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Is ChatGPT good at establishing validity?

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Purpose

Like many researchers, I am still struggling to understand what parts of my job can be done with the help of Large Language Models (LLMs) such as Chat-GPT. I gave Chat-GPT a task that is relatively simple for Research Methods students to do manually. I asked ChatGPT to give me a research study involving the influence of bystanders on prosocial behavior. How did it do?

Student Instructions

This assignment uses a “large group discussion” format.

1. **Group Up.** The class should be divided into several discussion groups. The instructor is leaving it up to you to group up—you can work with your neighbors or friends if you want.
2. **Read the Scenario.** Found below.
3. **Share.** Have at least one group member take notes (electronically) that can be summarized and shared with the class verbally and posted to the class site.

Answer the following questions:

1. Did ChatGPT provide independent, dependent, and any control variables?
2. Did ChatGPT make it clear whether the study is a “true experiment” or not? What about whether it is between-groups or within-groups?
3. Appraise how ChatGPT handled the issues of construct validity, internal validity, and external validity for the project that it designed.
4. For each type of validity, identify whether ChatGPT’s experiment addressed the validity issue well or poorly.
5. If a type of validity was addressed poorly, identify whether ChatGPT acknowledged this weakness of the experiment.
6. Finally, your group should “put yourself in my shoes.” Would you trust ChatGPT to help write research proposals? What could you do to use the tool more effectively? What tasks would you only trust to a human? Give your general assessment of the tool’s strengths and weaknesses.

Research Scenarios

The following prompt was made using GPT 3.5.

“Title: The Influence of Bystanders on Prosocial Behavior: A Field Experiment

1. Introduction:

Prosocial behavior, defined as voluntary actions intended to benefit others, is a crucial aspect of human social interactions. Understanding the factors that influence prosocial behavior is essential for promoting positive social outcomes. One such factor is the presence of bystanders, individuals who are present during a prosocial situation but are not directly involved. This research proposal aims to investigate the influence of bystanders on prosocial behavior in real-world settings.

2. Research Question:

How does the presence of bystanders affect individuals' engagement in prosocial behavior?

3. Hypothesis:

It is hypothesized that the presence of bystanders will have an impact on the frequency of prosocial behavior. Specifically, individuals will be less likely to engage in prosocial behavior when in the presence of bystanders compared to when alone or in a smaller group.

4. Methodology:

4.1 Participants:

A diverse sample of individuals from various backgrounds and age groups will be recruited to participate in the study. The sample size will be determined through power analysis to ensure adequate statistical power.

4.2 Experimental Design:

A field experiment will be conducted in naturalistic settings to enhance ecological validity. Participants will be randomly assigned to different conditions: alone, with one bystander, or with a group of bystanders. The manipulation of the independent variable

(presence of bystanders) will allow for the comparison of prosocial behavior across these conditions.

4.3 Procedure:

Participants will be instructed to engage in a series of prosocial tasks or situations, such as helping a person in need, donating to a charity, or assisting with a community project. The specific tasks will be carefully designed to represent various forms of prosocial behavior.

Participants' behavior will be observed discreetly by trained researchers who will document the occurrence of prosocial acts. The dependent variable (frequency of prosocial behavior) will be measured by recording the number of prosocial acts performed by each participant within the assigned timeframe.

To minimize potential biases, the researchers will remain blind to the experimental conditions to ensure unbiased data collection. Additionally, participants will be fully debriefed regarding the study's purpose and given the opportunity to withdraw their data from the analysis.

5. Data Analysis:

Descriptive statistics, such as means and standard deviations, will be calculated for each condition. To test the hypothesis, inferential statistical analyses, such as analysis of variance (ANOVA) or chi-square tests, will be conducted to determine if there are significant differences in prosocial behavior across the conditions.

6. Ethical Considerations:

This research proposal adheres to ethical guidelines, including obtaining informed consent, ensuring participant confidentiality, and providing a debriefing session to address any potential psychological or emotional effects.

7. Significance and Implications:

This study will contribute to the understanding of the role of bystanders in prosocial behavior. The findings may have implications for social interventions aimed at fostering prosocial behavior in situations involving bystanders. By identifying the factors that inhibit or facilitate prosocial behavior, this research can inform the development of strategies to encourage altruistic actions and promote positive social dynamics.

8. Limitations and Future Research:

This research proposal acknowledges certain limitations, such as potential confounding variables and the artificiality of experimental settings. Future research could explore the influence of specific characteristics of bystanders, such as their relationship to the participant or their perceived social status, to provide a more nuanced understanding of prosocial behavior in real-world contexts.

9. Conclusion:

This research proposal outlines a field experiment aimed at investigating the influence of bystanders on prosocial behavior. By examining the impact of bystanders in naturalistic settings, this study will shed light on the social dynamics that shape individuals' propensity to engage in helpful and altruistic acts. Ultimately, this"

Grading

- **To facilitate grading, each group should submit a "discussion summary" at the end of class that contains each group member's gradebook name (alphabetized by last name, please) and preferred name (if different).**
- **Your "discussion summary" should also include your group's answer to the questions above.**
- **This assignment is worth 20 points.**
 - **Full participation in discussion: 20 points.**
 - **Group does not stay on topic: 11-19 points.**
 - **Group does not participate much/any in discussion: 0-10 points.**