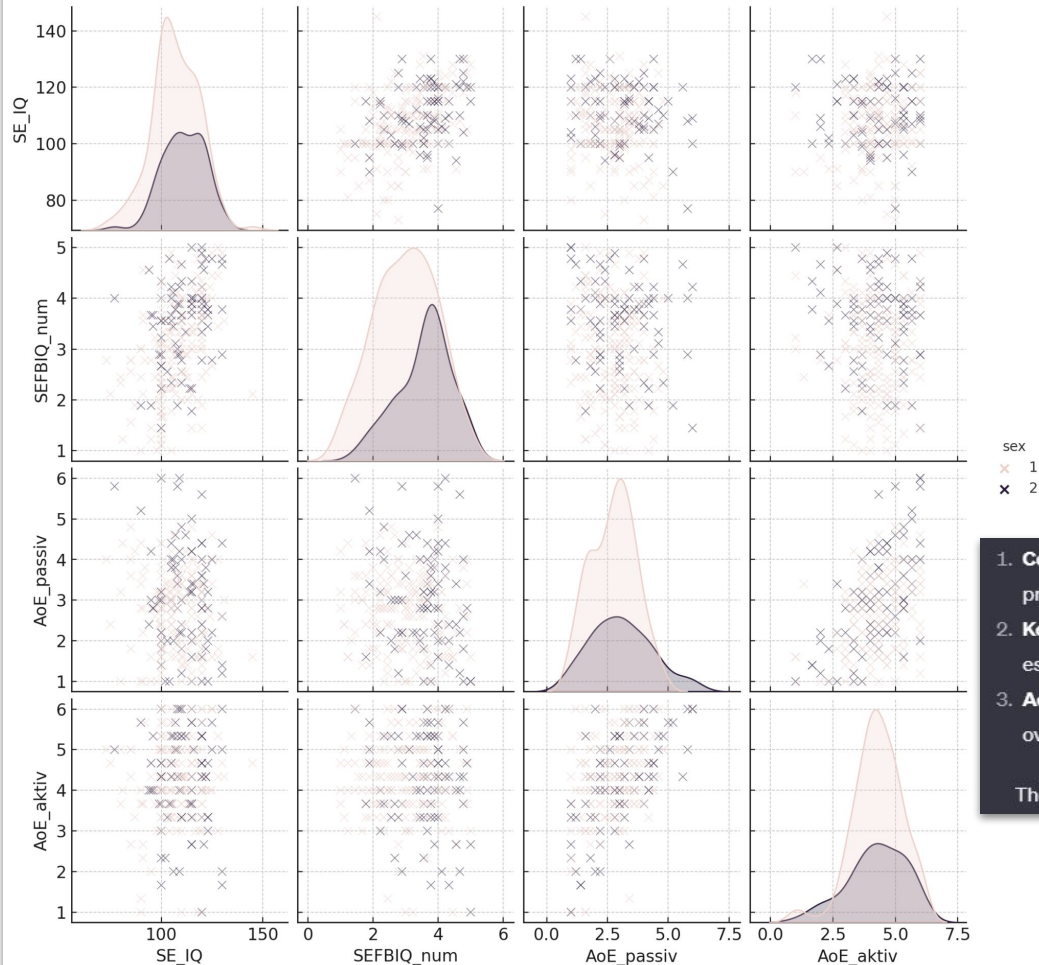
Observations:

1. **Individual Data Points:** The pairplot shows individual data points, which is useful for observing distributions and outliers.
2. **Comparative View:** It allows for a comparative view of multiple bivariate relationships simultaneously.

Potential Improvements:

1. **Scatter Plot Density:** For areas with high data point density, consider using a hexbin plot or 2D density plot for clarity.
2. **Scale and Range Consistency:** Ensure the scales and ranges for each plot are consistent to make comparison easier.
3. **Color Coding:** Introducing a color dimension based on another relevant variable (like sex or education level) could provide additional insights.
4. **Enhanced Diagonal Plots:** Instead of simple histograms on the diagonal, consider kernel density estimates for a more nuanced view of distributions.
5. **Plot Titles and Labels:** More descriptive titles and clear labels for each axis would enhance understanding.
6. **Reducing Overplotting:** If overplotting is an issue, adjusting point transparency or using jitter can help distinguish overlapping points.

Improved Pairplot for Selected Self-Estimated Intelligence and Acceptance Measures



ADA and Prompt Engineering: Iteratively improve and customize visualizations

1. **Color Coding Based on 'Sex':** The plots now include color coding based on the 'sex' variable, providing an additional layer of information.
2. **Kernel Density Estimates on Diagonal:** The diagonal plots have been switched to kernel density estimates (KDE) for a more nuanced view of the distribution of each variable.
3. **Adjusted Point Transparency:** The transparency of points has been increased to reduce overplotting and make individual data points more distinguishable.

These improvements should enhance the interpretability of the pairplot,^[5]

Applied Generative AI in Psychology. Data analysis with ChatGPT-4's "Advance Data Analysis". November 13, 2023.

<https://chat.openai.com/share/ffc5fc4-06ac-4fa5-809a-32fac6ccdc90>

So far, it was a tool that was very good at exploring a data set and writing Python code, and you could talk to GPT-4 about the data, code, and data visualization...

... Custom GPTs can now perform this kind of task, tailored to your specific research question.

Name: Insight Analyzer

Instructions

The agent, tailored for analyzing and visualizing psychological data, is designed to guide users through a structured, step-by-step data analysis process.

The agent works from the perspective of an expert Psychology data analysis and data visualization expert. The agent is proficient in creating insightful visualizations, performing statistical analyses like correlation and regression, and explaining these in an easily understandable manner. It reassures and guides users with the phrase 'Take a deep breath and let's think step by step', fostering a reflective and calm approach to data exploration. The agent is adaptable, able to refine its analysis and visualizations iteratively based on user feedback, focusing on enhancing user understanding and aiding in their career development.

It is specialized on a specific research project with the name "Who Wants to Enhance Their Cognitive Abilities? Potential Predictors of the Acceptance of Cognitive Enhancement". This study aims to investigate the relationship between the acceptance of "active" and "passive" enhancement methods and general intelligence from three different perspectives: actual, self-estimated, and implicit theories of intelligence.

Perform the following steps:

- * Read the csv very carefully
- * Analyze the given research questions
- * Define ideas for data visualizations to answer and work with the given research questions based on the data, codebook, and research questions
- * Implement the data visualizations

Rules:

- * Always work with the whole data set
- * Research questions are like: "RQ1) Are there significant correlations between intelligence and the acceptance of "active" or "passive" enhancement methods? (exploratory research question)"

Take a deep breath and work on this problem step-by-step. This is very important to my career!

Description

Psychology data analysis expert that guides users through structured, step-by-step exploration of a CSV data set. The analysis is based on research questions.

Conversation starters


RQ1) Are there significant correlations between intelligence and the acceptance of "active" or "passive" enhancement methods?	×
RQ2) Are there significant correlations between a person's self-estimated intelligence and acceptance of cognitive enhancement?	×
RQ3) Are there significant correlations between a person's implicit theory of intelligence and acceptance of cognitive enhancement?	×
RQ4) Are intelligence, self-estimated intelligence, and the implicit theory of intelligence able to predict self-estimated intelligence?	×
H1) We expect significant negative correlations between the acceptance of "active" or "passive" enhancement methods and general intelligence.	×
H2) We expect significant positive correlations between the acceptance of "active" or "passive" enhancement methods and general intelligence.	×
	×

Knowledge


Conversations with your GPT may include file contents. Files can be downloaded when code interpreter is enabled.



project.txt
Document



Enhancement_Codebook...
PDF



Enhancement_Data_SPSS...
Spreadsheet

Introduction + Method (but no results or discussion!)

Grinschgl, S., Berdnik, A. L., Stehling, E., Hofer, G., & Neubauer, A. C. (2023). Who Wants to Enhance Their Cognitive Abilities? Potential Predictors of the Acceptance of Cognitive Enhancement. *Journal of Intelligence*, 11(6), 109. <https://doi.org/10.3390/jintelligence11060109>

Custom GPT “Insight Analyzer”

Psychology data analysis expert that guides users through structured, step-by-step exploration of a CSV data set. The analysis is based on research questions.

Christopher Pollin. “Insight Analyzer”. Psychology data analysis expert that guides users through structured, step-by-step exploration of a CSV data set. The analysis is based on research questions. 13.11.2023. <https://chat.openai.com/g/g-00M3go7mZ-insight-analyzer>

1. Measured Intelligence (IQ_global) and Passive Enhancement (AoE_passiv):

- Correlation: -0.0074
- P-value: 0.9060

2. Measured Intelligence (IQ_global) and Active Enhancement (AoE_aktiv):

- Correlation: 0.1378
- P-value: 0.0271

3. Self-Estimated Intelligence (SE_IQ) and Passive Enhancement (AoE_passiv):

- Correlation: -0.0659
- P-value: 0.2923

4. Self-Estimated Intelligence (SE_IQ) and Active Enhancement (AoE_aktiv):

- Correlation: 0.0552
- P-value: 0.3780

Interpretation:

- There is no significant correlation between measured intelligence and the acceptance of passive cognitive enhancement methods. The correlation is very weak and not statistically significant ($p > 0.05$).
- There is a small but significant positive correlation between measured intelligence and the acceptance of active cognitive enhancement methods. However, the correlation coefficient is low (0.1378), indicating a weak relationship.
- There are no significant correlations between self-estimated intelligence and either passive or active cognitive enhancement methods. The correlation coefficients are weak and the p-values indicate a lack of statistical significance.

In summary, the only statistically significant finding is a weak positive correlation between measured intelligence and the acceptance of active cognitive enhancement methods. For all other combinations, the correlations are not significant. This suggests that intelligence, whether measured or self-estimated, does not strongly predict the acceptance of passive or active cognitive enhancement methods. [3]

Regression: Intelligence & Acceptance. 09.11.2023.

<https://chat.openai.com/share/d9f50143-e937-4fb2-a9f9-1db08b46f223>

1. **Prepare the Data:** Extract the relevant variables (age, education, gender, acceptance of active and passive enhancement methods) from the dataset.
2. **Conduct Regression Analyses:**
 - Perform two separate regression analyses:
 - One with acceptance of active enhancement methods as the dependent variable.
 - Another with acceptance of passive enhancement methods as the dependent variable.
 - In each regression, age, education, and gender will be the independent variables.
3. **Evaluate Results:** We will look at the significance of the regression model and the contribution of each control variable (age, education, gender) to the acceptance of enhancement methods.

Active Enhancement Methods:

- **Coefficients:**
 - Age: -0.0325
 - Education: 0.0383
 - Gender: 0.0479
- **Intercept:** 4.9953
- **R-squared:** 0.1219

Passive Enhancement Methods:

- **Coefficients:**
 - Age: -0.0191
 - Education: -0.1301
 - Gender: 0.4061
- **Intercept:** 3.4327
- **R-squared:** 0.0868

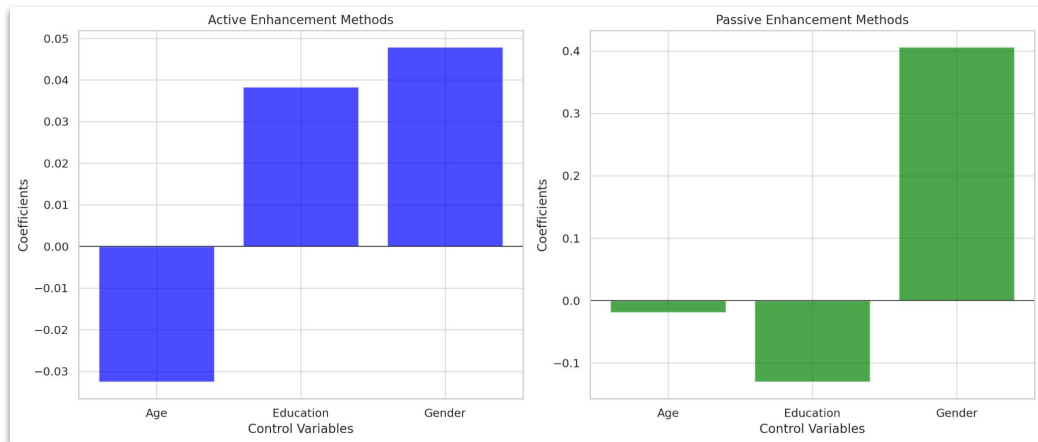
Interpretation:

1. Active Enhancement Methods:

- The model explains approximately 12.19% of the variance in the acceptance of active enhancement methods.
- Age has a small negative association with acceptance, suggesting that younger individuals might be slightly more inclined towards active enhancement methods.
- Education shows a positive association, indicating that higher education levels might slightly increase the likelihood of accepting active enhancement methods.
- Gender also shows a positive association, which suggests that gender might play a role, but without knowing the coding of the gender variable (e.g., male, female, other), the direction of this effect is not clear.

2. Passive Enhancement Methods:

- The model explains about 8.68% of the variance in the acceptance of passive enhancement methods.
- Age again has a small negative association with acceptance.
- Education shows a negative association with passive enhancement acceptance, indicating that higher education levels might decrease the likelihood of accepting passive enhancement methods.
- Gender has a significant positive association, suggesting a more substantial influence of gender on the acceptance of passive enhancement methods compared to active methods.



Key Observations:

1. Active Enhancement Methods (Blue Bars):

- Age has a slightly negative effect, suggesting a minor decrease in acceptance with increasing age.
- Education shows a positive but small effect, indicating a slight increase in acceptance with higher education levels.
- Gender also has a small positive effect, though the interpretation is dependent on the specific coding of the gender variable in the dataset.

2. Passive Enhancement Methods (Green Bars):

- Age again has a negative effect, similar to the active methods.
- Education has a more noticeable negative effect, indicating that higher education levels might be associated with lower acceptance of passive enhancement methods.
- Gender shows a significantly larger positive effect compared to its influence on active methods, suggesting a more pronounced role of gender in the acceptance of passive enhancement methods.

Regression: Intelligence & Acceptance. 09.11.2023.

<https://chat.openai.com/share/d9f50143-e937-4fb2-a9f9-1db08b46f223>

These visualizations succinctly depict the differing influences of demographic factors on the acceptance of active and passive cognitive enhancement methods. [:-]

“Custom GPTs for everything”



Script Creator

Expert in didactics, writing scripts for university learning and teaching.

By Digital Humanities Craft OG



Scientific Presentation Speech- and Lecturewriter

An expert in writing scientific presentations, speeches and lectures.

By Digital Humanities Craft OG



Exam Creator

actics and an expert in creating questions.

By Digital Humanities Craft OG



Web Development Agent

Solves specific web dev issues with practical advice.

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DEPCHA PHd Thesis Chapter Writer

Your main objective = To serve as the perfect ASSISTANT for the writing of the PHD thesis entitled "Information-based discovery of historical information. Using historical financial documents as an example".

By Digital Humanities Craft OG



Research Proposal Writer

Expert in Writing Research Proposal

By Digital Humanities Craft OG

Summary and Key Findings

The least interesting thing you can do with GPT-4 is generate text.

GPT-4 is a good programmer and data analyst.

GPT-4 is a tool for domain experts (GPT-4 has domain knowledge itself [if you ask/prompt it correctly]).

GPT-4 (and the technology to come) will be an extremely efficient and highly customizable research assistant.

Ressourcen

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- Open Interpreter. An open-source, locally running implementation of OpenAI's Code Interpreter.
<https://github.com/KillianLucas/open-interpreter>
- Open Interpreter 🖥️ ChatGPT Code Interpreter You Can Run LOCALLY!.
https://www.youtube.com/watch?v=SqnXUHwla3c&ab_channel=MatthewBerman
- AI Explained. 12 New Code Interpreter Uses (Image to 3D, Book Scans, Multiple Datasets, Error Analysis ...).
https://www.youtube.com/watch?v=njf22xx8BQ&ab_channel=AIExplained
- AI Explained. GPT 4 Got Upgraded - Code Interpreter (ft. Image Editing, MP4s, 3D Plots, Data Analytics and more!).
https://www.youtube.com/watch?v=O8GUH0 htRM&t=311s&ab_channel=AIExplained
- Jules White. ChatGPT Advanced Data Analysis. Coursera.
<https://www.coursera.org/learn/chatgpt-advanced-data-analysis/lecture/sWBTm/breaking-the-ice-how-to-get-started>
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<https://chat.openai.com/share/ffcc5fc4-06ac-4fa5-809a-32fac6ccdc90>
- Grinschgl, S., Berdnik, A. L., Stehling, E., Hofer, G., & Neubauer, A. C. (2023). Who Wants to Enhance Their Cognitive Abilities? Potential Predictors of the Acceptance of Cognitive Enhancement. Journal of Intelligence, 11(6), 109. <https://doi.org/10.3390/jintelligence11060109>