

## Questionnaire: Quality Analysis of OpenAI's ADA Tool

Imagine you are currently learning Data Science, Mathematics, or another similar field. In doing so, you come across the topic of "Multiple Linear Regression." Linear regression is an important foundation for understanding further regression models. The model has many assumptions that need to be checked. To understand these, you upload a dataset to ChatGPT and use an optimized prompt. Under this link, you will find the output from ChatGPT as a PDF, Jupyter Notebook, and HTML file (PDF file is recommended or download the HTML file and open it in your browser (do not open it from OneDrive, as it causes incorrect display of formulas)):

[https://1drv.ms/f/s!Aodd-gCxUoPPhrBf3b355pLrYl\\_ZtQ?e=db3liw](https://1drv.ms/f/s!Aodd-gCxUoPPhrBf3b355pLrYl_ZtQ?e=db3liw)

Please read through the output and answer the following questions. Your answers will be used to create an AI assistant optimized for this topic. This AI assistant should be able to help future students understand the topic in an applied manner, rather than just learning the theory.

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>Part 1: Explanatory Data Analysis</b>					
I have a general understanding about the dataset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand how to read the provided histograms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand how to read the provided boxplots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand how to read the provided ECDF plots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand how to read the provided QQ plots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Part 2: Preparations for Regression Diagnostics</b>					
I understand the assumption of a linear regression model	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The mathematical equations are helpful for my understanding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Part 3: Regression Diagnostics

#### Outliers

I understand what outliers are.

☐ ☐ ☐ ☐ ☐

I understand the methods to check for outliers.

☐ ☐ ☐ ☐ ☐

I understand the plot and the interpretation.

☐ ☐ ☐ ☐ ☐

I need further information on the plot.

☐ ☐ ☐ ☐ ☐

I understand the statistical test and the interpretation.

☐ ☐ ☐ ☐ ☐

I need further information on the statistical test.

☐ ☐ ☐ ☐ ☐

#### High-Leverage Points

I understand what high-leverage points are.

☐ ☐ ☐ ☐ ☐

I understand the methods to check for high-leverage points.

☐ ☐ ☐ ☐ ☐

I understand the plot and the interpretation.

☐ ☐ ☐ ☐ ☐

I need further information on the plot.

☐ ☐ ☐ ☐ ☐

I understand the statistical test and the interpretation.

☐ ☐ ☐ ☐ ☐

I need further information on the statistical test.

☐ ☐ ☐ ☐ ☐

Non-Linearity					
I understand what non-linearity is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand the methods to check for non-linearity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand the plot and the interpretation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I need further information on the plot.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand the statistical test and the interpretation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I need further information on the statistical test.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heteroscedasticity					
I understand what heteroscedasticity is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand the methods to check for heteroscedasticity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand the plot and the interpretation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I need further information on the plot.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand the statistical test and the interpretation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I need further information on the statistical test.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Correlation of Error Terms					
I understand what correlation of error terms is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand the methods to check for correlation of error terms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand the plot and the interpretation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I need further information on the plot.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand the statistical test and the interpretation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I need further information on the statistical test.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Normality of Residuals					
I understand what normality of residuals is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand the methods to check for normality of residuals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand the plot and the interpretation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I need further information on the plot.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand the statistical test and the interpretation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I need further information on the statistical test.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Collinearity of Predictors					
I understand what collinearity of predictors is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand the methods to check for collinearity of predictors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand the plot and the interpretation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I need further information on the plot.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand the statistical test and the interpretation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I need further information on the statistical test.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

After you have answered the questions, please describe positive or negative aspects of the output. Please also describe what you are studying or in which field you are working.

---

---

---

---

---

---

---

---

---

---

---

---

Thank you all for helping me with my bachelor's thesis! 😊