

gesis

Leibniz Institute
for the Social Sciences

General Online Research
Conference 2022 (GOR 22)
September 9, 2022



Do Response Effects Change Over Time?

Experimental Results From Six Waves
of a German Online Panel Survey



Fabienne Kraemer, Henning Silber, Bella Struminskaya, Matthias Sand,
Michael Bosnjak, Joanna Koßmann, Bernd Weiß

Background

- Learning effects over the course of a panel study (panel conditioning) can cause changes in response behavior
- Two different types of learning (Struminskaya, 2016)
 - ▶ familiarity with general survey process (process learning)
 - ▶ familiarity with specific question content (content learning)
- Panel conditioning most likely when interval between panel waves is short (Warren & Halpern-Manners, 2012)
- Changes in response behavior due to (Struminskaya & Bosnjak, 2021)
 - ▶ Reflection processes
 - ▶ Social desirability
 - ▶ Survey satisficing

Survey satisficing

- Mental shortcuts in the response process to reduce cognitive effort and survey burden (Krosnick, 1991)
- Examples of satisficing response strategies
 - ▶ Selecting first response options (i.e., primacy effect)
 - ▶ Selecting „don't know“- options
 - ▶ Agreeing with statements (i.e, acquiescence)
 - ▶ Non-differentiation of answers to matrix questions (i.e., straightlining)
 - ▶ Overly short response times (i.e., speeding)
- Respondent characteristics (i.e., cognitive ability and motivation) can influence extent of satisficing (Narayan & Krosnick, 1996)

Satisficing in panel studies

- Only little research on satisficing in panel studies as well as its consequences on response quality in later waves
- Existing studies investigate only a **limited number of indicators** and show **mixed findings**
 - ▶ Increases vs. non-significant change in straightlining (Schonlau & Toepoel, 2015; Sun et al., 2019) and motivated misreporting (Silber et al., 2019; Bach & Eckman 2018; Bach & Eckman, 2020)
- Most studies are non-experimental
 - ▶ Underlying learning mechanism (**content learning vs. process learning**) for a change in satisficing across waves still unclear

Research questions

- (1) Does satisficing increase or decrease across panel waves?
- (2) Is content learning (i.e., familiarity with specific questions) responsible for change in satisficing across panel waves?
- (3) Do different panel intervals, respondents' cognitive ability, and motivation affect change in satisficing?

Data

- German non-probability panel
 - ▶ Quota sample on age, gender, and education
- 6 panel waves (Oct 2020 - Dec 2021) with $n = 2,589$
- Panel interval
 - ▶ Short: monthly
 - ▶ Long: about every 3 months
- Analytic sample
 - ▶ Respondents who participated in all panel waves ($n = 1,031$)
- Benchmark: GESIS Panel
 - ▶ Probability-based mixed-mode panel study
 - ▶ Feb-March 2014

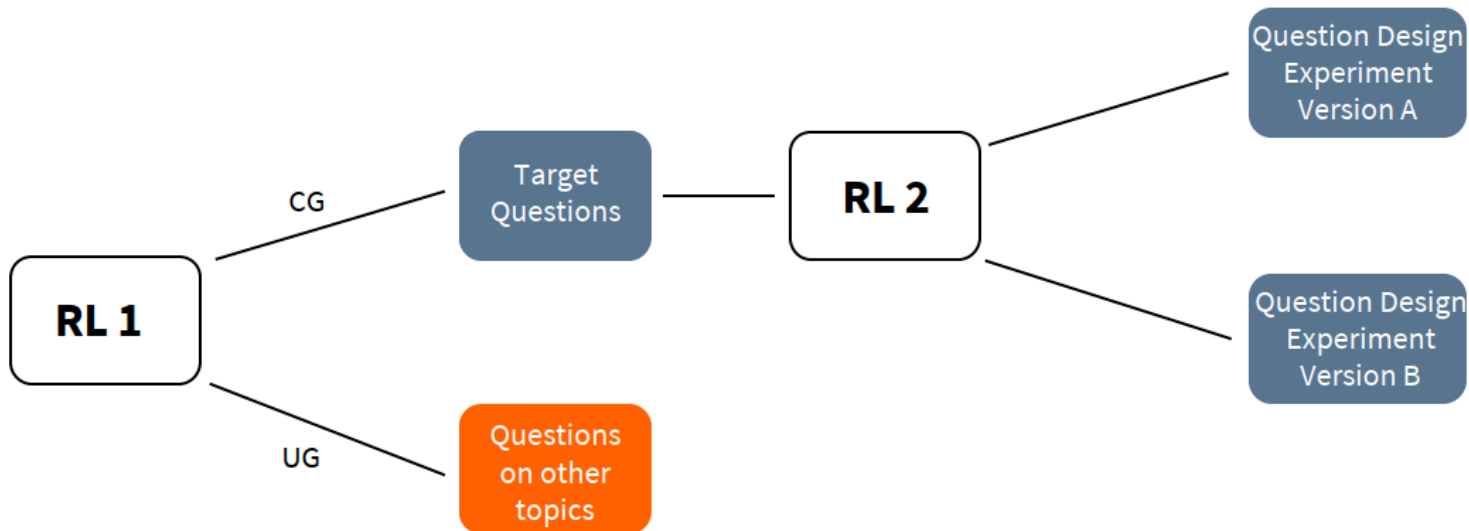
Design

- 2-level randomization
- Randomization level 1
 - ▶ Manipulating the frequency of receiving identical question content over the 6 panel waves (1 time vs. 6 times)



Design

- Randomization level 2
 - ▶ Manipulating the design of the target questions to measure satisficing
 - ▶ Independent random assignment to the question versions in each wave



Measures

Satisficing response behavior

- ▶ Choosing first response options (i.e., primacy effect)
 - ▶ Agreeing with statements (i.e., acquiescence)
 - ▶ Saying „don't know“
-
- 6 question design experiments
 - ▶ 2 manipulating response order
 - ▶ 2 manipulating whether question was displayed in agree/disagree format or construct specific format
 - ▶ 2 manipulating inclusion of „don't know“-option

Response order experiment 1

Version A

Some people think that the **state** should ensure adequate housing for everyone, while others think that **everyone** should take care of their own housing. Which of these views comes closest to your opinion?

A = The **state** should provide adequate housing.

B = **Everyone** should take care of their own housing.

Version B

Some people think that **everyone** should take care of their own housing, while others think that the **state** should ensure that everyone has adequate housing. Which of these views comes closest to your opinion?

B = **Everyone** should take care of their own housing.

A = The **state** should provide adequate housing.

→ Tendency to choose first response option irrespective of content (primacy effect)

Acquiescence experiment 1

Version A

Do you agree or disagree with the following statement?

Most men are emotionally better suited for politics than most women.

A = Agree

B = Disagree

Version B

Would you say that most men are emotionally better suited for politics than most women, that men and women are equally suited for politics, or that women are better suited for politics than men?

A = Most men are better suited.

B = Men and women are equally well suited.

C = Most women are better suited.

→ Tendency to simply agree with statements
(acquiescence)

Don't know experiment 1

Version A

In general, do you think courts are too tough or not tough enough on criminals, or do you not know?

A = Too tough

B = Not tough enough

C = Don't know

Version B

In general, do you think courts are too tough or not tough enough on criminals?

A = Too tough

B = Not tough enough

→ Tendency to say “don't know” instead of giving substantial answer (saying “don't know”)

Measures

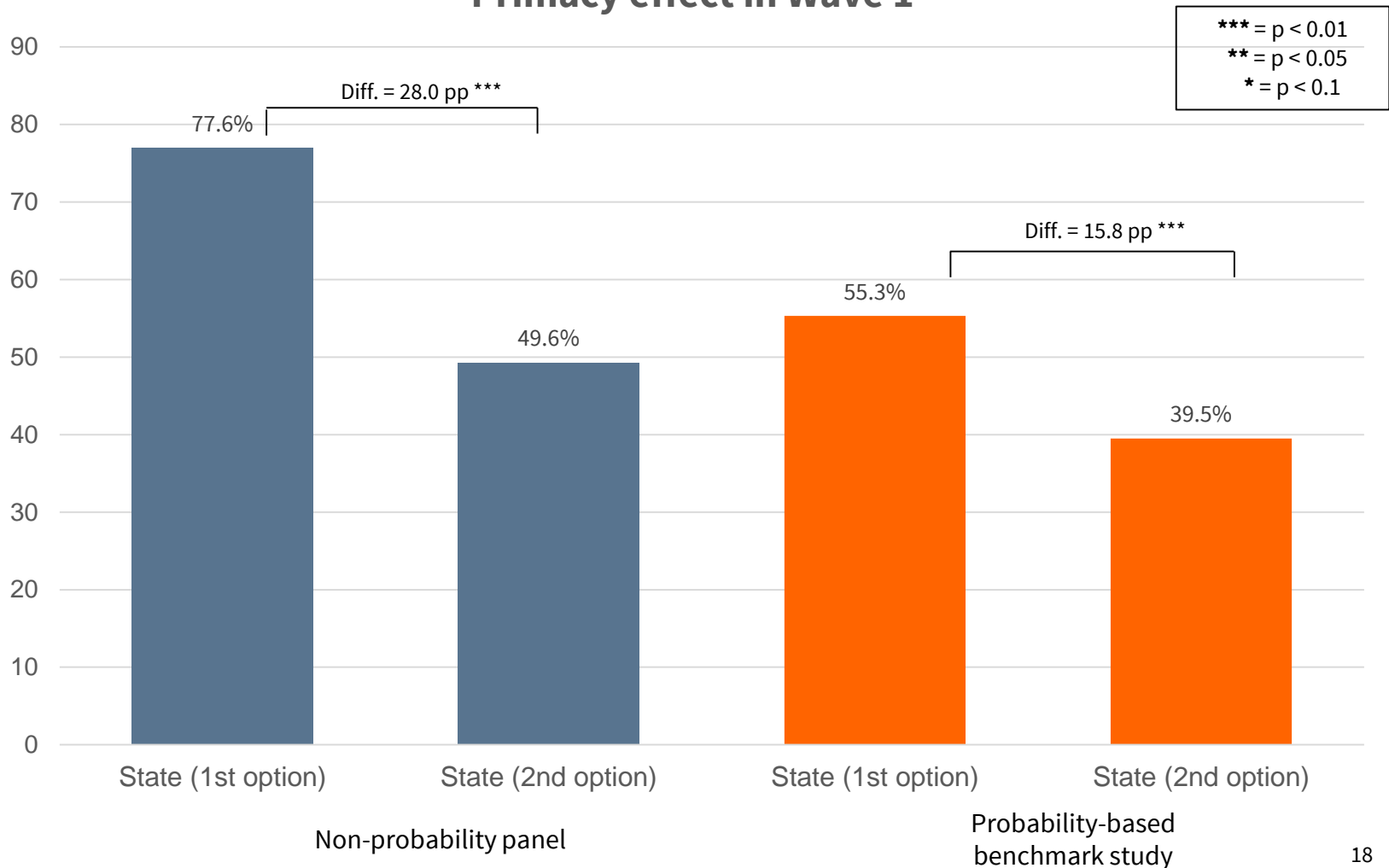
Moderators

- Panel interval
 - ▶ Two different respondent groups being surveyed either monthly (i.e., short) or about every three months (i.e., long)
- Respondents' cognitive ability:
 - ▶ Actual cognitive performance: Sum score on cognitive reflection task (Frederick, 2005)
 - ▶ Education based on highest school leaving certificate
- Respondents' motivation
 - ▶ Mean score of need for cognition (Beißert et al., 2014)

Results

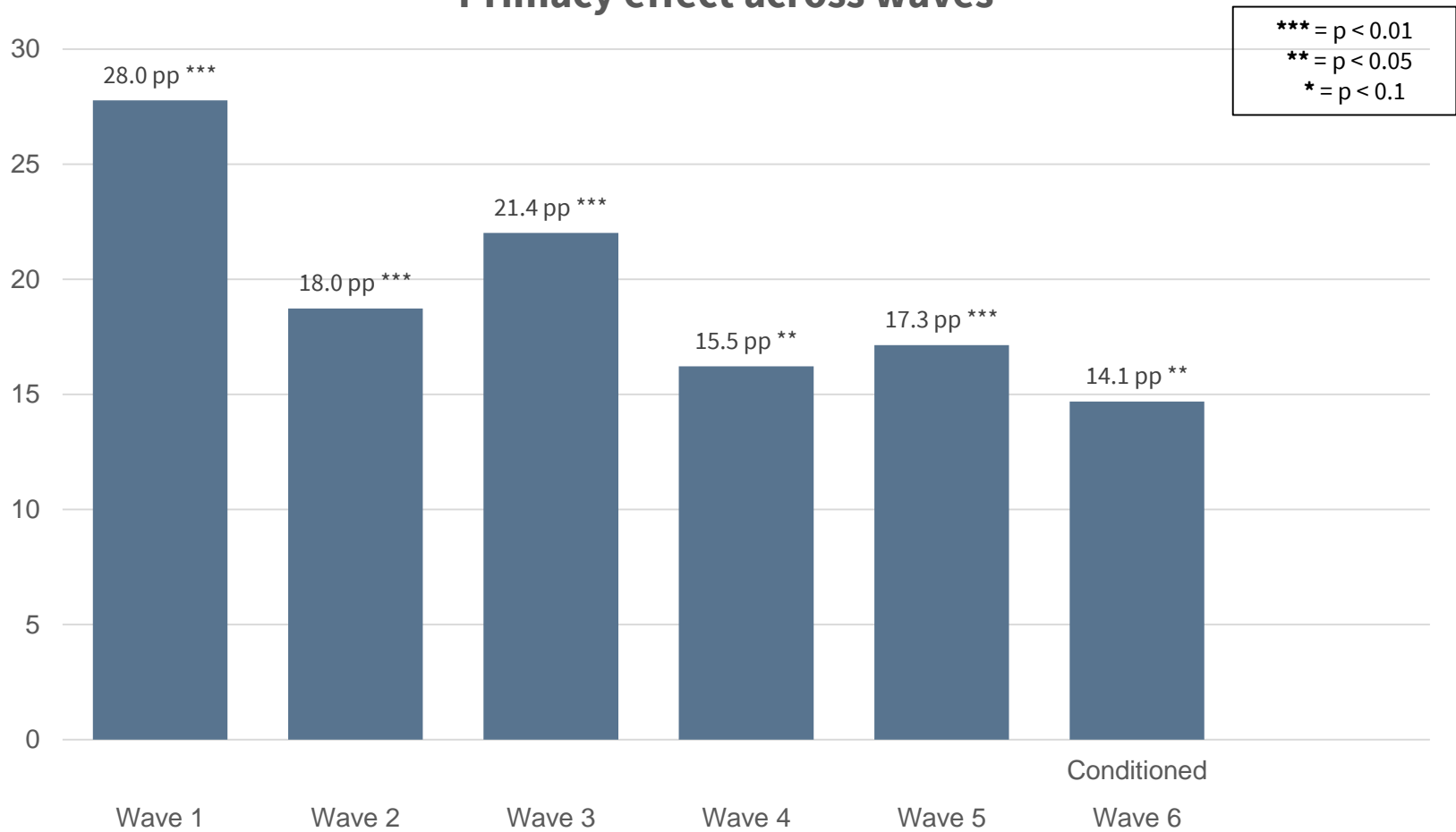
Response order experiment: Housing

Primacy effect in Wave 1



Response order experiment: Housing

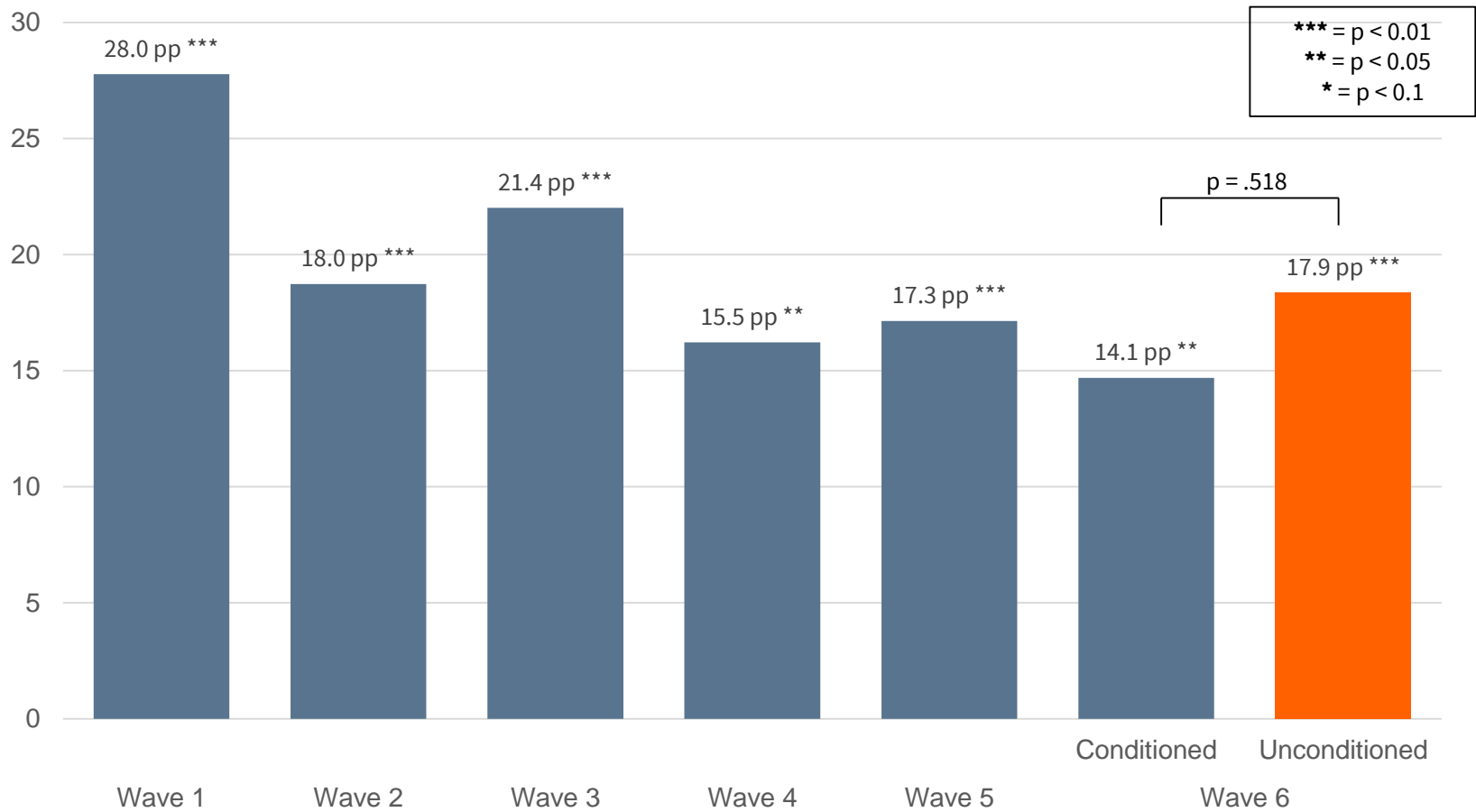
Primacy effect across waves



Non-probability panel

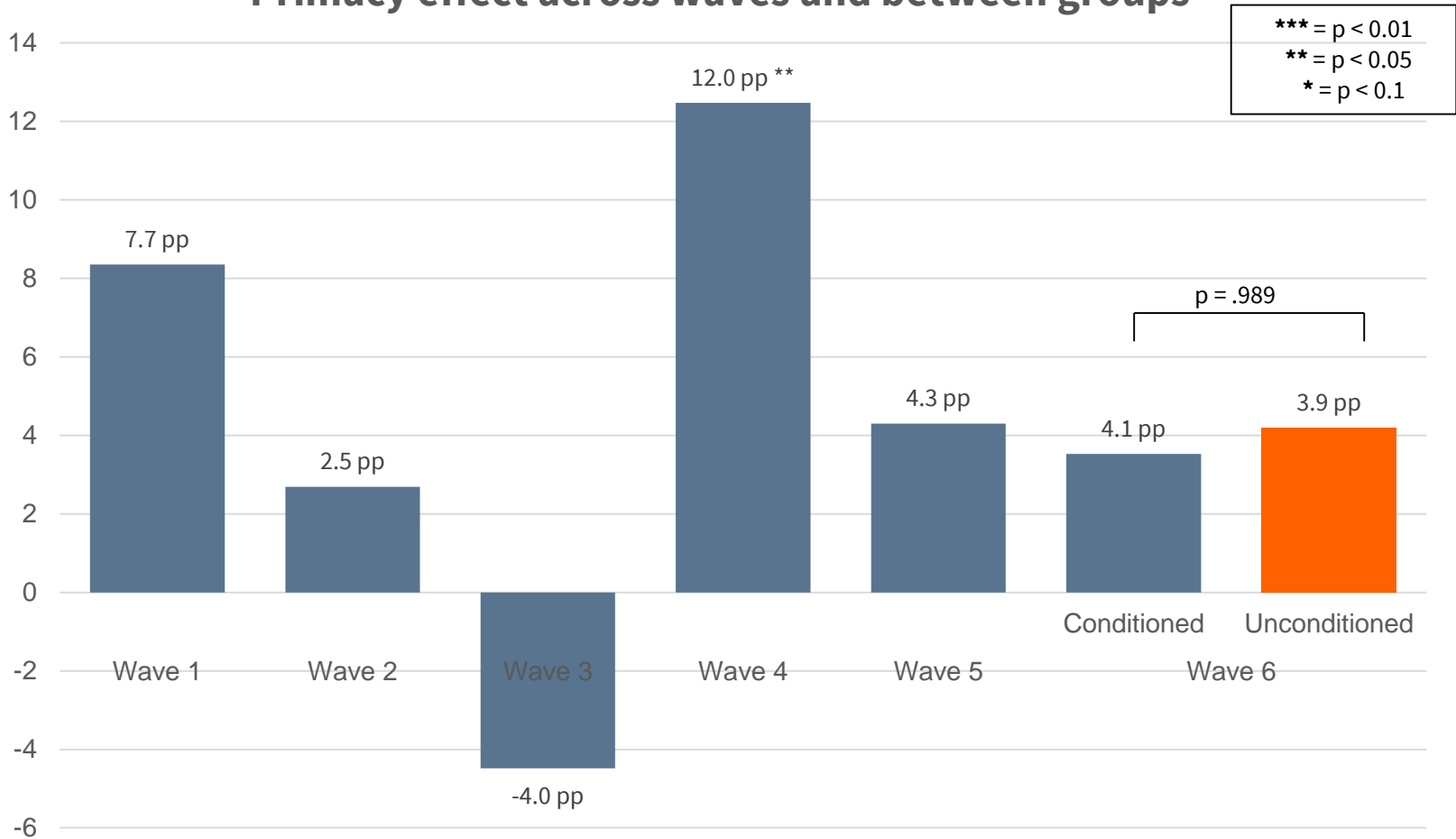
Response order experiment: Housing

Primacy effect across waves and between groups



Response order experiment: Trust

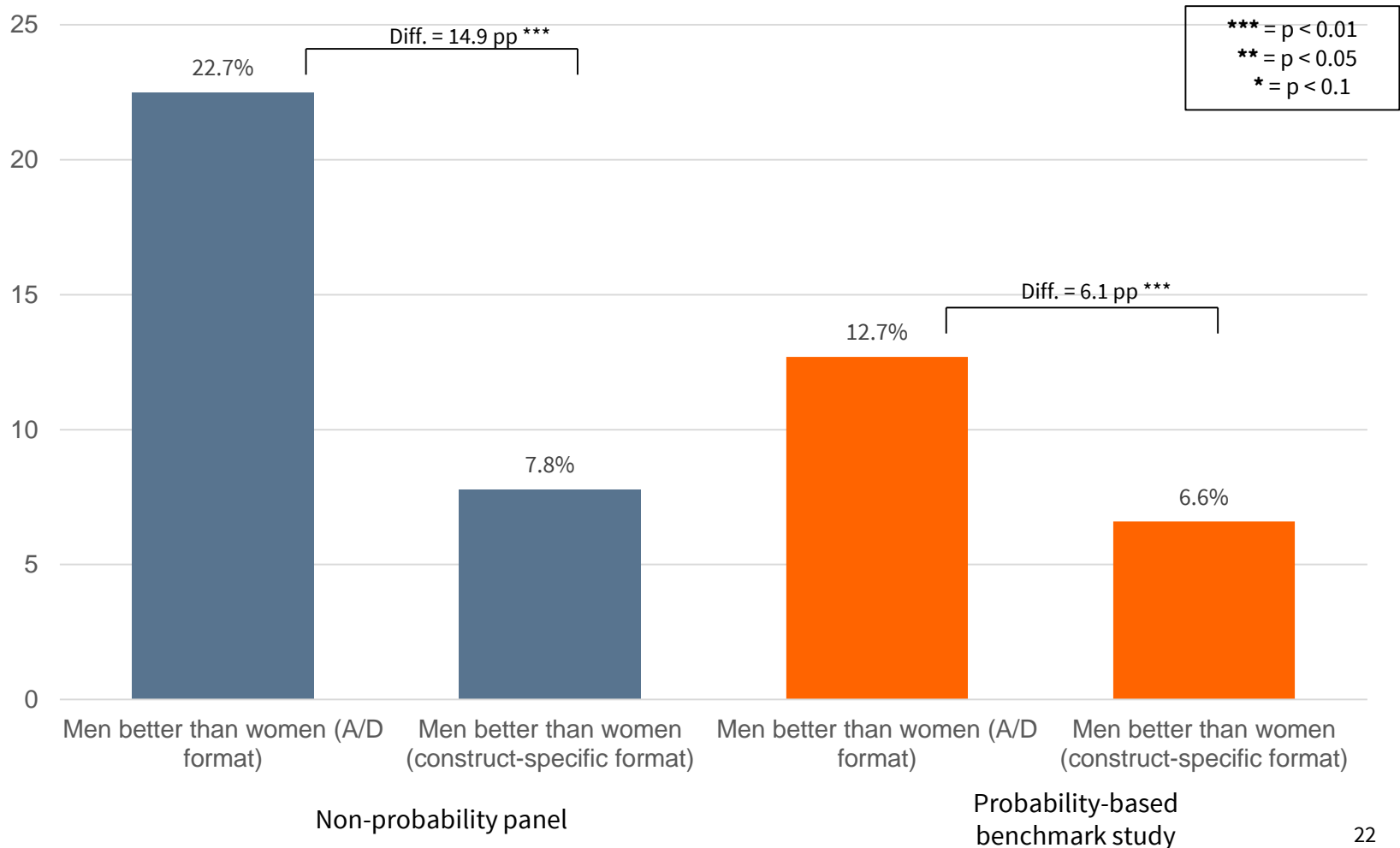
Primacy effect across waves and between groups



Non-probability panel

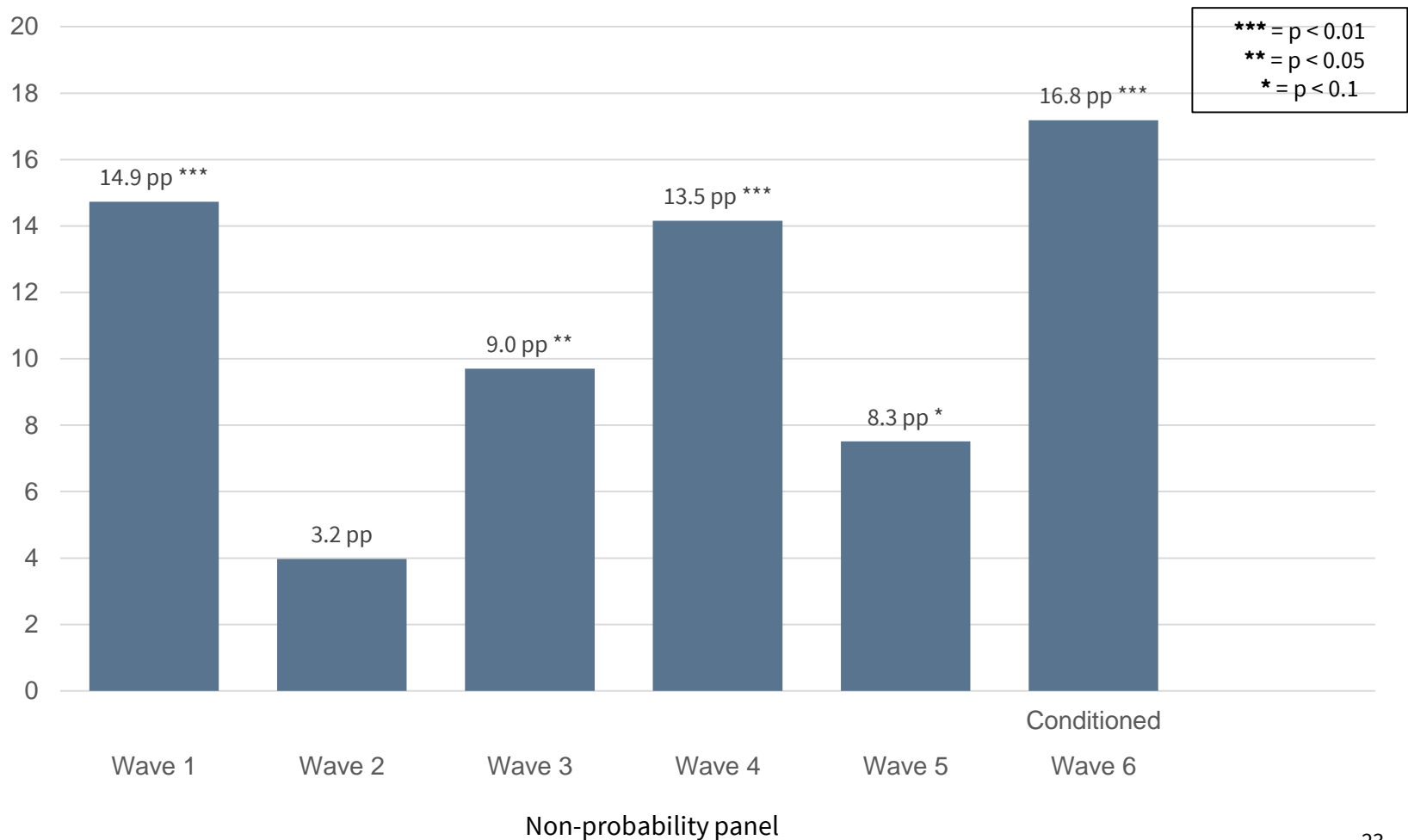
Acquiescence experiment: Women in politics

Acquiescence bias in Wave 1



Acquiescence experiment: Women in politics

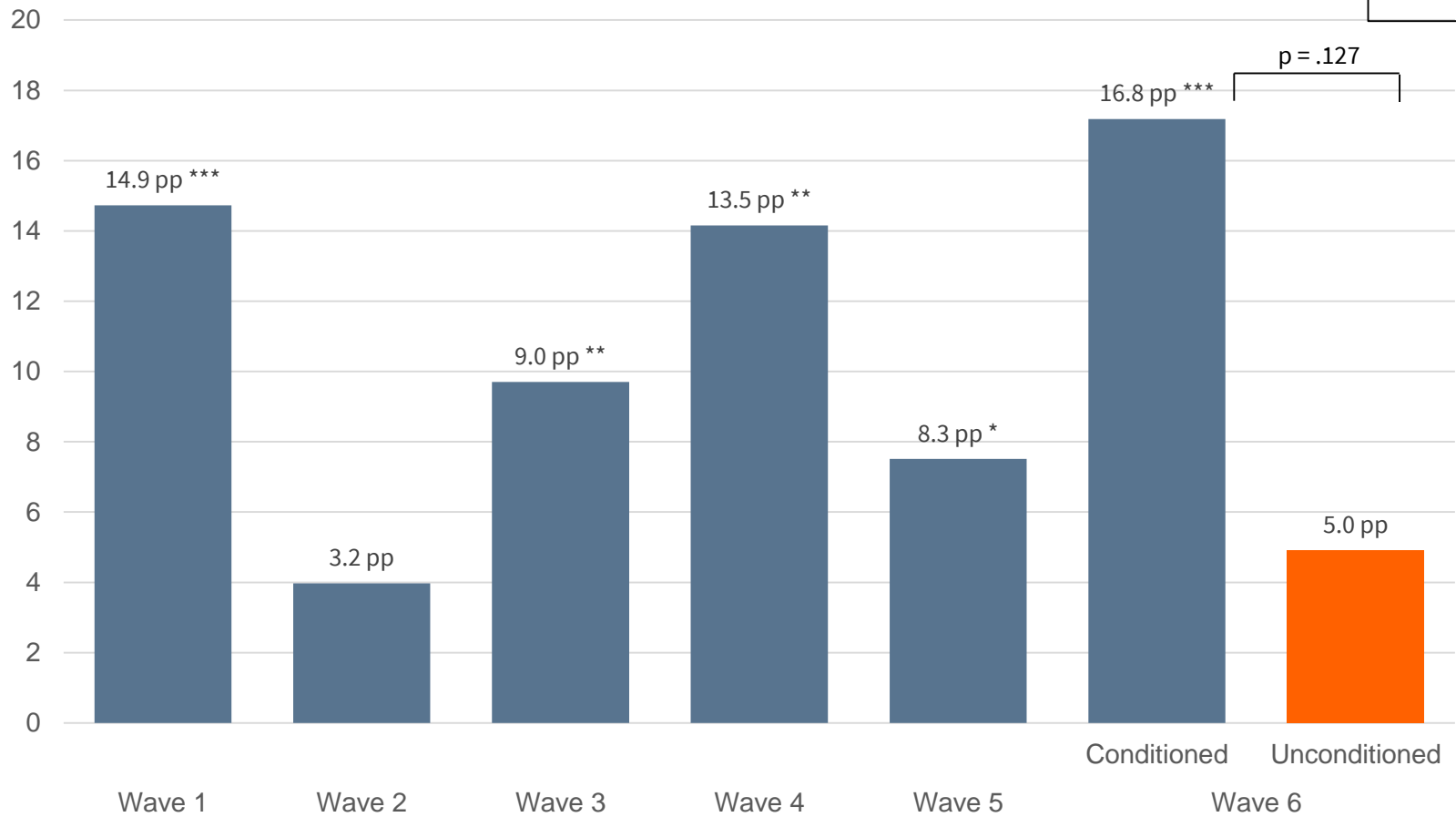
Acquiescence bias across waves



Acquiescence experiment: Women in politics

Acquiescence bias across waves and between groups

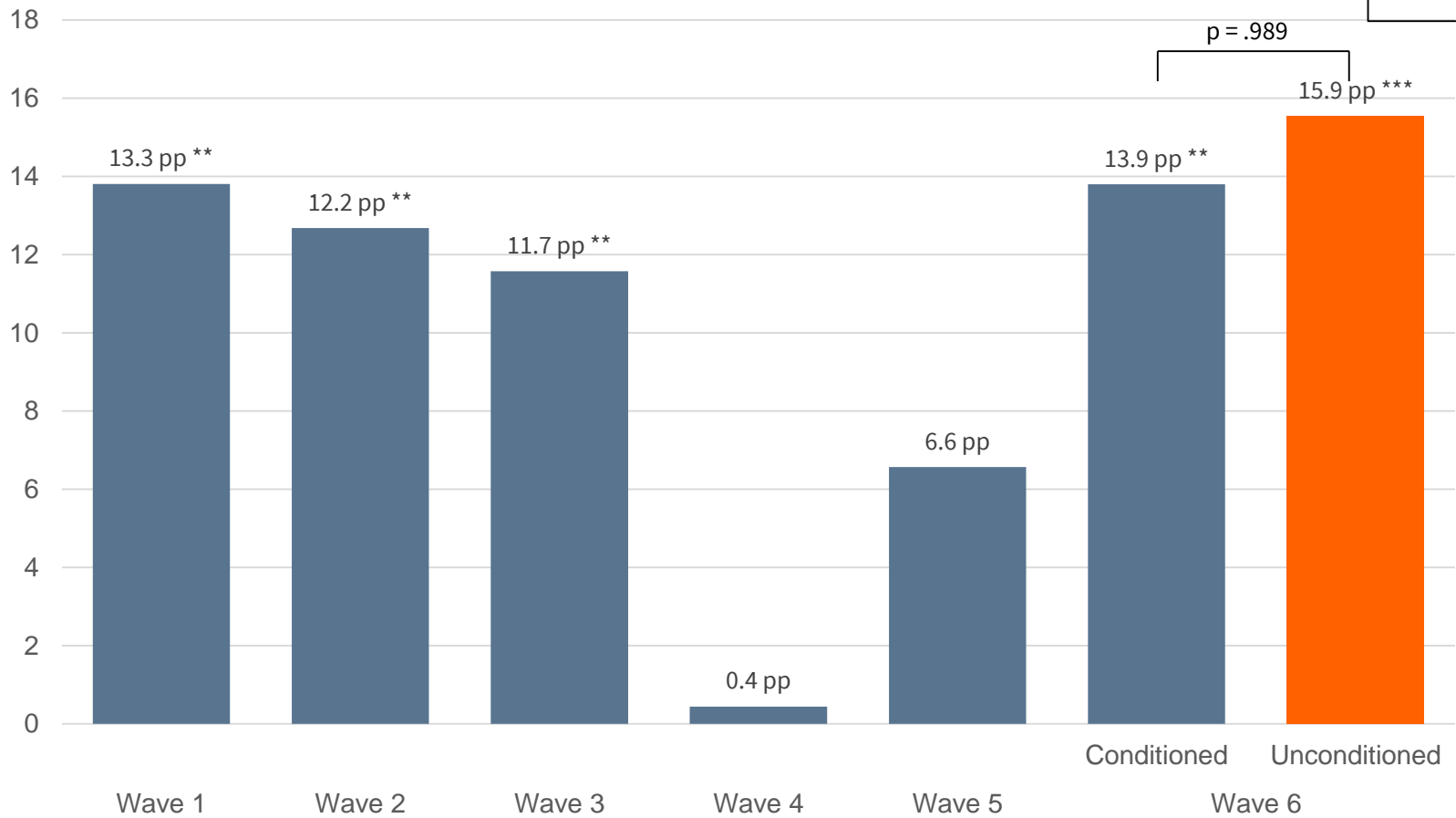
*** = $p < 0.01$
** = $p < 0.05$
* = $p < 0.1$



Acquiescence experiment: Crime

Acquiescence bias across waves and between groups

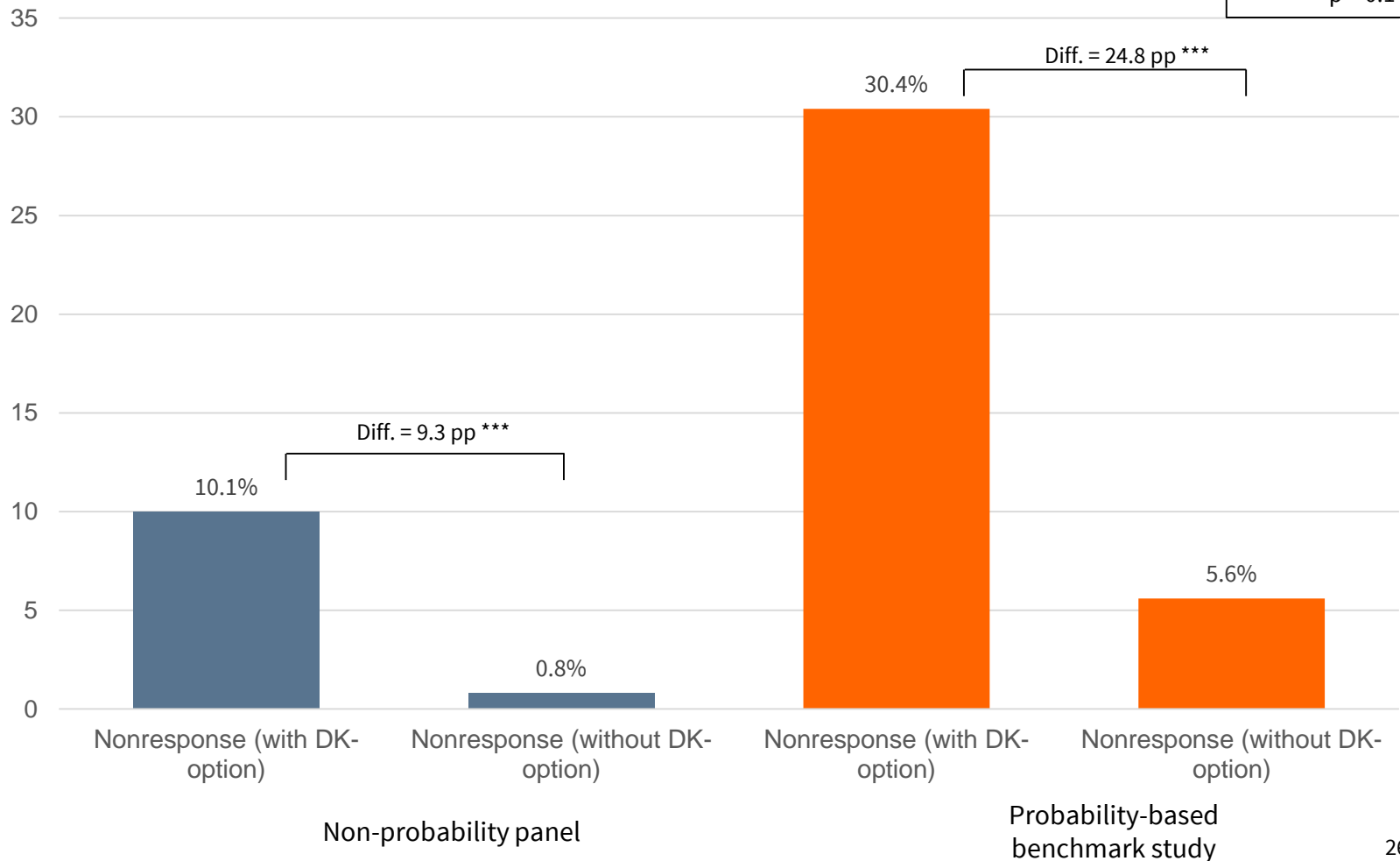
*** = $p < 0.01$
 ** = $p < 0.05$
 * = $p < 0.1$



Don't know experiment: Courts

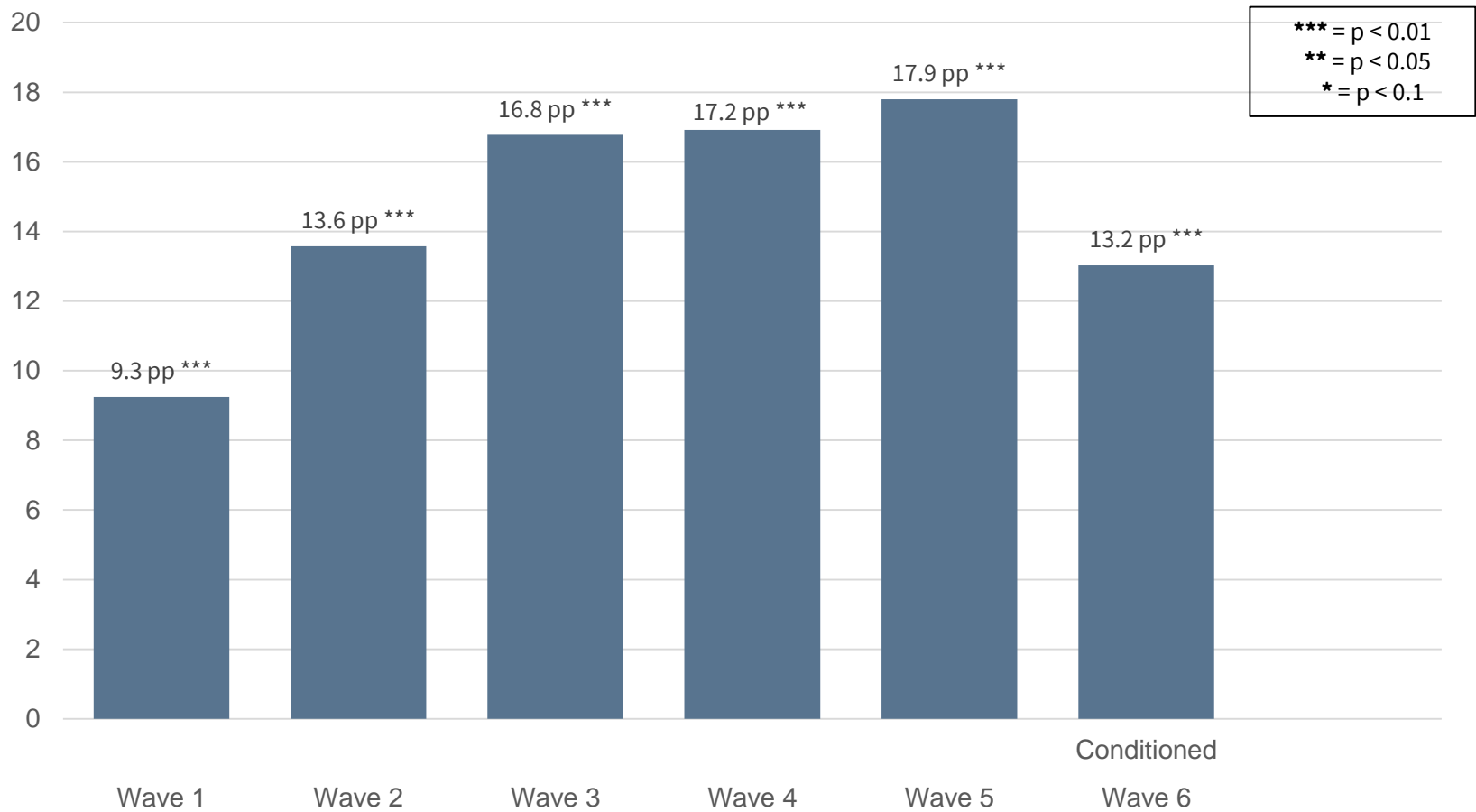
Saying "don't know" in Wave 1

*** = $p < 0.01$
** = $p < 0.05$
* = $p < 0.1$



Don't know experiment: Courts

Don't know effect across waves

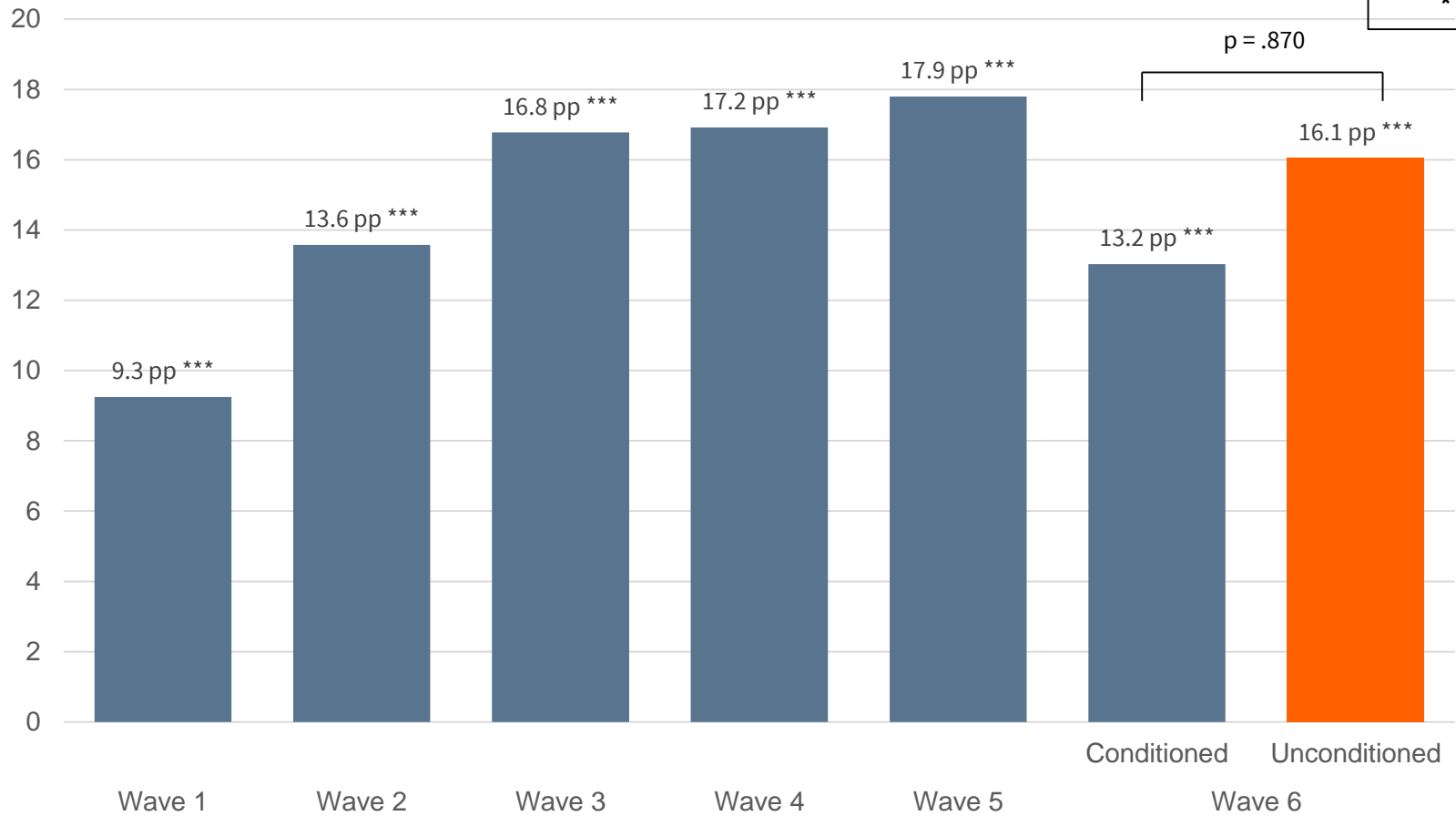


Non-probability panel

Don't know experiment: Courts

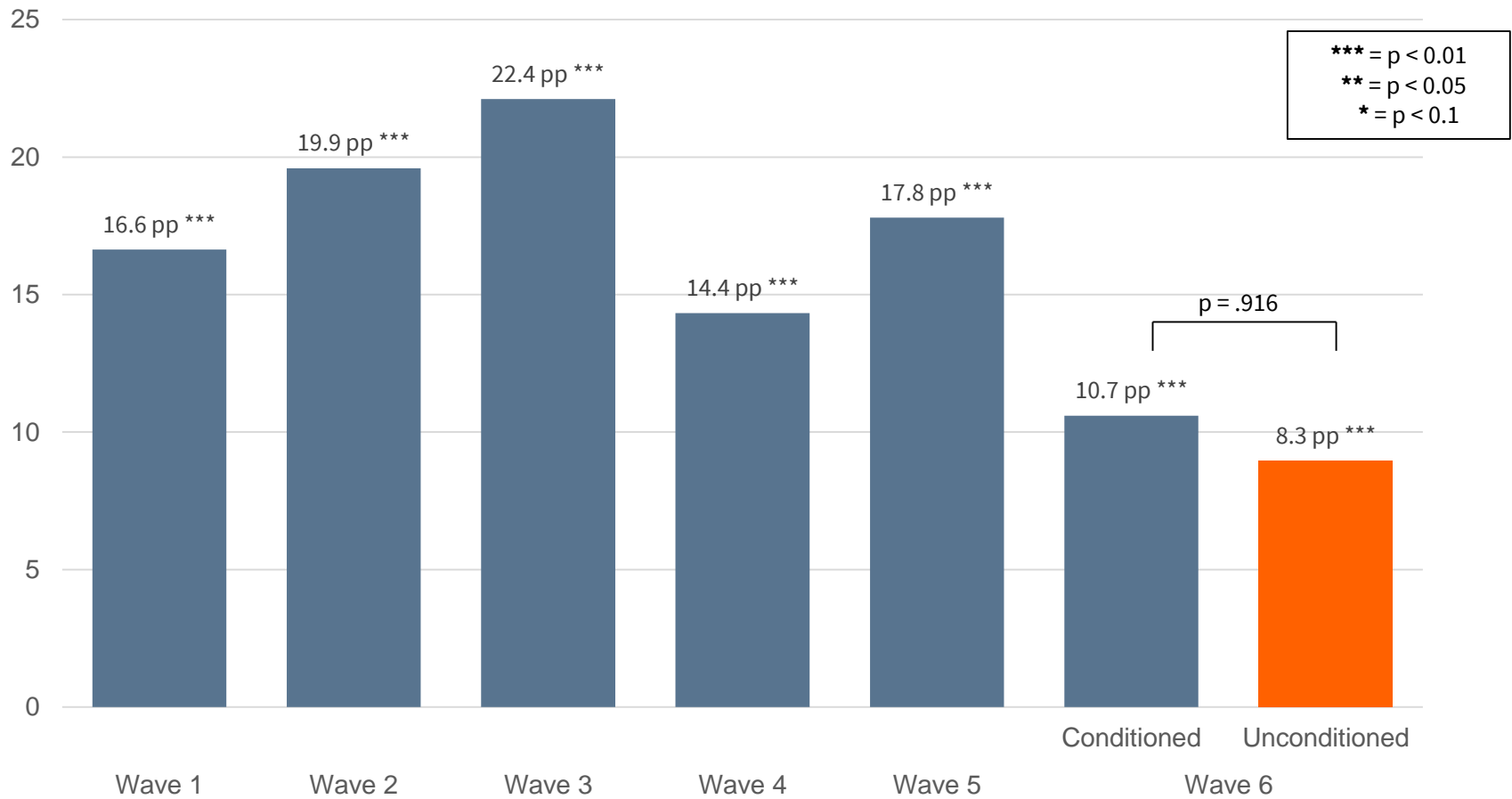
Don't know effect across waves and between groups

*** = $p < 0.01$
 ** = $p < 0.05$
 * = $p < 0.1$



Don't know experiment: Smart leaders

Don't know effect across waves and between groups



Results

- Non-significant changes in satisficing across waves
- No significant difference in the extent of satisficing between conditioned and unconditioned respondents → absence of content and process learning
- No significant effects of panel interval, respondents' cognitive ability & motivation on the extent of satisficing caused by repeatedly answering identical questions

Summary

Research Question	Assumption	Result
RQ1: Does satisficing increase or decrease over the course of a panel study?	Increasing levels of satisficing across waves	X
	Decreasing levels of satisficing across waves	X
RQ2: Does content learning account for change in satisficing across waves of a panel study?	Changes in satisficing are caused by content learning	X
RQ3: Do different panel intervals, cognitive ability, and motivation moderate change in satisficing across panel waves?	Longer interval between panel waves decreases change in satisficing caused by repeatedly answering identical questions	X
	Higher cognitive abilities decrease change in satisficing caused by repeatedly answering identical questions	X
	High motivation decreases change in satisficing caused by repeatedly answering identical questions	X

Conclusion

- No evidence of panel conditioning causing changes in satisficing across waves
- However, panel data is considerably affected by satisficing with effect sizes ranging up to 15 percentage points or more
- Satisficing is problematic for panel studies and some question designs foster the occurrence of satisficing (e.g., agree/disagree response formats)
- Extent of satisficing in non-probability panel was similar to the probability-based benchmark study
- Survey practitioners should closely monitor satisficing in their panel studies

Thank you for your attention!

gesis

Leibniz Institute
for the Social Sciences



Contact:

Fabienne Kraemer
GESIS – Leibniz Institute for the
Social Sciences
fabienne.kraemer@gesis.org

References

- *Bach, R. L., & Eckman, S. (2018). Motivated misreporting in web panels. Journal of Survey Statistics and Methodology, 6(3), 418-430.*
- *Bach, R. L., & Eckman, S. (2020). Rotation group bias in reporting of household purchases in the US Consumer Expenditure Survey. Economics Letters, 187, 108889.*
- *Kalton, G., Kasprzyk, D., & McMillen, D. B. (1989). Nonsampling errors in panel surveys. In D. Kasprzyk, G. Duncan, G. Kalton, & M. P. Singh (Eds.), Panel surveys (pp. 249–270). New York, NY: Wiley.*
- *Krosnick, J. A. (1991). Response strategies for coping with the cognitive demands of attitude measures in surveys. Applied cognitive psychology, 5(3), 213-236.*
- *Schonlau, M., & Toepoel, V. (2015, July). Straightlining in Web survey panels over time. In Survey Research Methods (Vol. 9, No. 2, pp. 125-137).*
- *Silber, H., Schröder, J., Struminskaya, B., Stocké, V., & Bosnjak, M. (2019). Does panel conditioning affect data quality in ego-centered social network questions?. Social Networks, 56, 45-54.*
- *Struminskaya, B. (2016). Respondent conditioning in online panel surveys: Results of two field experiments. Social Science Computer Review, 34(1), 95-115.*
- *Struminskaya, B., & Bosnjak, M. (2021). Panel Conditioning: Types, Causes, and Empirical Evidence of What We Know So Far. In P. Lynn (Ed.), Advances in Longitudinal Survey Methodology (pp. 272–301) John Wiley & Sons.*
- *Sun, H., Tourangeau, R., & Presser, S. (2019). Panel Effects: Do the Reports of Panel Respondents Get Better or Worse over Time?. Journal of Survey Statistics and Methodology, 7(4), 572-588*
- *Warren, J. R., & Halpern-Manners, A. (2012). Panel conditioning in longitudinal social science surveys. Sociological Methods & Research, 41(4), 491-534.*