

Risk perception and communication about microplastics

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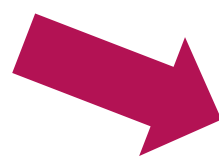
Environment & Climate
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Image: Sabine Pahl 2024

From evidence to action

The role of social processes



Major sources of microplastics



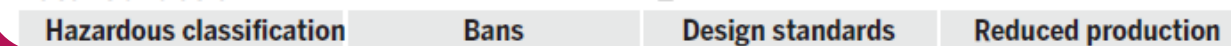
Bioavailability and impacts



Sociopolitical dynamics



Potential actions



Thompson, R.C., Courten-Jones, W., Boucher, J., Pahl, S., Raubenheimer, K., Koelmans, A.A. 2024. Twenty years of microplastics pollution research – what have we learned? *Science*

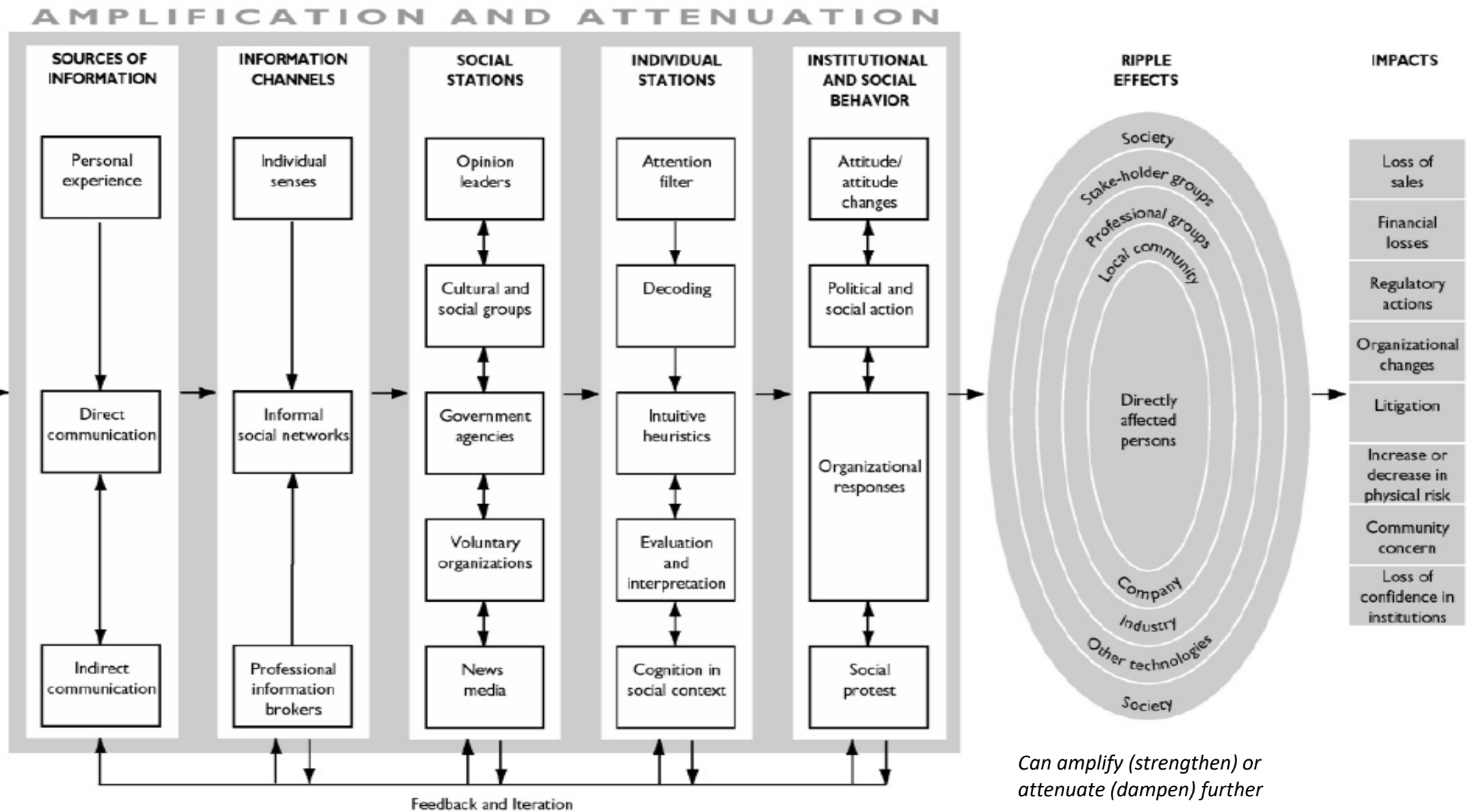
Microplastic pollution: Sources, impacts, and actions. Twenty years of research focused on microplastic pollution has identified their multiple sources, wide-scale environmental distribution, bioavailability, and impacts. This evidence, together with the associated sociopolitical dynamics, has started to drive actions on a global scale. NGOs, nongovernmental organizations.

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Risk in society

Risk and risk events

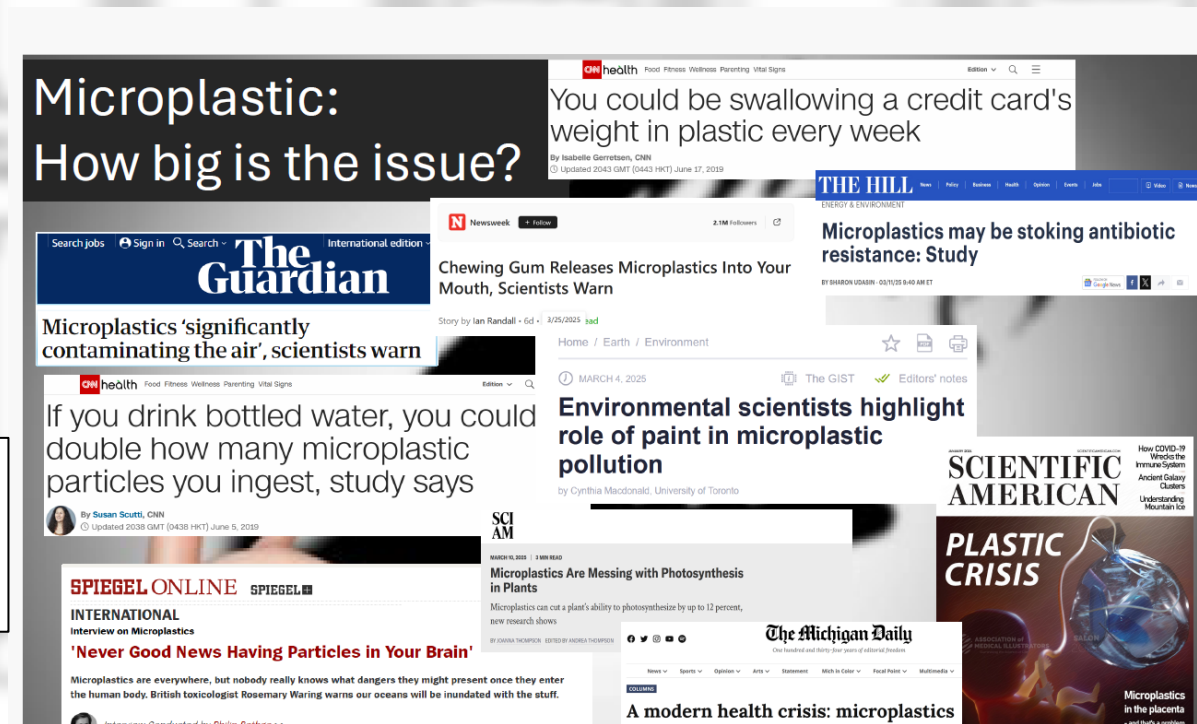
Incl. communications



Risk in society

Risk and risk events

From Todd Gouin's and Stephanie Wright's presentation:

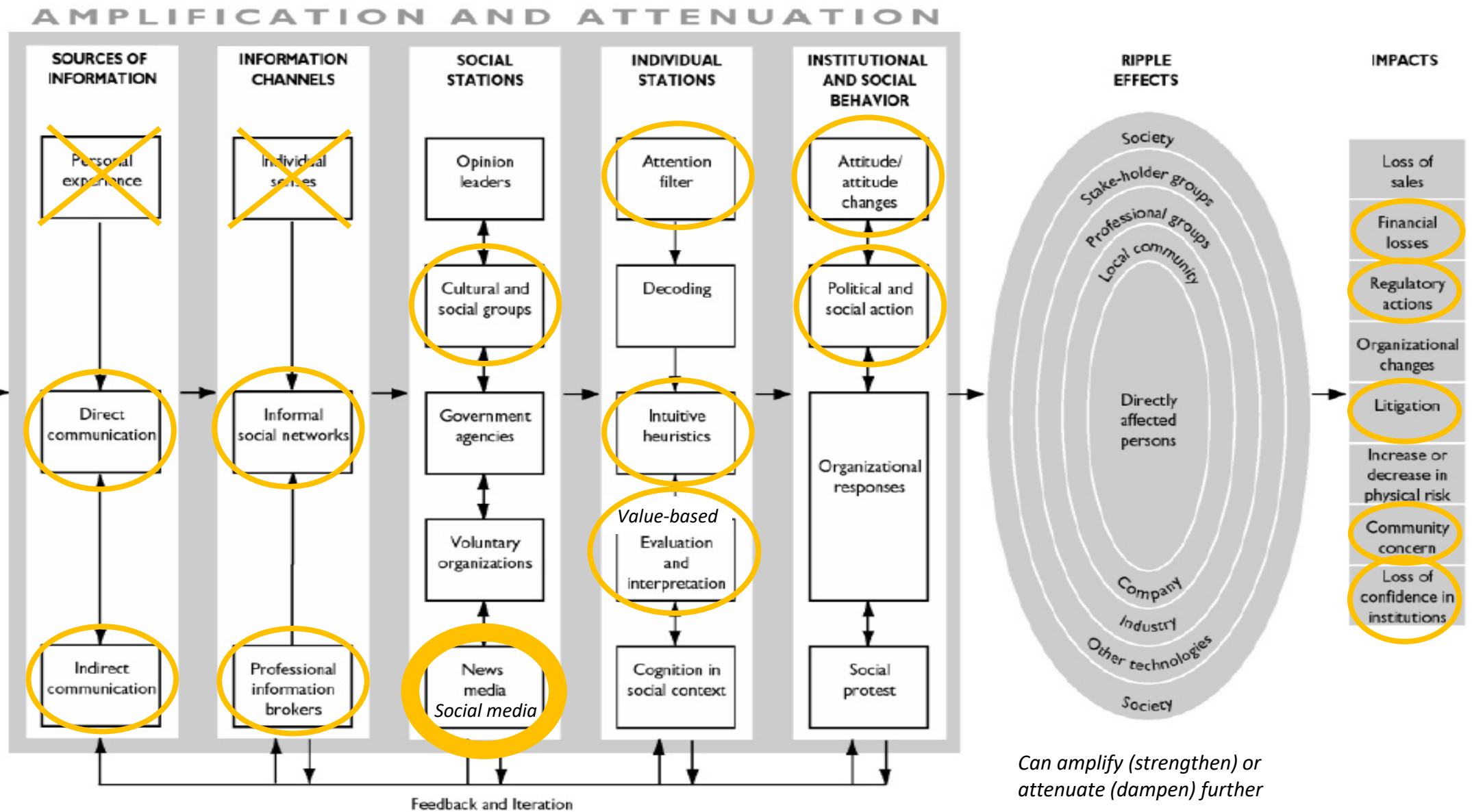


Can amplify (strengthen) or attenuate (dampen) further

Risk in society

Risk and risk events

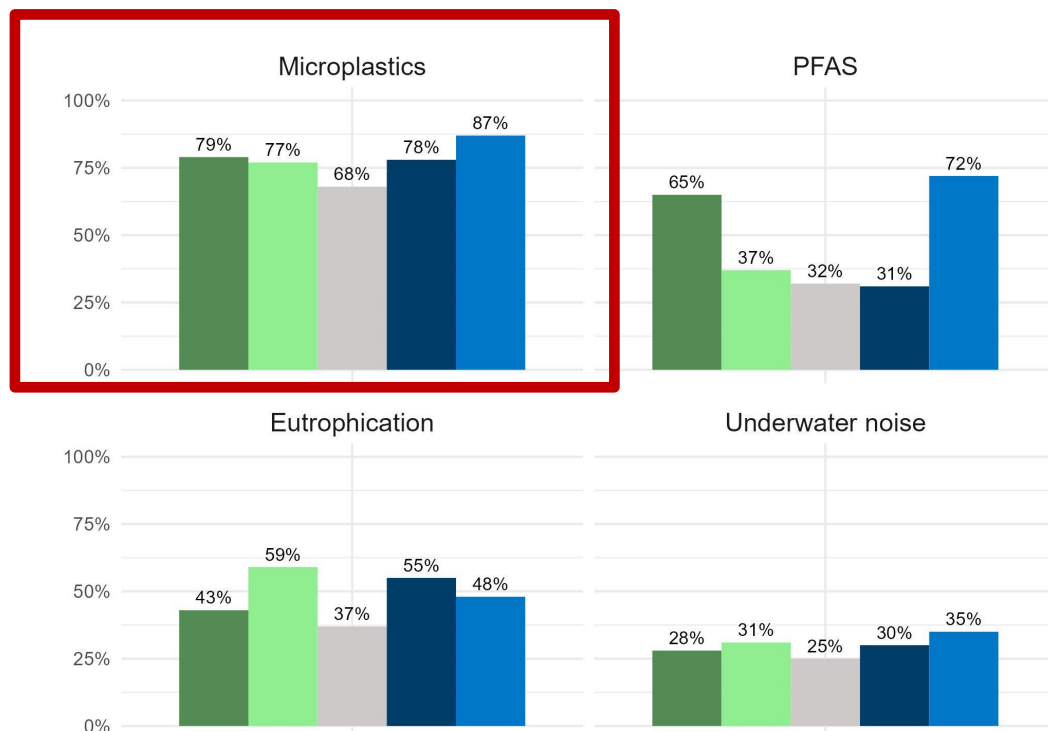
Example
Microplastics found in the brain



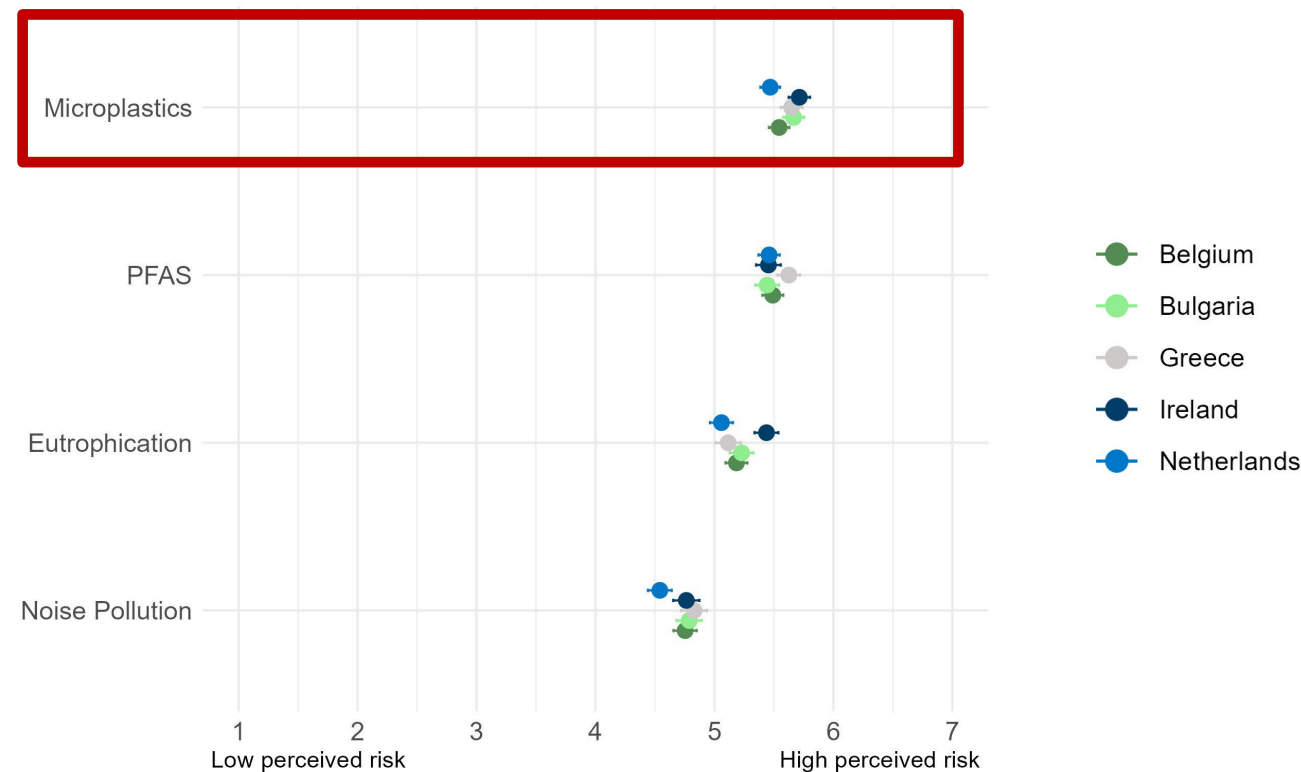
Risk perception of microplastics (overall)



Have you ever heard of...?



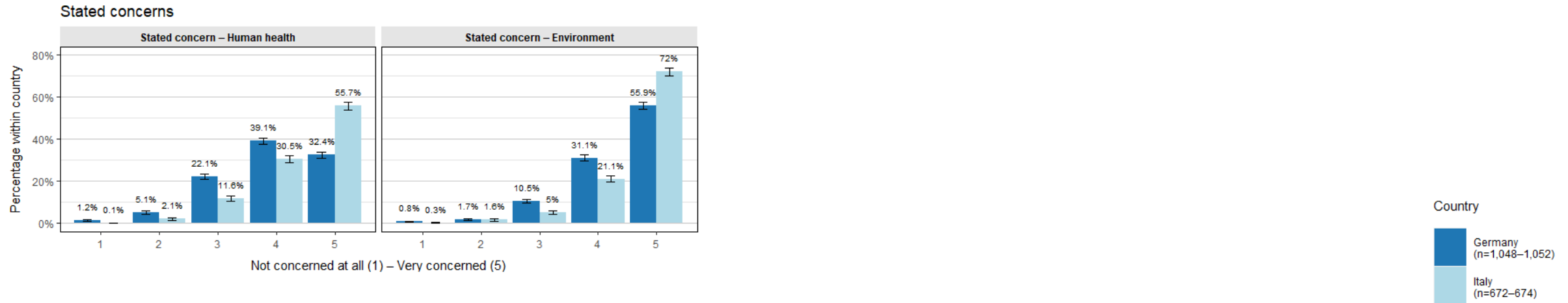
Risk perception index



Total N = 4886, quasi-representative samples; Vaupotic et al., SOS-ZeroPOL2030 Report 2024

Microplastic concern *health vs. environment*

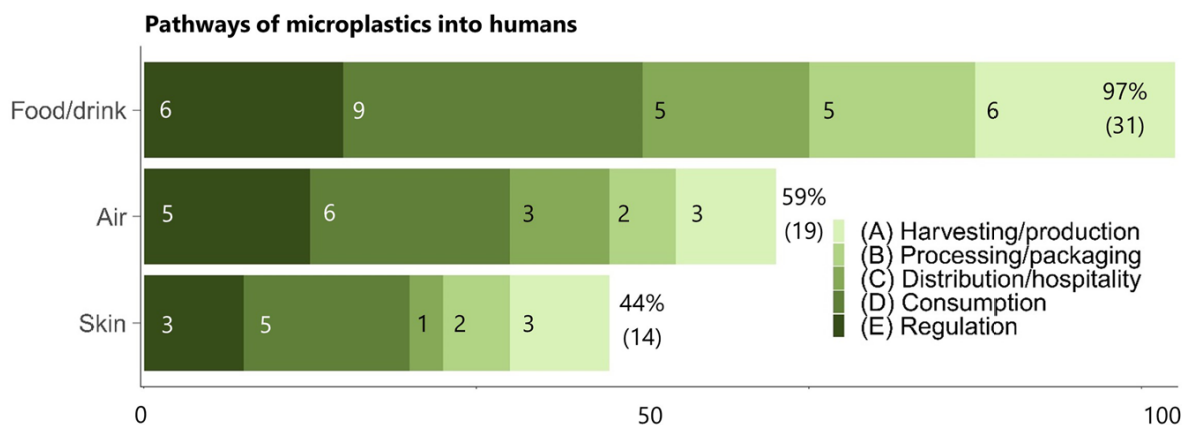
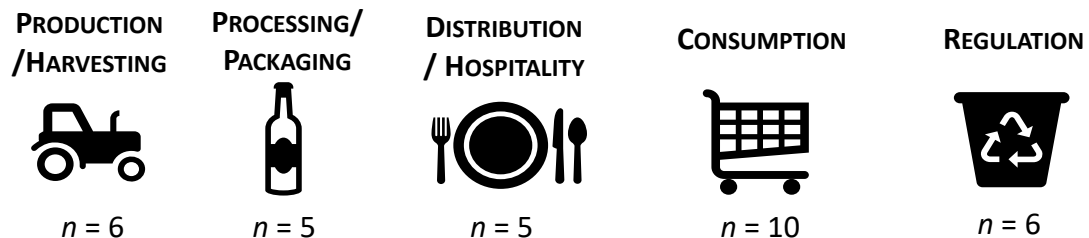
Different types of concerns



Note. Percentages of responses for the two stated concerns (effects for human health, environment) and three everyday relevance variables (thinking about effects for human health, environment, and talking about topic) are shown for German and Italian participants. Error bars show standard errors (SE).

Perceived MP pathways to humans

Qualitative study using picture-sorting and interviews
32 participants across the food & drink value chain in Austria



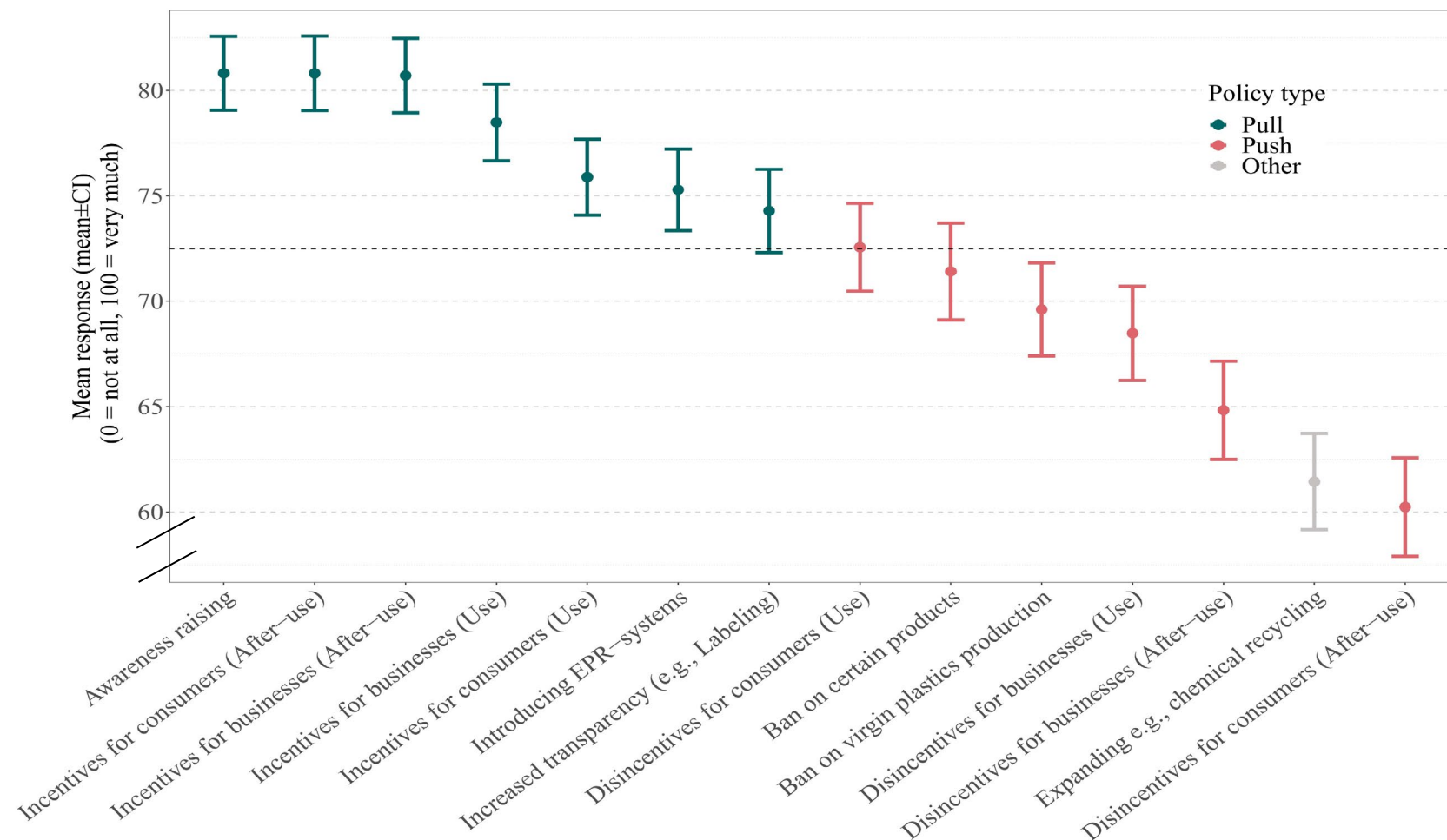
Frequency distributions to illustrate a) the main types of MP pathways into human body mentioned and b) feelings about MP in food and drink, by participant group

Note. Percentages refer to the full sample ($N = 32$) and frequencies of mentions are not adjusted by group size. Note that the consumption group was twice the size of most other groups.

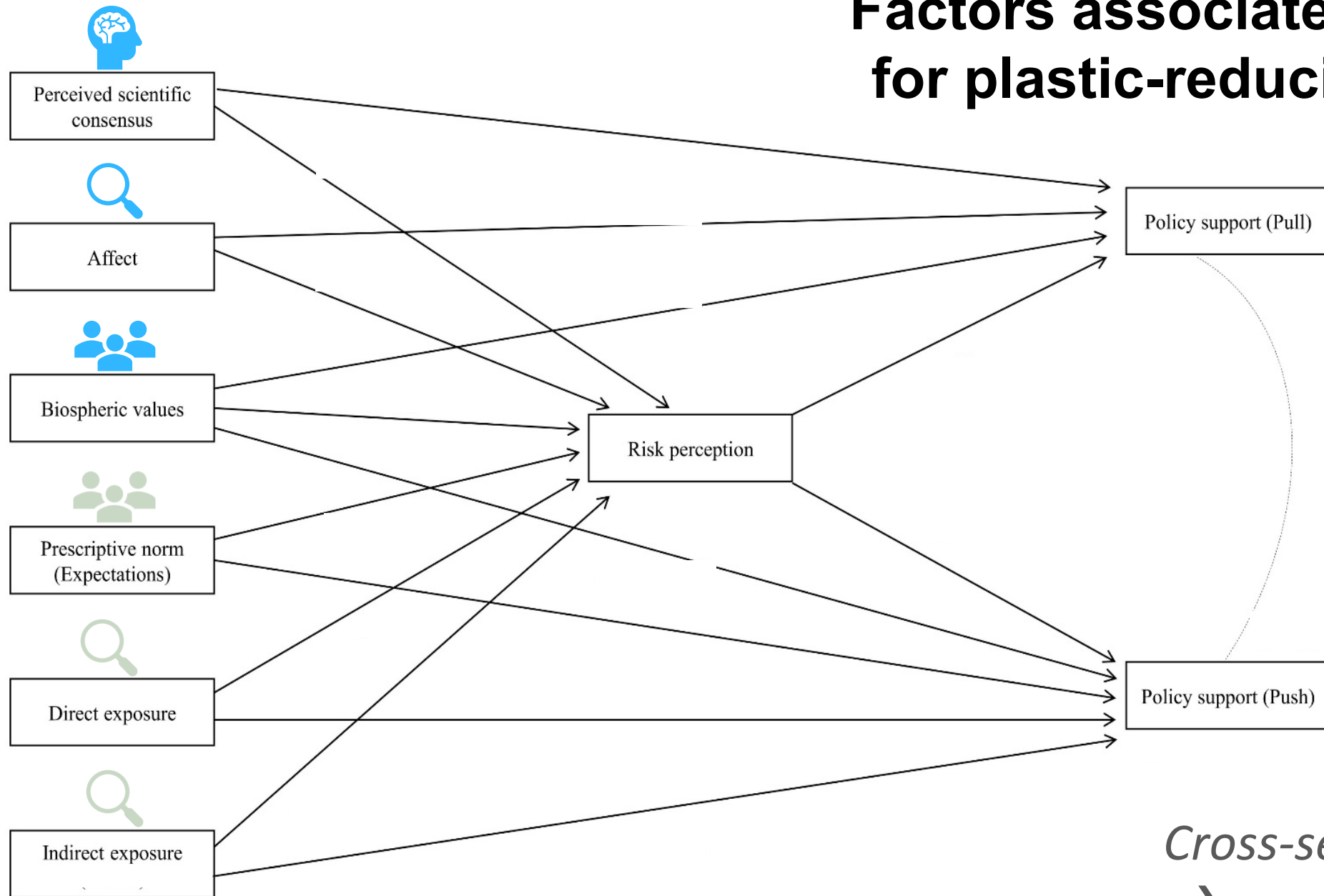
Support for plastic-reducing measures

Quantitative online survey via panel provider

- $N = 741$ Austrians > 18 yrs;
- Aware of microplastics (93%);
- Quota sample for age, gender and region;
- 42.6 % women;
- M age = 45.22 ($SD = 14.06$)



Factors associated with support for plastic-reducing measures



Exploratory path model showing all direct and indirect paths. Indirect paths in parentheses.

(Predictive factors included if sig for RP and at least 1 PS measure)

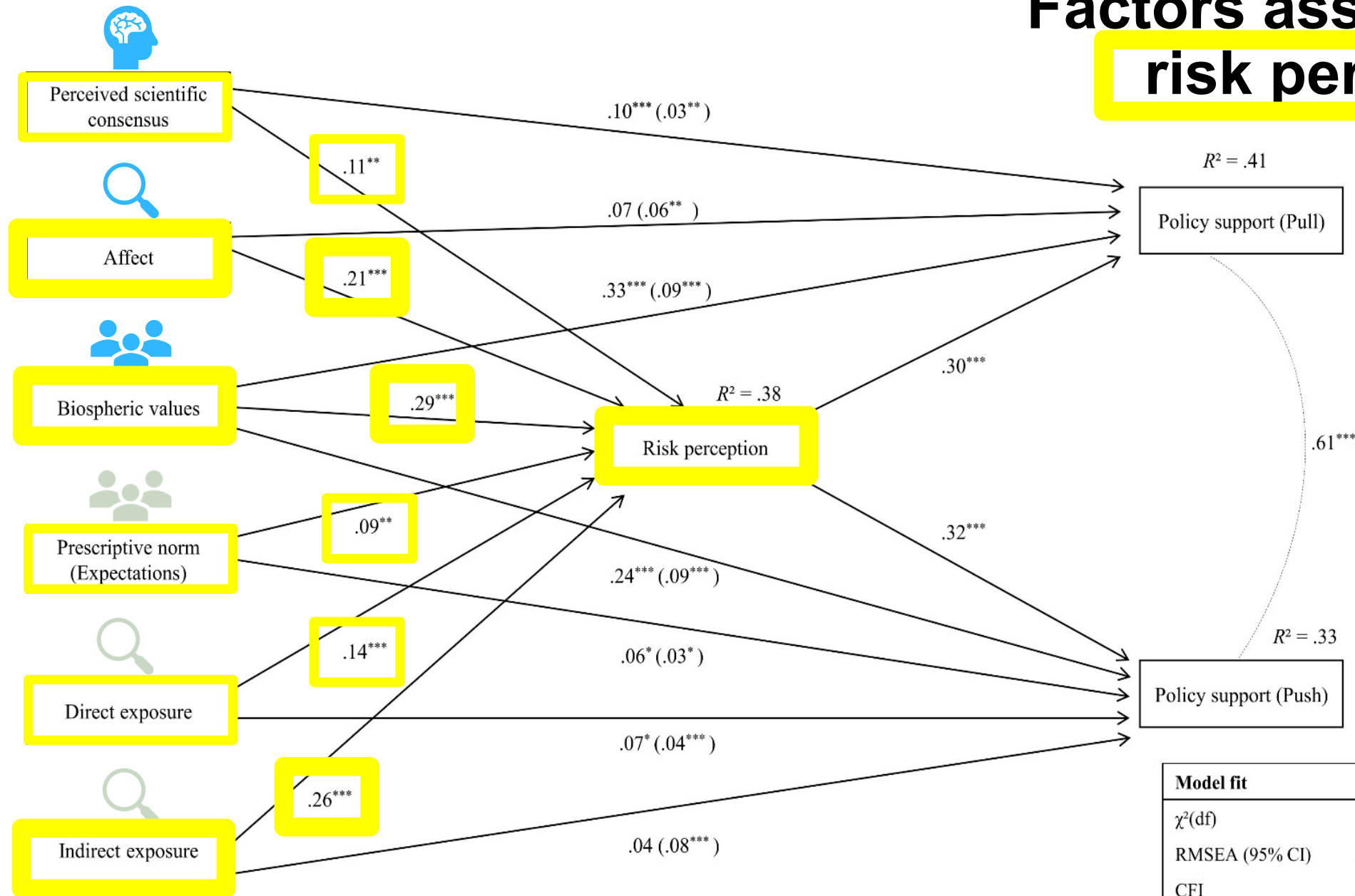
Standardised regression coefficients are shown for each path, * $p < .05$. ** $p < .01$. *** $p < .001$

Cross-sectional
→ *no causality*

Fian, L. et al. (2025). Microplastics in food and drink: Predictors of public risk perceptions and support for plastic-reducing policies based on a climate change framework. *Journal of Environmental Psychology*



Factors associated with risk perception

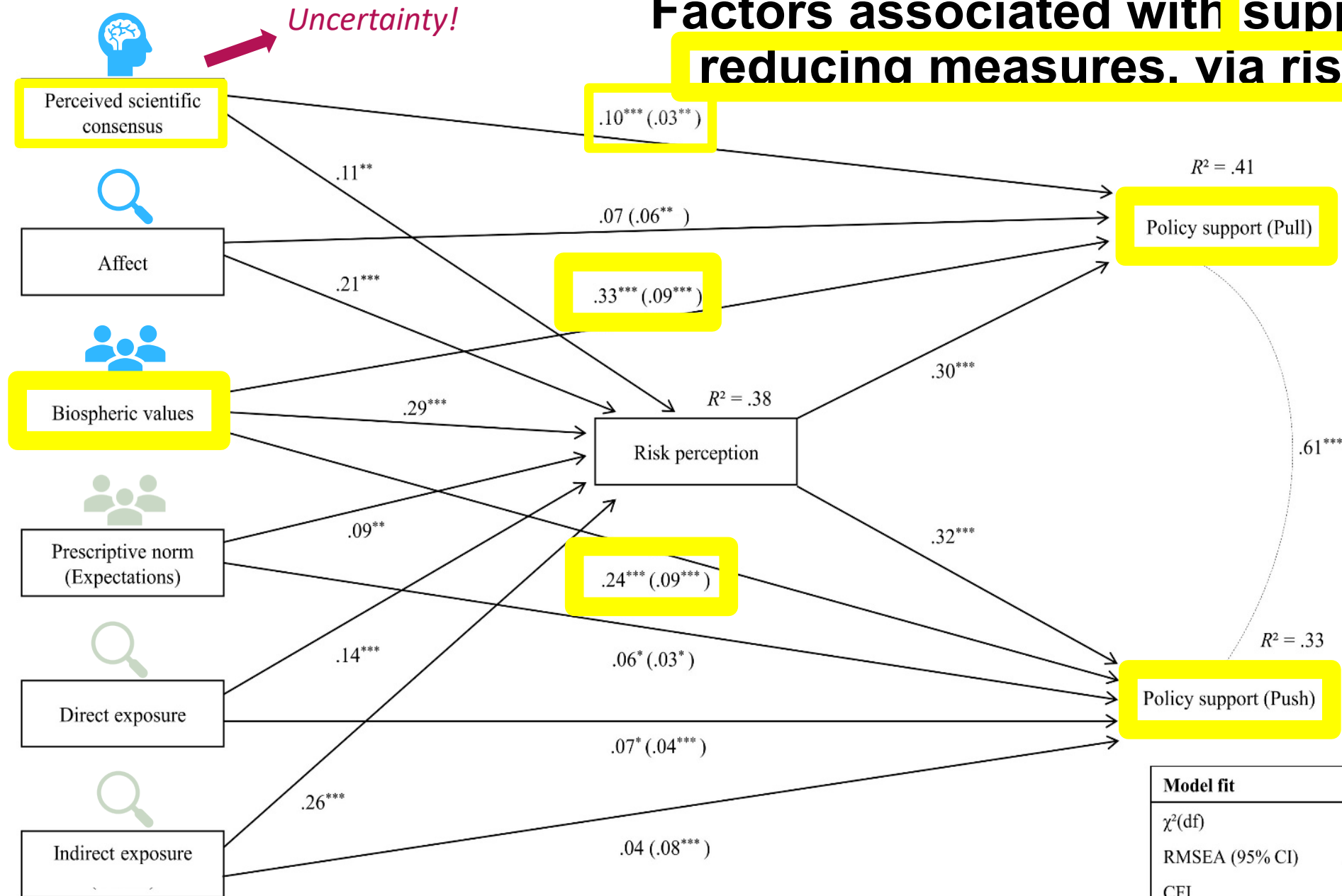


Exploratory path model showing all direct and indirect paths. Indirect paths in parentheses.

(Predictive factors included if sig for RP and at least 1 PS measure)

Standardised regression coefficients (β) are shown for each path, * $p < .05$. ** $p < .01$. *** $p < .001$

Factors associated with support for plastic-reducing measures. via risk perception



Exploratory path model showing all direct and indirect paths. Indirect paths in parentheses.

(Predictive factors included if sig for RP and at least 1 PS measure)

Standardised regression coefficients (β) are shown for each path, * $p < .05$. ** $p < .01$. *** $p < .001$

How useful can labelling be?

- People like it
- Freedom of choice
- Mandatory / voluntary?
- For marketing purposes?
- Labelling vs. regulation??



Key messages

- Danger is real, but risk is socially constructed (Slovic, 1999)
- People are concerned about microplastics in general (~~denial?~~)
- They have ideas about links between microplastics and human health (emerging)
- We can identify important factors associated with risk perception and policy support
- People's decisions and behaviours (individual, collective) play a key role in the plastic system
- Risk to success of measures (bans, dis/incentives, regulations) if human concern and behaviour is poorly understood