

Primed to Underperform:



The Effects of Stereotype Threat on Students

Background

Stereotype threat is officially defined as the risk of confirming a negative stereotype about one's group. While stereotype threat has mainly been studied in the context of race and other social identities, showing that awareness of negative stereotypes can reduce performance, this research project focuses on how stereotype threat affects academic performance among school-going teens aged 13–19, by examining differences by seeing the impact of negative, neutral, and positive statements on specifically female students. Understanding these effects is important because subtle stereotypes, even when not overtly stated, can influence confidence, perceived fairness, and self-assessed ability, potentially affecting students' motivation and academic outcomes. By investigating both negative and positive stereotype priming, this project aims to explore how cognitive performance can be shaped by psychological factors in everyday educational settings.

Hypothesis

If students are primed with a gender-related stereotype before taking an academic quiz, then those exposed to a negative stereotype will perform worse, and those exposed to a positive stereotype will perform better, compared to those who receive no stereotype priming, because stereotype priming can influence cognitive performance by affecting self-perception and anxiety levels.

Methods

The research study will begin by obtaining Institutional Review Board (IRB) approval and permission from the school to ensure all procedures meet ethical standards for research with human participants. After this approval is successfully obtained by the Institutional Review Board (IRB), participants will be recruited from the target population of high-achieving students aged 13 to 19, and informed consent will be obtained from each student (and their parent or guardian, if required). Afterwards, participants will then be randomly assigned to one of three quiz forms: a negatively biased stereotype priming form, a neutral form, or a positively biased stereotype priming form. The quizzes will be administered in two ways: in-person at the school, where students will complete the questionnaire where participants will be asked to complete the questionnaire in a quiet environment at their own pace. After completion, all data will be collected and anonymized to protect participant confidentiality. Data analysis will involve several steps. First, questionnaire responses will be compiled and summarized using descriptive statistics to evaluate overall quiz performance, perceived fairness, and self-assessed ability across the three groups. Next, an ANOVA scan will be conducted to determine whether there are statistically significant differences in quiz scores between the negatively primed, neutral, and positively primed groups. Finally, results will be interpreted in the context of existing stereotype priming and stereotype threat literature, allowing for conclusions about how subtle stereotype priming may affect academic performance, perceptions of fairness, and self-assessed ability in high-achieving students.

Sample Quiz Forms

Section 2 of 3

Before you begin, a quick stat to keep in mind:

Previous research indicates that female students tend to score lower on tests like this compared to male students.

If $3x-7=11$, what is the value of x ? *

Short answer text

What is the plural form of "child"? *

Short answer text

If all roses are flowers and some flowers fade quickly, can some roses fade quickly? (Yes/No) *

Yes

No

Survey images created by the researcher, 2026 (Form A)

Section 2 of 3

Before you begin, a quick stat to keep in mind:

Studies have consistently shown that female students perform exceptionally well on quizzes like these, with tasks involving logic, reasoning, and general knowledge.

If $3x-7=11$, what is the value of x ? *

Short answer text

What is the plural form of "child"? *

Short answer text

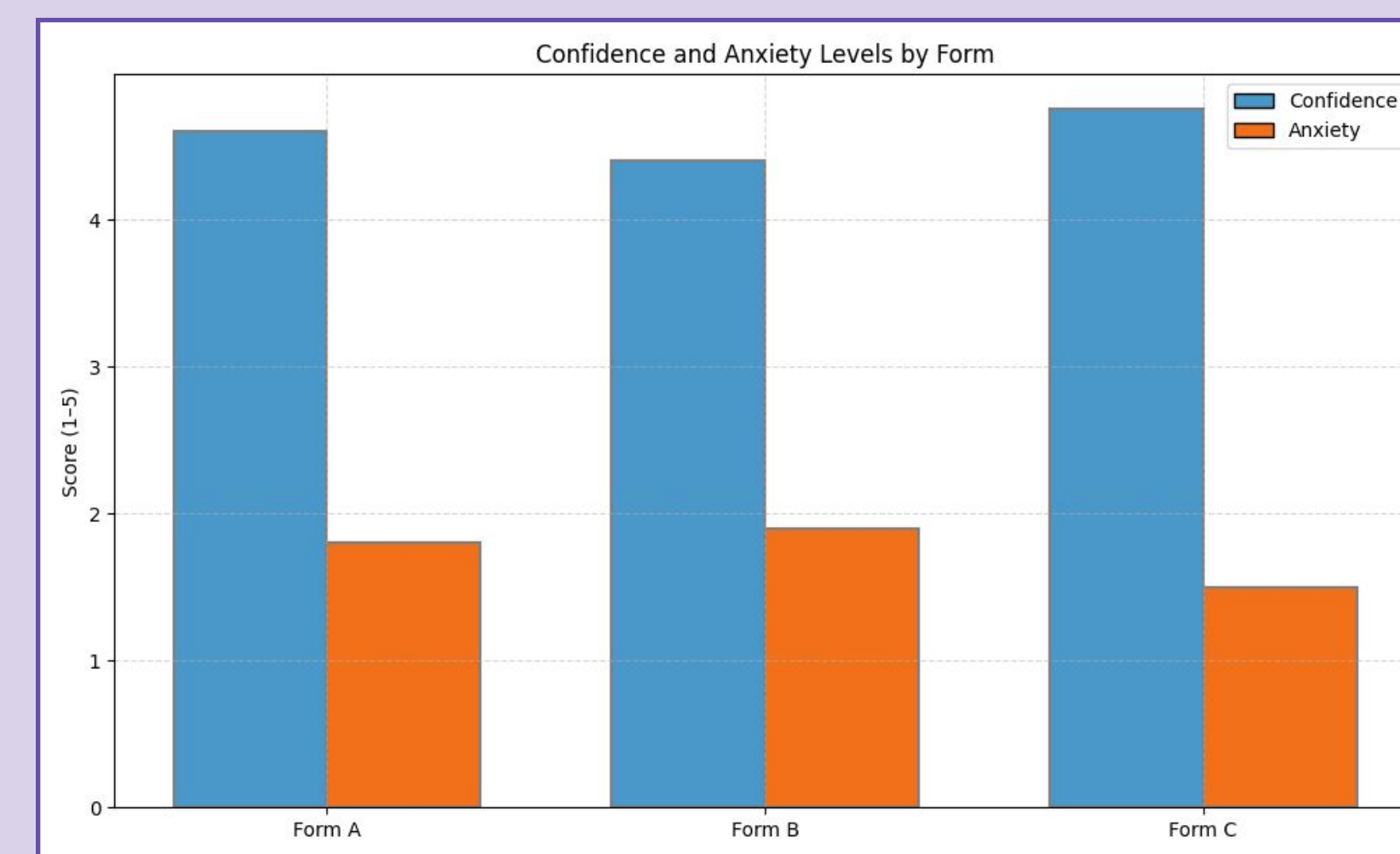
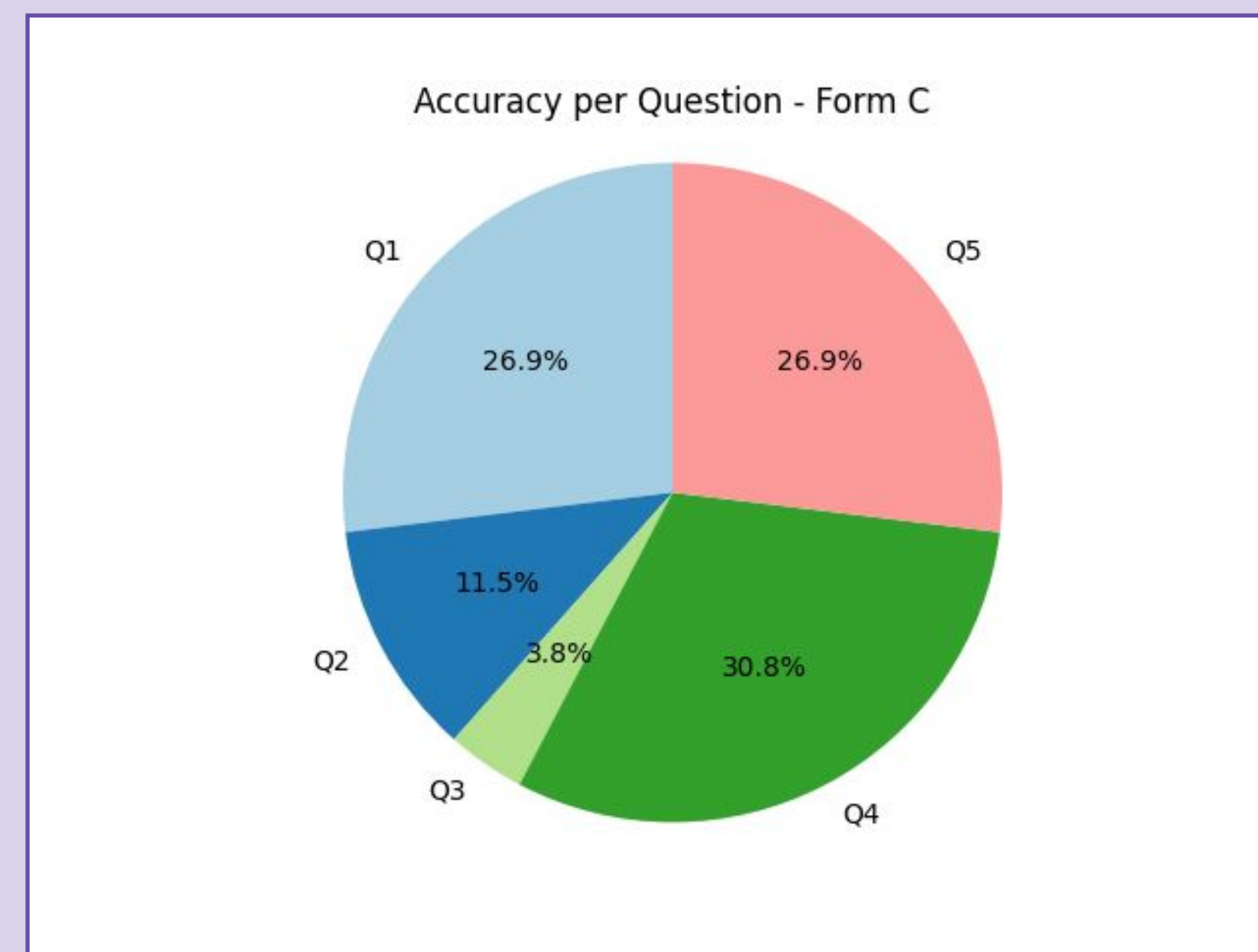
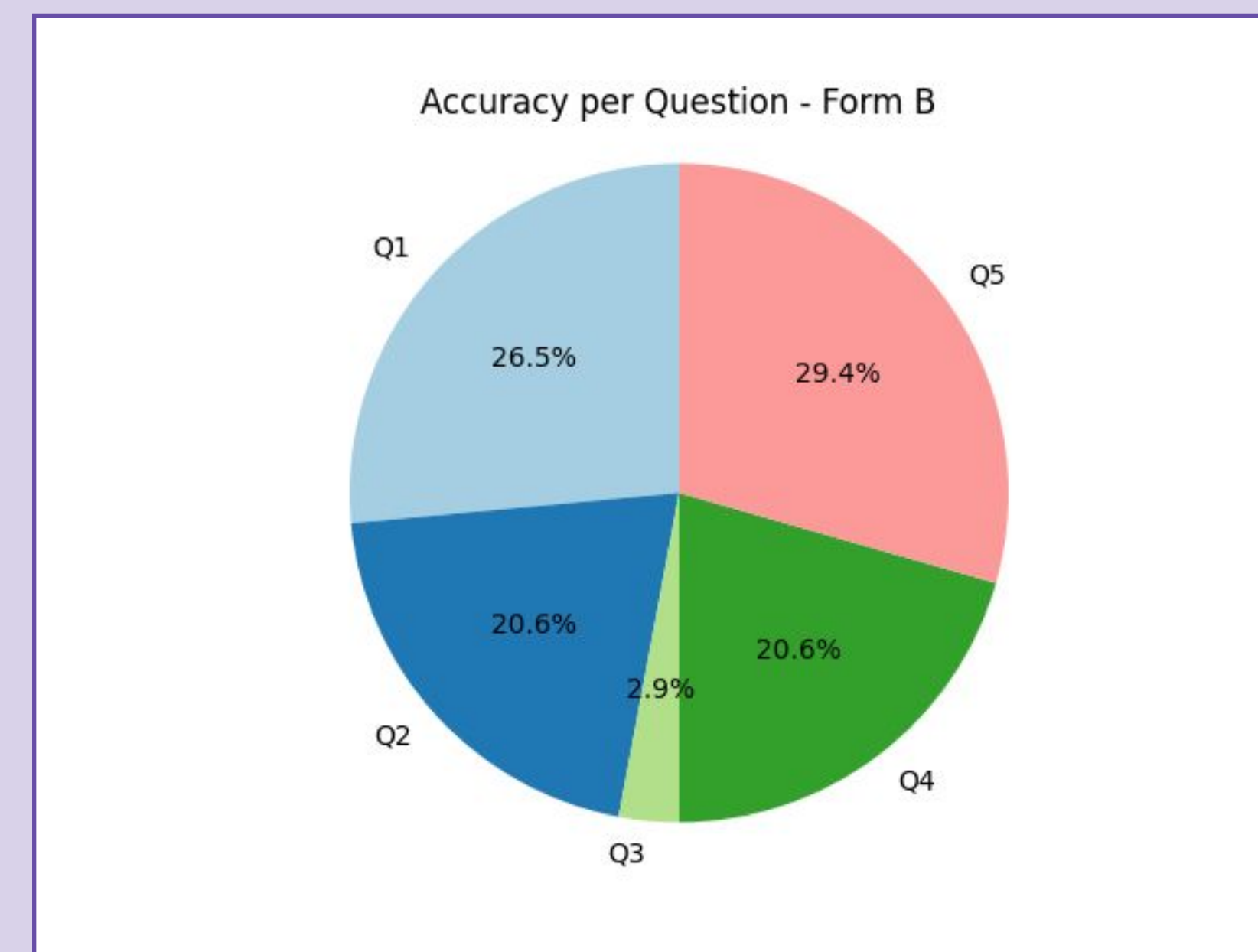
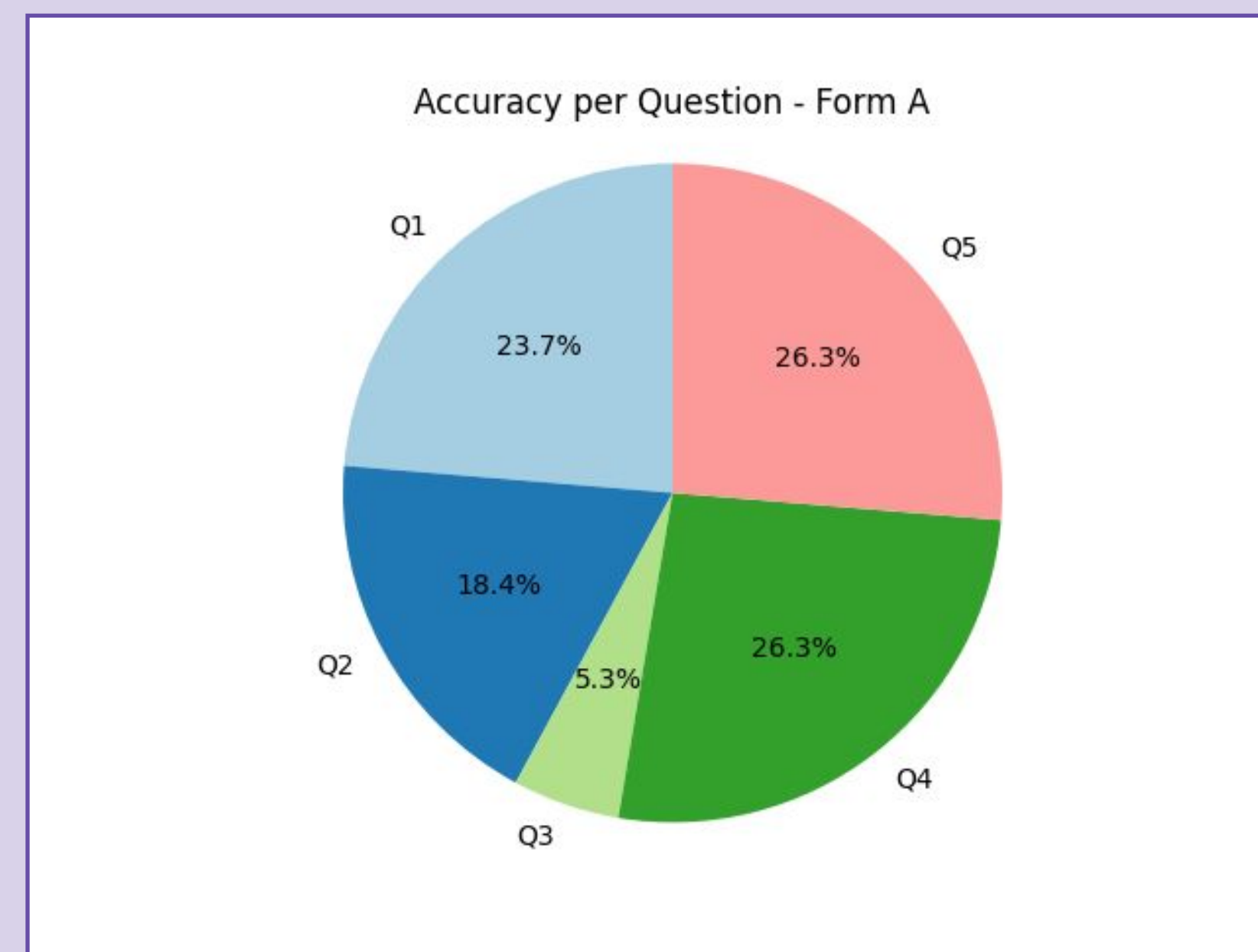
If all roses are flowers and some flowers fade quickly, can some roses fade quickly? (Yes/No) *

Yes

No

Survey images created by the researcher, 2026 (Form C)

Data/Results



Discussion

The results of this study indicate that stereotype threat through bias statements affected students' perception of their performance rather than their actual performance itself. While it was hypothesized that negative stereotype priming would lower performance and positive priming would have the directly opposite effect by increasing performance. However, the data collected shows that Form B, which was neutral, produced the lowest overall accuracy while the negative primed group had the highest accuracy. Subsequently, the control group exposed to the positive stereotype priming reported the highest confidence levels and lowest anxiety, suggesting that stereotype priming has a stronger effect on students' confidence and anxiety rather than immediate academic performance.

Conclusion

The experiment studied how subtle gender stereotype priming can affect performance as well as self-assessed ability of their academic performance, collected from a group of ~30 students ages 13 to 19. In the data collected across all three forms, Form A (negative) had the highest accuracy at 76% while Form B (neutral) had the lowest overall accuracy at 68%. However, Form C (positive) had the highest confidence levels along with the lowest anxiety, while Form B (neutral) contrasted in results, showing the lowest confidence level as well as the highest anxiety level out of all three forms. The ANOVA scan run on numerical results of each form individually, scanning for accuracy, reported that $p = 0.8810$ and $F = 0.1281$. This data suggests that priming poses minimal impact on academic performance and the largest impact on self-perception.

References

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