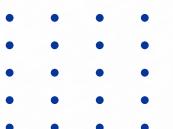


NSSAL **Case Study**

Gender and Heterosexual Partner Trends

Presented by Muhammed Uwais



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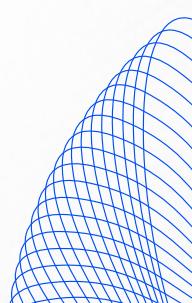
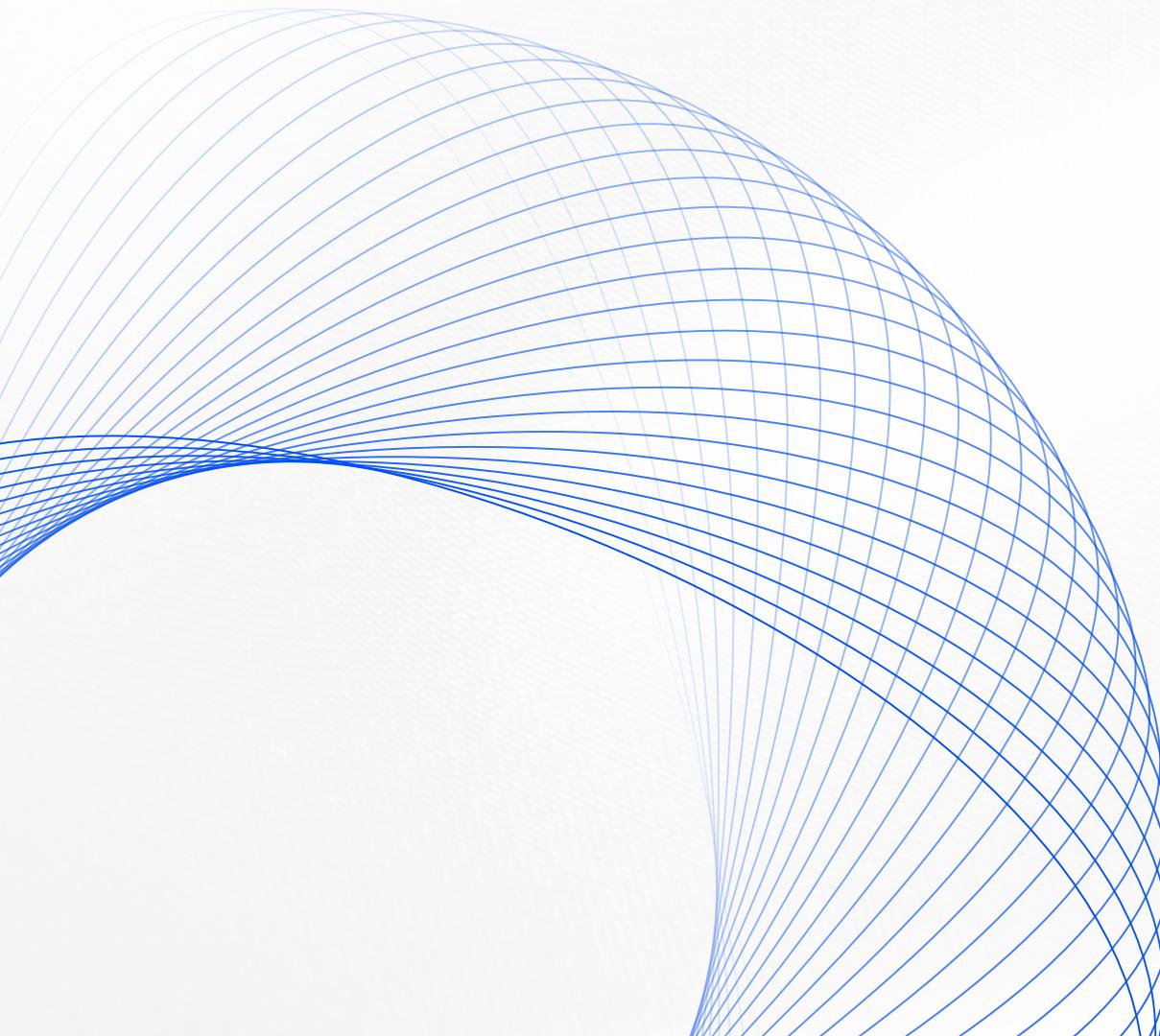
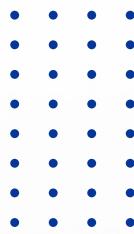
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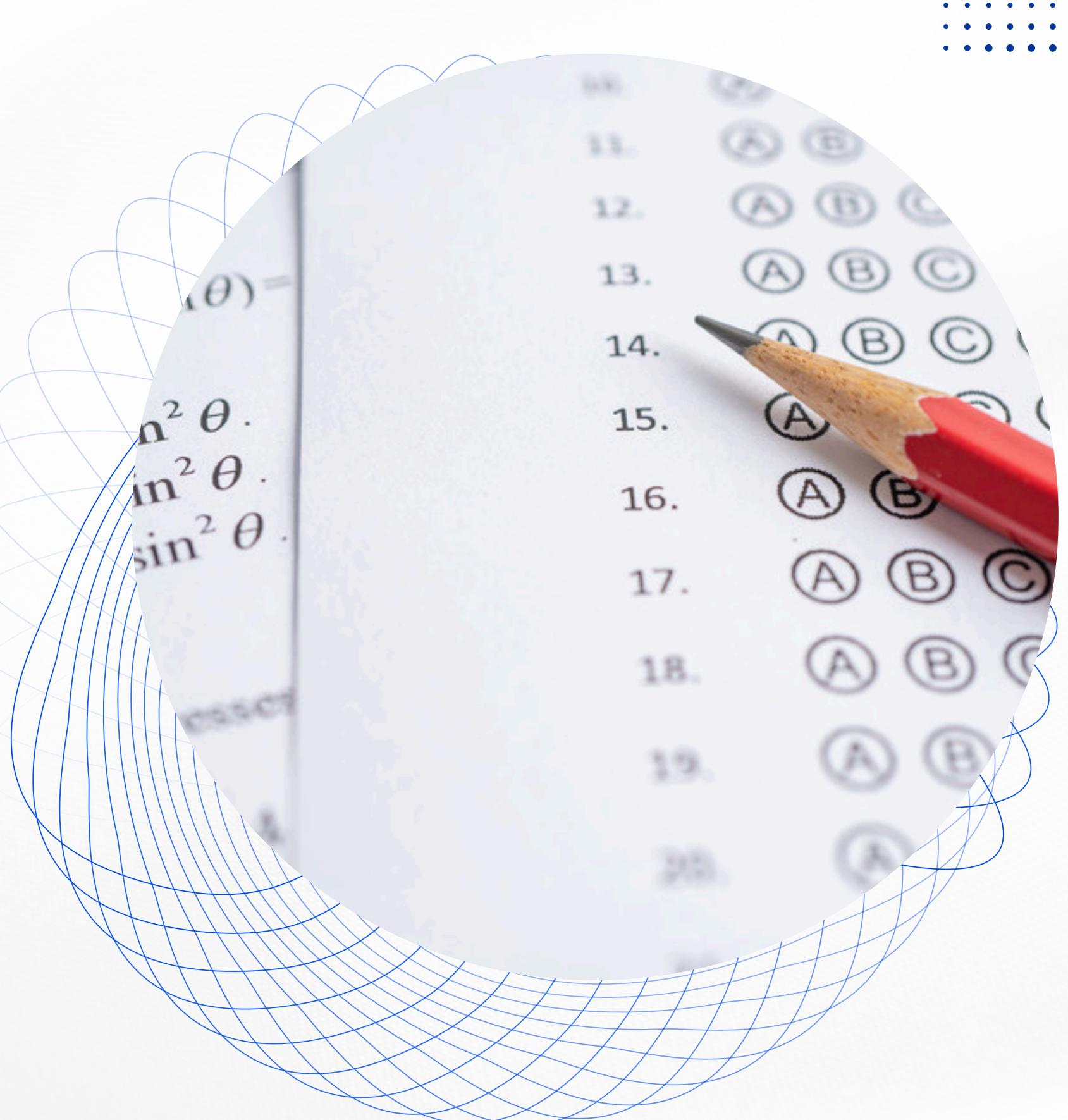
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The Survey Background

- NSSAL: British National Surveys of Sexual Attitudes and Lifestyles.
- Among the largest and most detailed studies worldwide.
- NSSAL-2 (1999–2001): 12,735 adults (ages 16–74).
- NSSAL-3 (2010–2012): 15,162 adults (ages 16–74).
- Method:
 - Face-to-face interviews (general health, first sexual experiences, etc.).
 - Self-completion (intimate questions like condom use, sexual partners, experiences).



Why This Research Matters?

1 Public Health

Guides STI/HIV prevention and sexual health services.

2 Sociology & Demographics

Reflects shifting norms and gender roles.

3 Policymaking

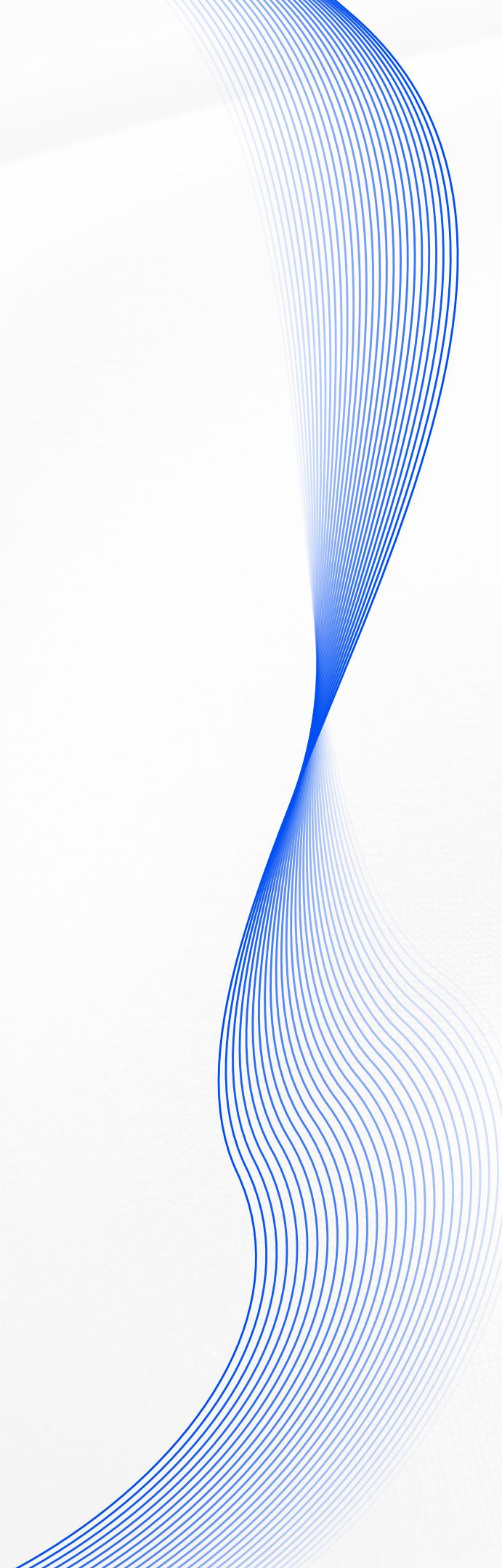
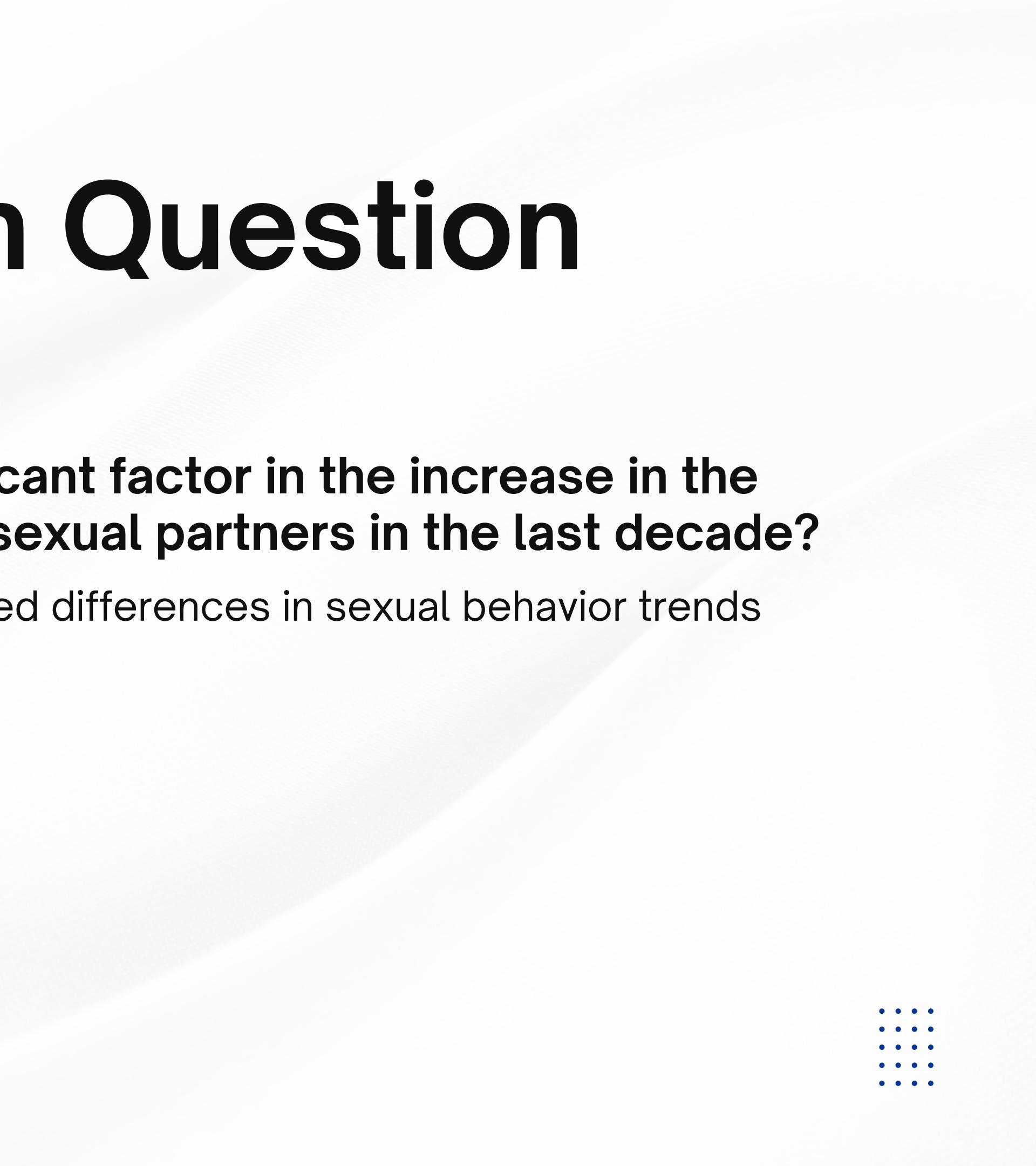
Helps allocate resources and design tailored education.

4 Academia

Contributes to literature on sexuality, gender studies, and social epidemiology.

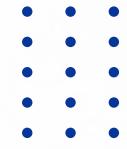


Research Question

- 
- ⌚ **Is gender a significant factor in the increase in the number of heterosexual partners in the last decade?**
Examines gender-based differences in sexual behavior trends across two decades.
- 



Data & Variables of Interest



rsex

Gender (male, female).



wave

Survey wave (0 = NSSAL-2, 1 = NSSAL-3).



dage

Age of respondent.



hetlife_num

Total lifetime heterosexual partners
(main outcome).



weight

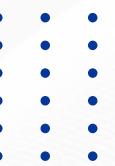
Sampling weight (adjusts for population).



rsex_num

Numeric gender variable (0 = female, 1 = male)

Analytical Approach



Objective

Test interaction between gender and survey wave.



Model Choice

Started with Poisson → dataset was overdispersed.



Model Choice

Switched to Negative Binomial Regression.



Hypotheses

- H_0 : No gender × wave interaction.
- H_a : Gender × wave interaction exists.



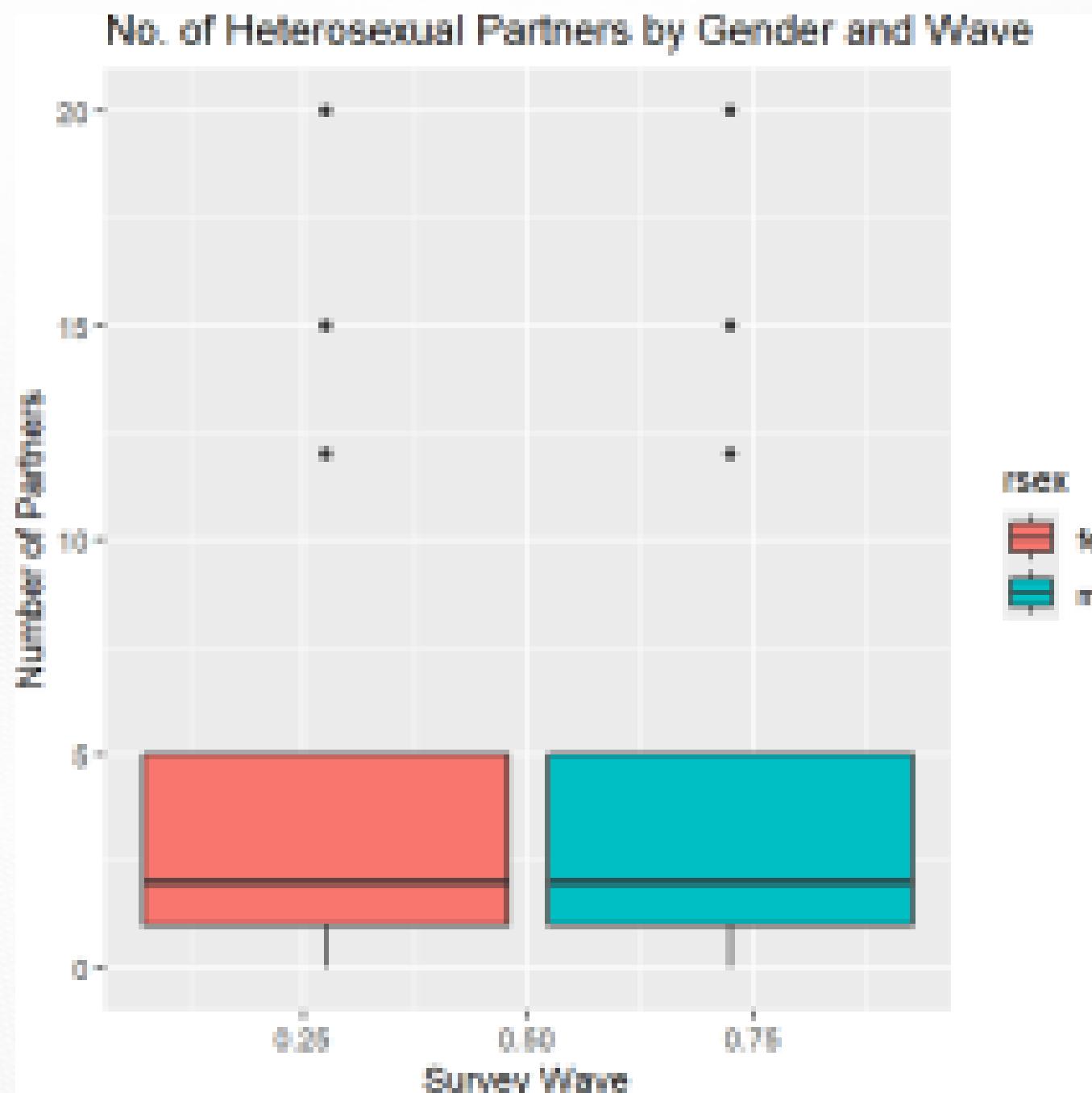


Descriptive Statistics

- 1 Men consistently report more partners than women.
- 2 Trend over time: Both genders show a decline from NSSAL-2 to NSSAL-3.
- 3 Distribution: Skewed — mean higher than median due to outliers (especially among men).

rsex_num	wave	mean	median
0	0	3.894420	2.0
1	0	3.604402	2.0
2	1	5.115709	3.0
3	1	4.347623	2.0

Results & Plots



Plotting the mean number of partners by gender and survey

After negative binomial regression analysis;
Men vs. Women: In both survey waves, men reported more heterosexual partners than women.

Change Over Time:

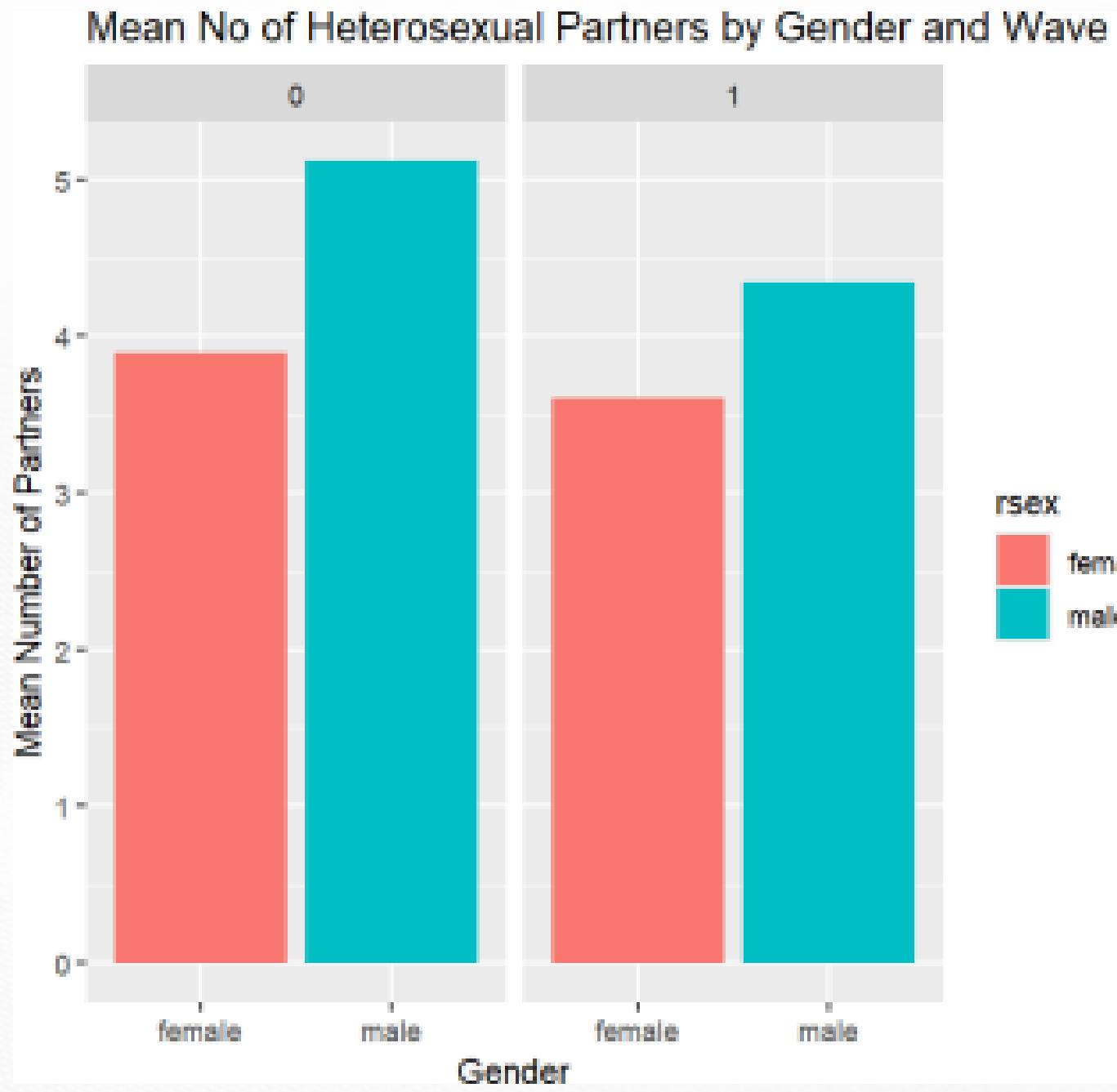
- The number of heterosexual partners decreased for both men and women from NSSAL-2 to NSSAL-3.

Gender Difference:

- The decrease in the number of partners was significantly larger for men than for women.

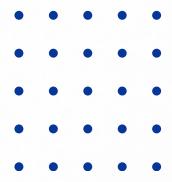
This confirms that gender is a significant factor in the change in the number of heterosexual partners over time.

Results & Plots

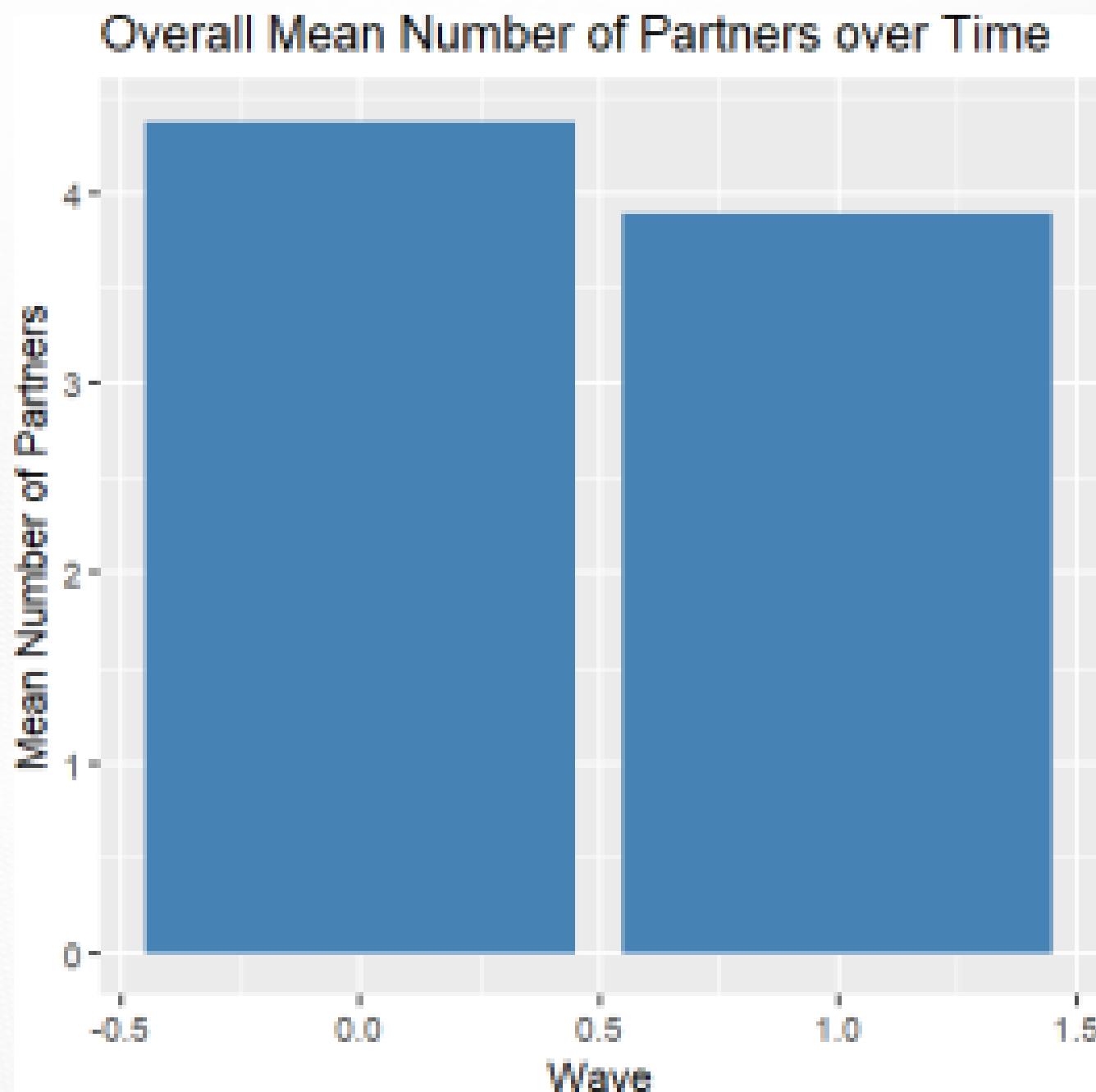


Do men report more heterosexual partners than women?

The mean and median for men are consistently higher than for women in both NSSAL 2(0) and NSSAL-3(1); suggesting that, descriptively, men report more heterosexual partners than women in the surveys.

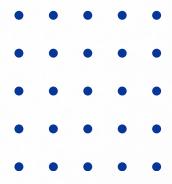


Results & Plots



Has the number increased from NSSAL-2 to NSSAL-3?

On average, the number of heterosexual partners has decreased.



Results & Plots

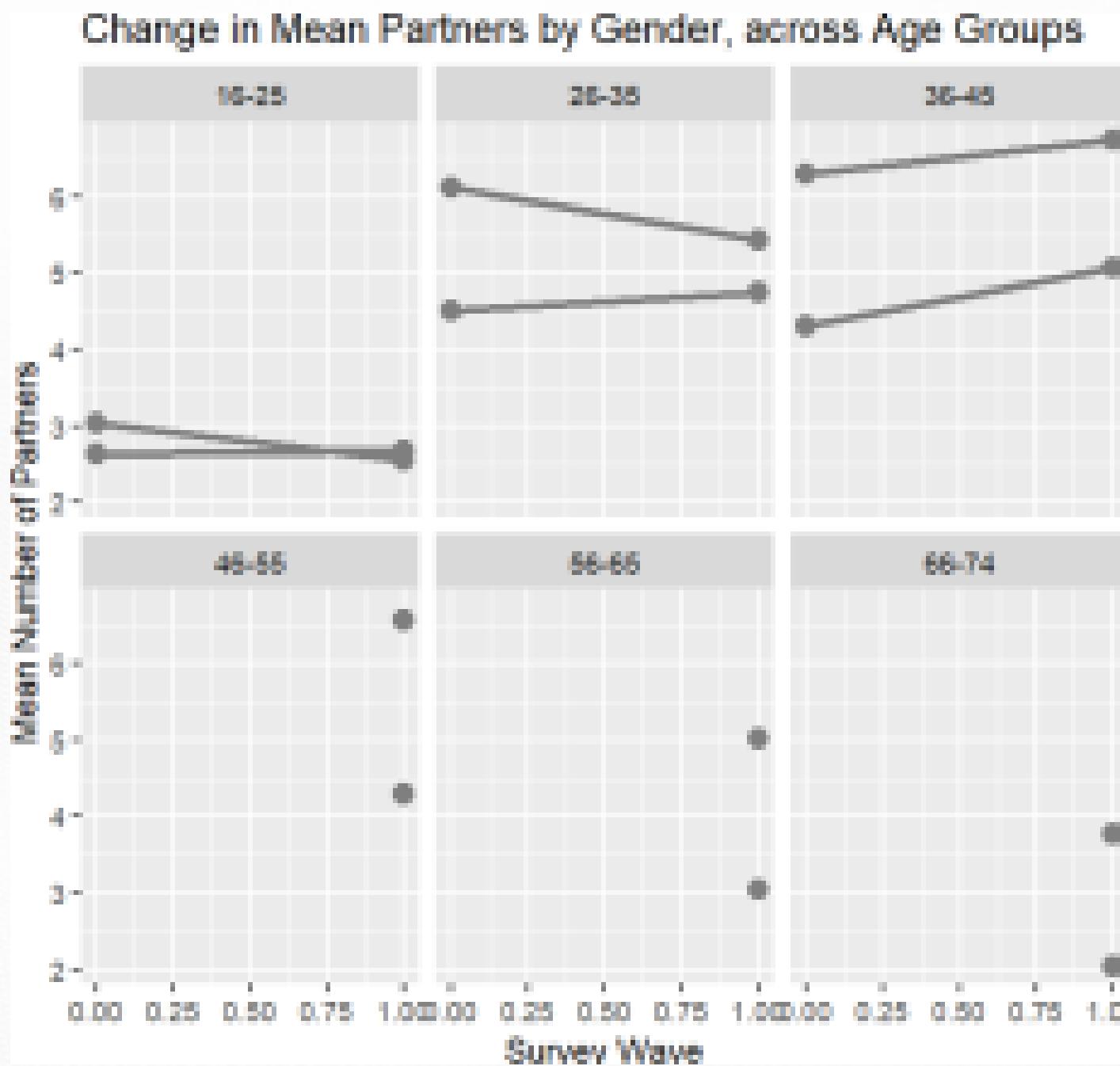


Is there a gender difference that has changed over time?

Descriptively, the plot suggests that there is a gender difference in the mean number of partners, but this difference has not changed significantly over time.

The decrease in the number of partners from the first survey wave to the second was similar for both genders.

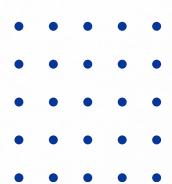
Results & Plots



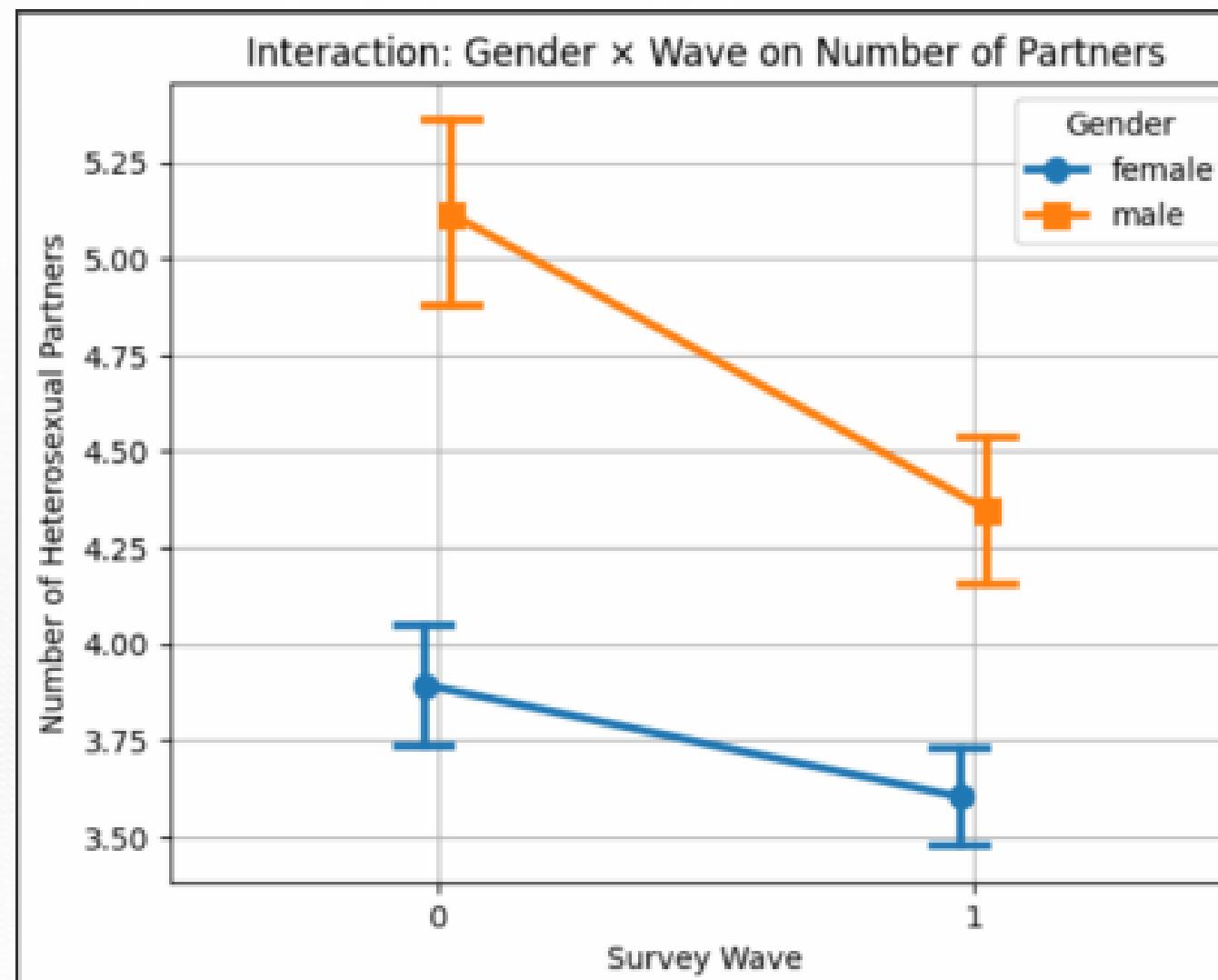
Does age influence this pattern?

The plot provides strong visual evidence that age influences the pattern of how gender and survey wave interact.

The trends in the number of heterosexual partners over time differ significantly depending on the age group. Younger groups show a narrowing gender gap, while the 36-45 age group shows a potential widening of the gap.



Results & Plots



	sum_sq	df	F	PR(>F)
C(rsex_num)	3046.199285	1.0	112.301279	3.832724e-26
C(wave)	794.251969	1.0	29.280918	6.361243e-08
C(rsex_num):C(wave)	190.258323	1.0	7.014069	8.096000e-03
Residual	389871.091613	14373.0	NaN	NaN

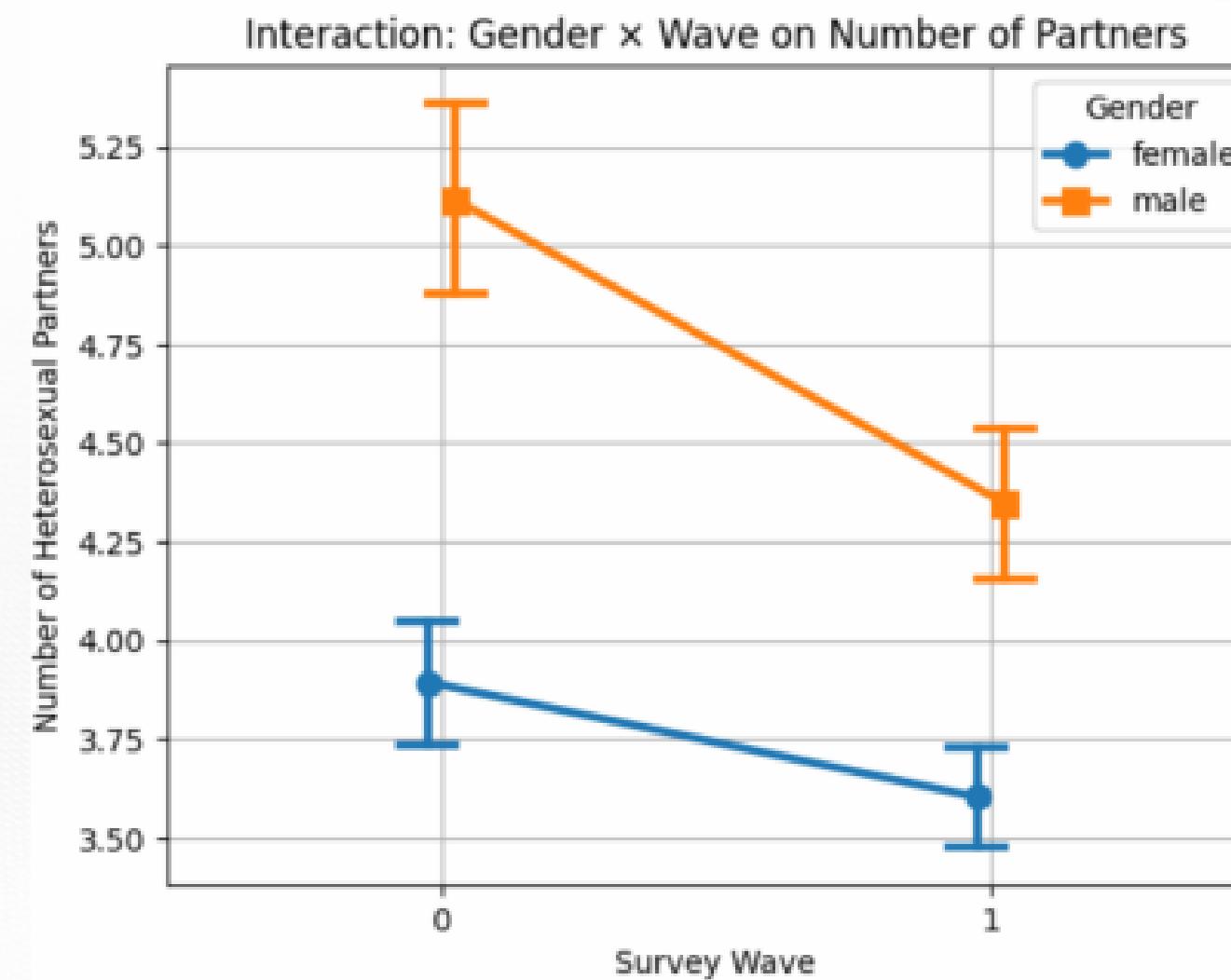
Piecewise Interpretation

1. Gender Effect (rsex_num):

- F = 112.30, p < 0.001 (3.83e-26) → Very significant
This indicates a statistically significant difference in hetlife_num between men and women.

Implication: Gender has a strong impact on attitudes/perceptions measured by hetlife_num.

Results & Plots



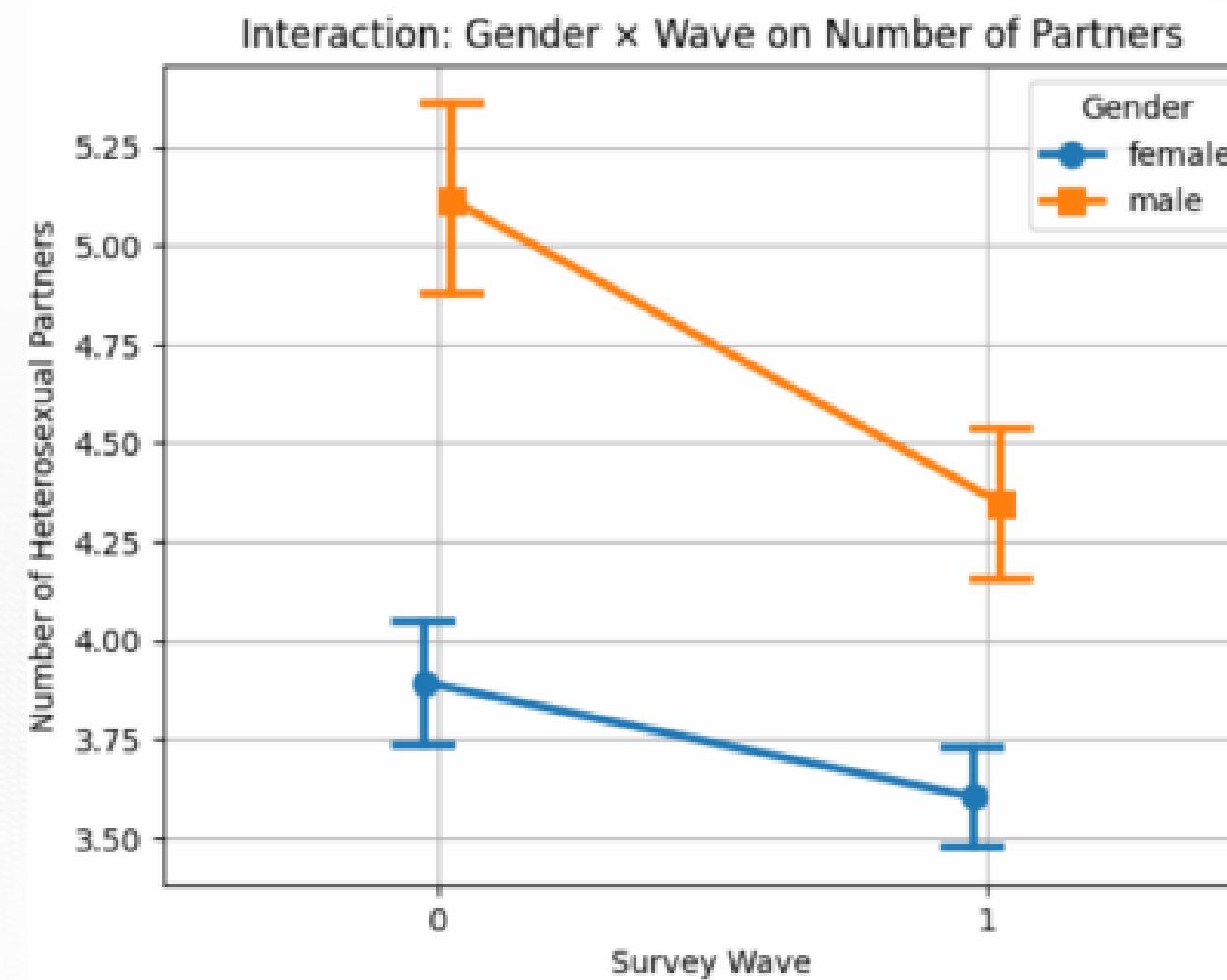
Piecewise Interpretation

2. Wave Effect:

- F = 29.28, p < 0.001 (6.36e-08) → Also very significant
- This indicates that hetlife_num scores change significantly between waves (i.e., over time or between surveys).

	sum_sq	df	F	PR(>F)
C(rsex_num)	3046.199285	1.0	112.301279	3.832724e-26
C(wave)	794.251969	1.0	29.280918	6.361243e-08
C(rsex_num):C(wave)	190.258323	1.0	7.014069	8.096000e-03
Residual	389871.091613	14373.0	NaN	NaN

Results & Plots



Piecewise Interpretation

3. Interaction between gender and wave (rsex_num:wave):

- $F = 7.01, p = 0.0081 \rightarrow$ Significant

This means that the effect of gender depends on the wave, or in other words, The difference between men and women is not the same in both waves. Perhaps the difference narrows or widens over time.

	sum_sq	df	F	PR(>F)
C(rsex_num)	3046.199285	1.0	112.301279	3.832724e-26
C(wave)	794.251969	1.0	29.280918	6.361243e-08
C(rsex_num):C(wave)	190.258323	1.0	7.014069	8.096000e-03
Residual	389871.091613	14373.0	NaN	NaN



Research Question

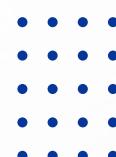


Is gender a significant factor in the increase in the number of heterosexual partners in the last decade?

Yes, gender is a significant factor. The analysis of the NSSAL-2 and NSSAL-3 data, using a negative binomial regression model, showed a statistically significant interaction effect between gender and survey wave.

The decrease in the number of partners was significantly larger for men than for women. **This confirms that gender is a significant factor in the change in the number of heterosexual partners over time.**

Gender being a significant factor could imply that social norms are changing differently for men and women, or that men's and women's sexual behaviors are diverging. It would be important to consider the broader social context of the two time periods to explain this. This would highlight the need for gender-specific public health interventions.



Thank You For Your Attention!

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