



# The Price of PFAS: How Access to PFAS Information Affects Willingness-to-Pay for Products Labelled as “PFAS Free” or “Contains PFAS”

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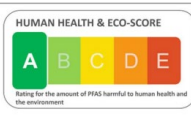
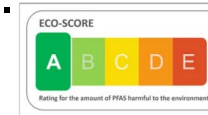
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# Background & Gap

- Concern about per- and polyfluoroalkyl substances (PFAS)
- Consideration of phasing out PFAS, e.g. in consumer products
- Consumers desire and may already see product labels saying “PFAS free”
- Potential for further consumer-facing warning labels under CLP regulations
- However, public knowledge about PFAS remains relatively low (e.g., Special Eurobarometer, 2024; own data from ZeroPM and SOS-ZEROPOL2030)
- We currently know little about
  - consumer responses to products with different kinds of PFAS labels
  - the effect of giving PFAS information (or not)
  - How emotions affect consumer responses in this context

# Two Studies - overview

- Study 1: PFAS warning versus 'free-from PFAS' labels on willingness-to-pay for sports shoes. In addition, PFAS information was given or not, and the role of positive and negative emotions was explored.
- Study 2: Traffic light labelling approach (A / C / E) on willingness-to-buy for rain jackets. Labels also distinguished effects on environment, health or both. Also PFAS info Y/N and role of specific emotions explored.
- **Analytical approach** both studies:
  - **Mixed-models in R (bc within and between elements)** with random intercepts by-participant
  - Initial models tested for possible mediator (affect) and moderator (PFAS info given) effects on WTP/WTB
  - Full model including all the above effects (plus covariates of trust in labels and prior knowledge of PFAS) on WTP/WTB



# Study 1 Methods

- Participants:  $n = 406$  (193 f, 213 m; M age = 31 yrs, SD = 11.10); convenience sample via prolific
- Sport shoes selected as can contain PFAS, e.g., for water repellence (Glüge et al., 2020)

- Experimental Design:

**Labels:** Baseline; PFAS free vs warning label (within)

**Information:** PFAS info on risks and benefits included vs. not included (between)

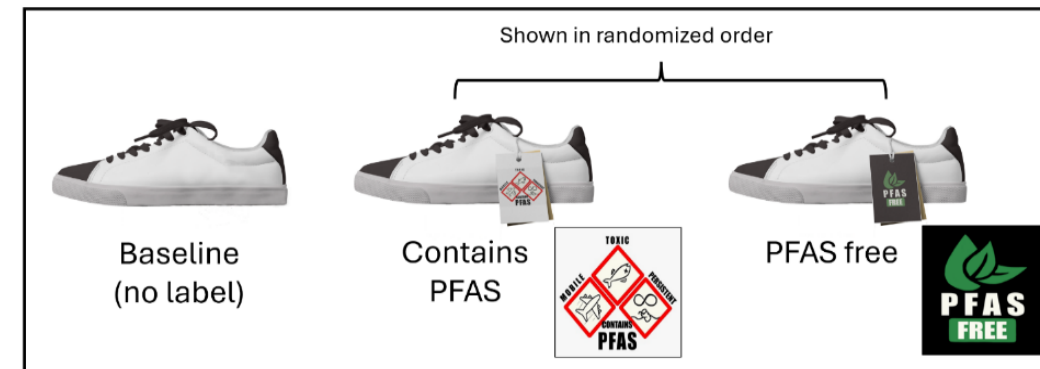


- **Main Outcome: Willingness To Pay**

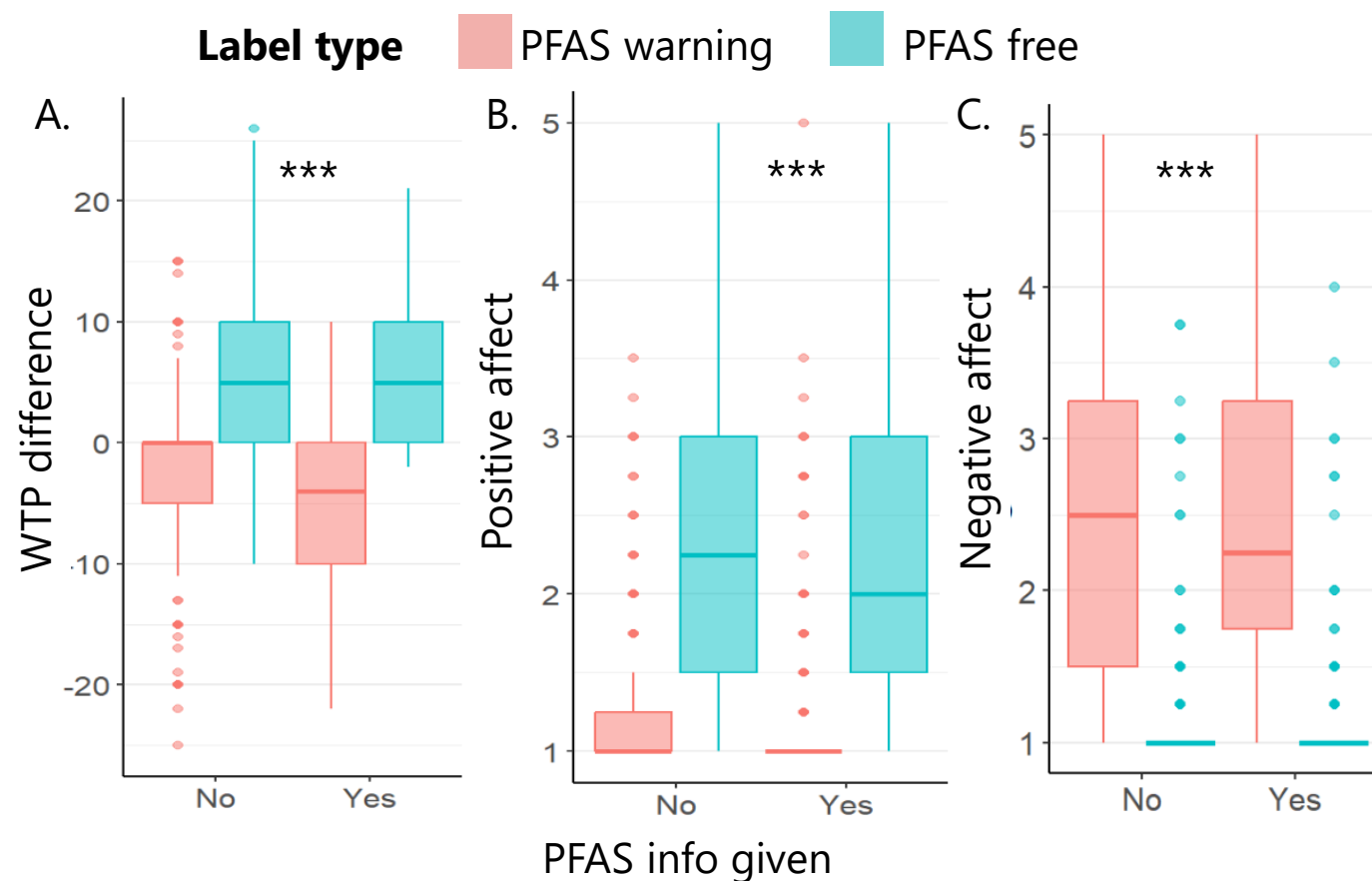
“How much would you pay for this product?” €40-100 slider (based on similar shoes online)

Calculated as **change score** from baseline

- Emotion measure (SPANE-8; Kyriazos et al., 2018)
    - 4 positive (i.e., pleasant, happy, joyful, contented)
    - 4 negative (i.e., bad, sad, afraid, angry)
- 5-point scale of ‘Not at all’ – ‘A great deal’



# Study 1 Results I



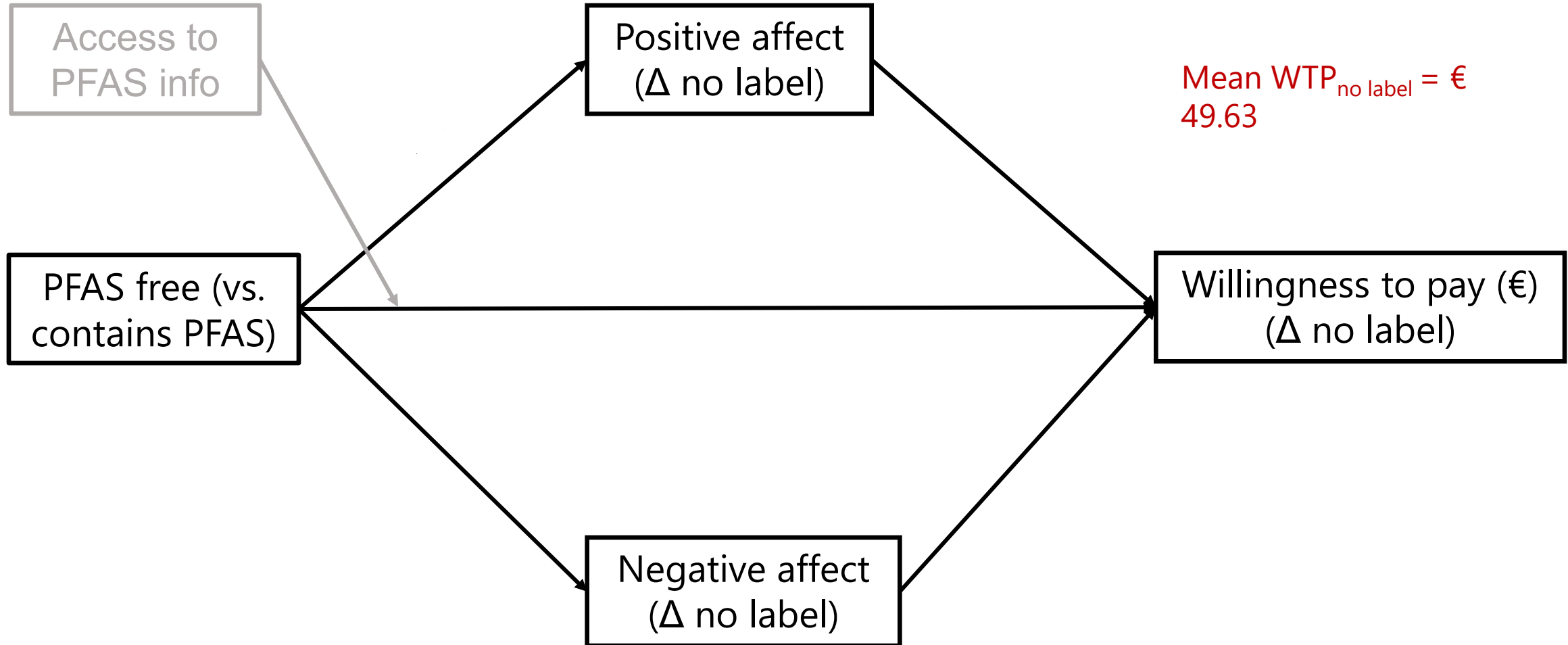
*A: Average difference in WTP (from baseline) by label type and additional PFAS information Y/N.*

*B: Average positive affect by label type and additional PFAS information Y/N*

*C: Average positive affect by label type and additional PFAS information Y/N*

*The central bar of each boxplot represents the conditional median response.*

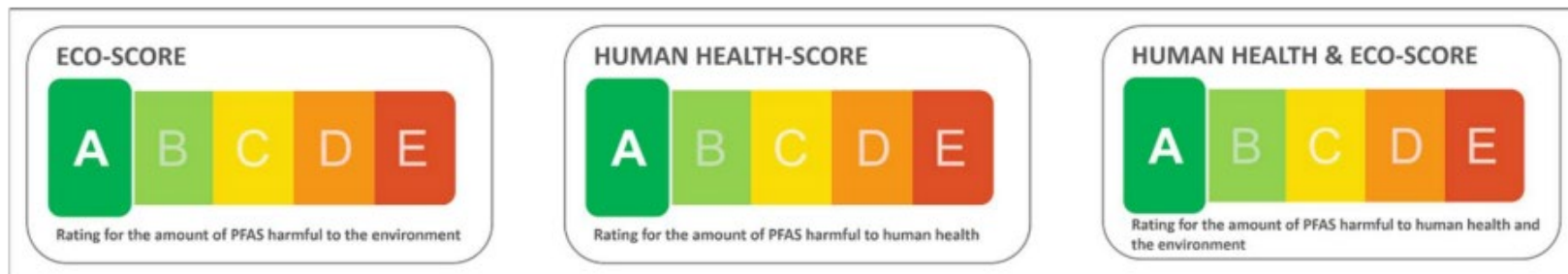
# Study 1



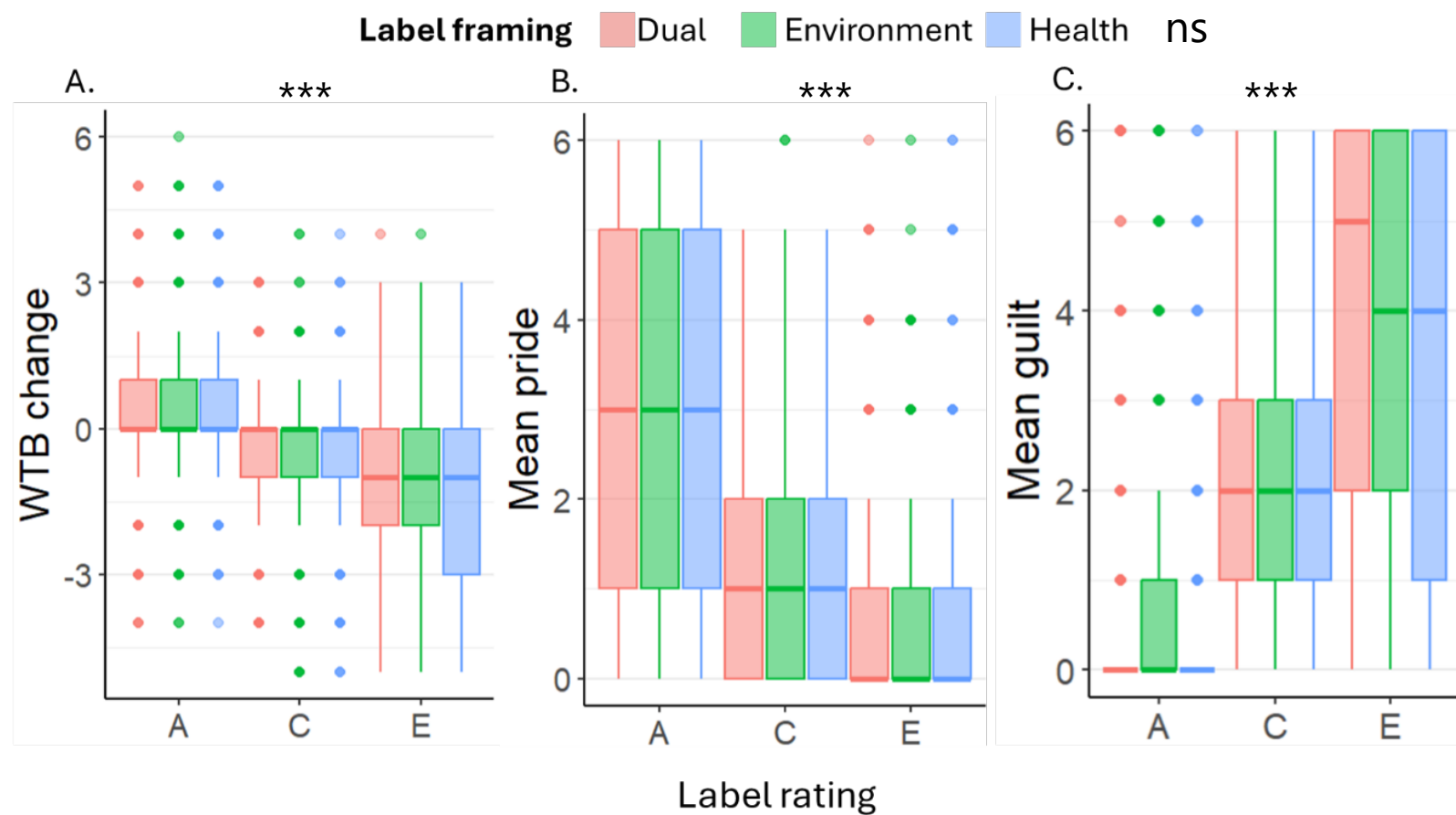
# Study 2 Methods

- Participants:  $n = 386$  (180f/198m/8d; M age = 30, SD = 9.79); convenience sample via prolific
- Imagine holiday unpredictable weather, e.g., Scotland
- Rated 15 pictures of non-branded rain jackets at **baseline** (no further information)
- Then everyone **given info** on PFAS risks and benefits
- Then jackets were split into 3 **PFAS labelling groups**: 5 x A, 5 x C and 5 x E.
- **Framing**: environment, health, both (between)
- **Main Outcome: Willingness to Buy** (not at all likely [1] to extremely likely [7]); calculated as change score from baseline
- More specific **emotions**: pride and guilt (not at all [1] to extremely [7])
- **Covariates** (full model): attractiveness of items, trust in labels and prior knowledge

Exp. Design



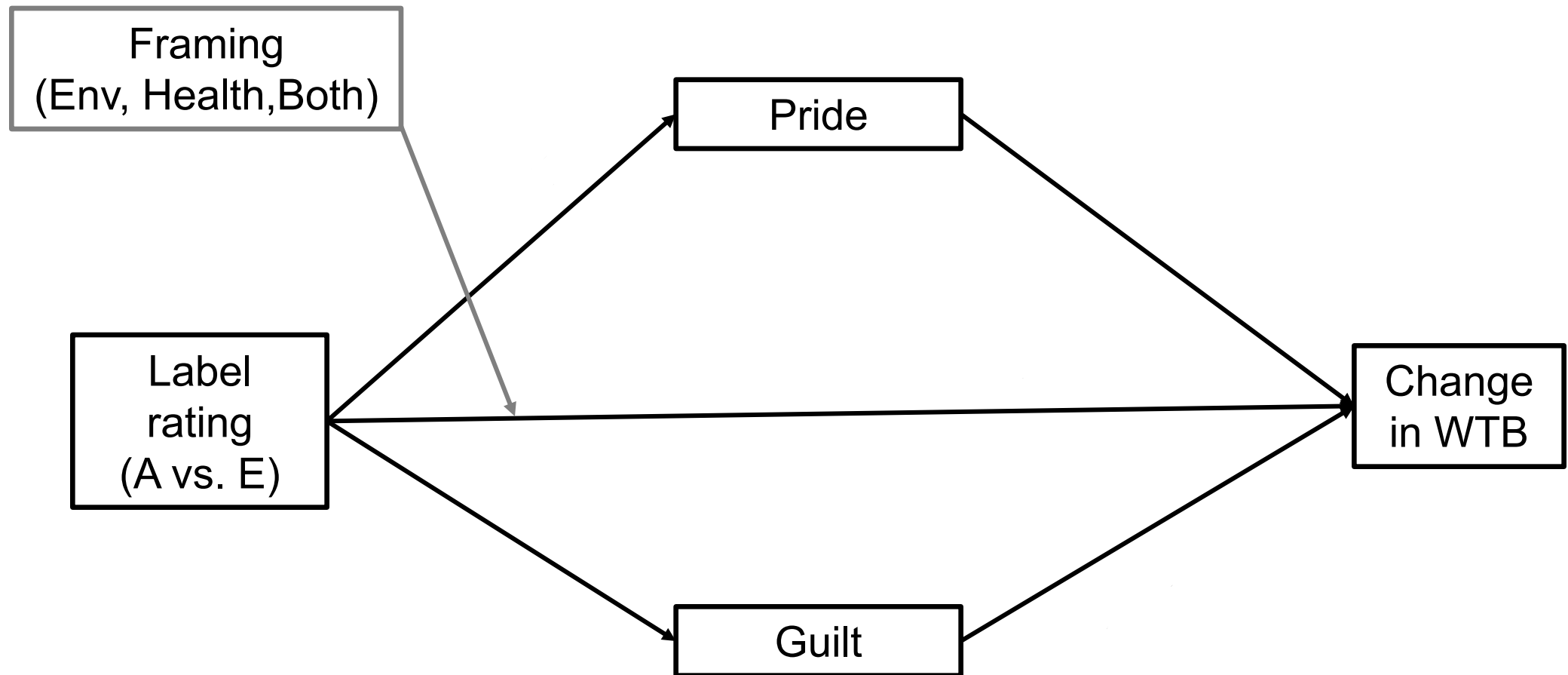
# Study 2 Results I



*A: mean difference in WTB, B: mean pride, C: mean guilt – all by label rating and framing. The central bar of each boxplot represents the conditional median response.*



## Study 2



# Conclusions

- **Warning labels** ('contains PFAS' or a 'C'/'E' rating) resulted in lower willingness-to-pay (~8% less, Study 1) and willingness-to-buy (~10-29% less, Study 2)
- **PFAS free or 'A' PFAS labels** resulted in higher willingness-to-pay (~15% more, Study 1), or higher willingness-to-buy (~7% more, Study 2)
- Somewhat mixed findings regarding provision of PFAS information (Y/N) and whether PFAS effects on environment, health or both
- Both studies showed that general (Study 1) and specific (Study 2) emotions play an important role in explaining effects, in line with consumer psychology.
- Implications for labelling consumer products





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