



# **Rethinking the Gender Gap: Multidimensional Measures of Gender and Climate Change Concern in Europe**

Marie-Fleur Philipp & Pia Schober

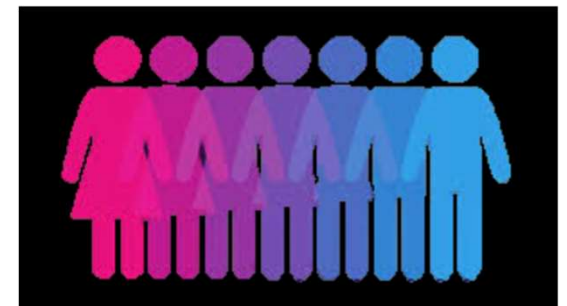
---

**ESS-SHARE-GGP User Meeting,  
Vienna 08 May 2026**



## Background

- Women are more concerned about the environment than men  
(Franzen & Bahr 2024; Knight & Givens 2021; Kvaloy et al. 2012; Poortinga et al. 2019)
- Assumed theoretical mechanisms: **gender socialization & gendered social roles**
- Limitation: empirically often focus on **binary gender category** differences and **homemaker status**
- **Illiberal backlash** against gender equality and pro-environmental policies





---

## Previous research

- Strapko et al. 2016 for US & Echavarren 2023 for 45 countries
    - Women were more concerned
    - Weekly working hours, homemaker status and parenthood status unrelated to environmental concern
    - Ethic of care: positively associated with concern
    - Gender traditionalism: negatively associated with concern
    - Macro level gender inequality: women more concerned in more equal contexts (with less traditional socialization)
- No support for social roles thesis
- Value orientations and gender attitudes matter
- Context-specific gender differences

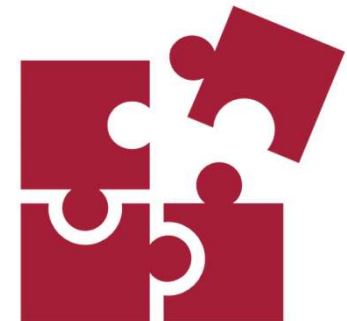


---

## Contributions

This study contributes to the literature by...

1. ...simultaneously investigating how **multiple dimensions of gender** relate to environmental concern
2. ...using **gradational measures** of gender identification
3. ...exploring **regional variation** across regional gender regimes





# Theoretical framework: Gender as a social structure (Risman 2018)

## Gendered self-concepts

- Constructed in day-to-day practices with reference to masculinity and femininity norms
- Femininity associated with nurturance, care, risk aversion and environmentally friendly behaviours  
(Avery et al. 2025; Bloodhart & Swim 2020; Brough et al. 2016; Dzialo 2017; Hankins et al. 2025)

**H1:** Individuals with **more feminine self-concepts** (gender category, self-perceived conformity with gender norms and gendered personality traits) exhibit **greater climate change concern**.

## Values

- Shaped through interactional experiences and gender culture → gender differences
- Self-transcendence: welfare of others & nature; self-enhancement: profit & self-interest

**H2:** Individuals with **stronger self-transcendence values** rel. to self-enhancement values exhibit **greater climate change concern**.



## Theoretical framework: Gender as a social structure (Risman 2018)

### Gender ideologies (Davis & Greenstein 2009)

- Support for traditionally gendered roles: emphasis on care orientation of women and profit-orientation of men → greater concern for women but lower for men
- **Ecofeminism** (Mies & Shiva 1993): opposition to exploitation of women and nature by the capitalist patriarchal world system

**H3:** Individuals with **more egalitarian** gender ideologies are **more environmentally concerned**.

### Socialisation

- Shapes self-concept, values and gender ideologies (Bussey & Bandura 1999)

**H4:** Men who experienced a **less traditional gender socialisation** in terms of maternal employment are **more concerned** about the environment.



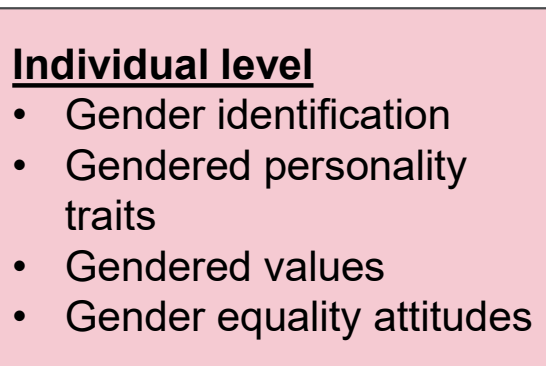
## Theoretical framework: Gender as a social structure (Risman 2018)

- Gender norms and understandings of femininity and masculinity **vary across contexts** along with policies and other institutions (Connell & Messerschmidt 2005; Walby 2020)
- **Socio-cultural hindrance hypothesis** (Chan et al. 2019):
  - Women can develop and express a heightened concern for the environment only in contexts where autonomous self-expression is possible

**H5:** Individual-level gender aspects are **more strongly associated** with climate change concern **in more egalitarian contexts**.

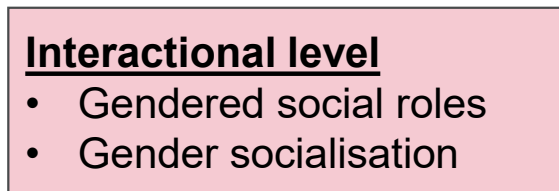


## Theoretical framework: Gender structure (Risman 2018)

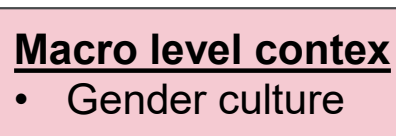


### Stronger environmental concern if

- H1: less polarized gender identifications (men only!)
- H2: more compassionate and sensitive personality
- H3: less risk-taking and leadership-oriented personality
- H4: stronger self-transcendence (vs. self-enhancement) values
- H5: more egalitarian attitudes



- H6: less traditional gender socialization (highly educated parents, working mother)



# Data & Method



---

## Data and method

- European Social Survey 11<sup>th</sup> Round, 2023
- 22 countries, 175 NUTS2 regions
  - Sample definition: focus on Europe and regional environmental indicators available  
→ excluding Israel, GB, Iceland, Montenegro, Russia and Switzerland
- N = 29,553 individuals
- Nationally representative samples
- Analysis weights
  
- Multilevel linear regression models with individuals clustered in regions
- Random-intercept models and random-slope models with cross-level interactions



---

## Dependent variables

- **Climate change attribution**

Do you think that climate change is caused by natural processes, human activity, or both?

- 1"entirely by natural processes" – 5"entirely by human activity"

- **Climate change worry**

How worried are you about climate change?

- 1"not at all worried" – 5"extremely worried"

- **Perceived responsibility**

To what extent do you feel a personal responsibility to try to reduce climate change?

- 0"not at all"-10"a great deal"

→ All z-standardised



---

## Independent variables – individual level

- **Gender category** (reported by respondent): man, woman
- **Self-perceived gender conformity**
  - Based on self-rated masculinity (0-6) & self-rated femininity (0-6)
  - For women: Masculinity – Femininity, For men: Femininity – Masculinity
  - Categories:
    1. Nonconforming: sex  $\neq$  gender; females who feel equally or more masculine than feminine; males who feel equally or more feminine than masculine
    2. Less conforming women: below-median gender conformity
    3. Less conforming men: below-median gender conformity
    4. More conforming women: (above-)median gender conformity
    5. More conforming men: (above-)median gender conformity
- Stereotypically **masculine personality traits**: risk-taking, leadership-oriented (alpha = 0.66)
- Stereotypically **feminine personality traits**: sensitive, compassionate (alpha = 0.79)



---

## Independent variables – individual level

- **Self-transcendence & self-enhancement values**
  - Self-transcendence: mean of universalism and benevolence scores
  - Self-enhancement: mean of achievement and power scores
  - Relative importance: self-transcendence score – self-enhancement score
- **Gender equality attitudes** (factor, alpha = .83)
  - Bad or good if equal numbers of men and women i) in paid work, ii) in political leadership positions, iii) in higher management positions; iv) bad or good if women and men receive equal pay for equal work
- **Mother's employment status at age 14** (higher occ. position, lower occ. position, did not work, died/not present)



---

## Independent variables – individual level

- **Care hours** per week
  - less than 1 hour, 1-10 hours, 11-20 hours, 21-30 hours, 31+ hours → middle value of each category to create metric variable; grand-mean centred
- **Employment hours** per week (set to 0 if not in paid work)
  - Grand-mean centred
- **Supervisory position** (0/1)

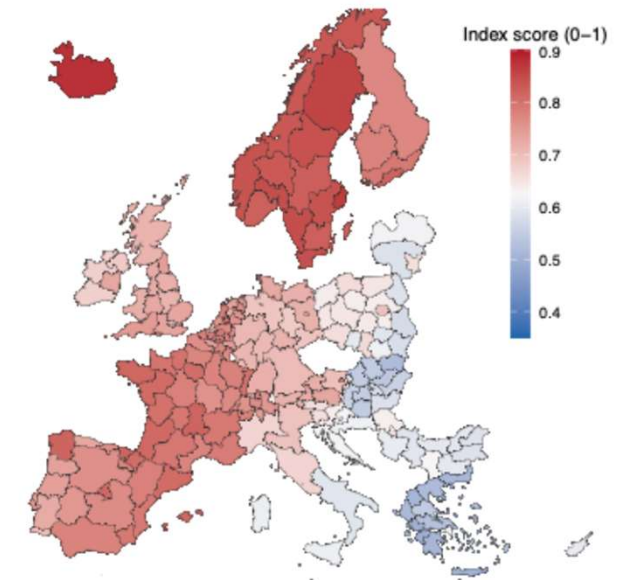
Controls: age, tertiary degree, migration background, partnership status, parenthood status, place of living, political left-right placement



## Independent variables – regional level

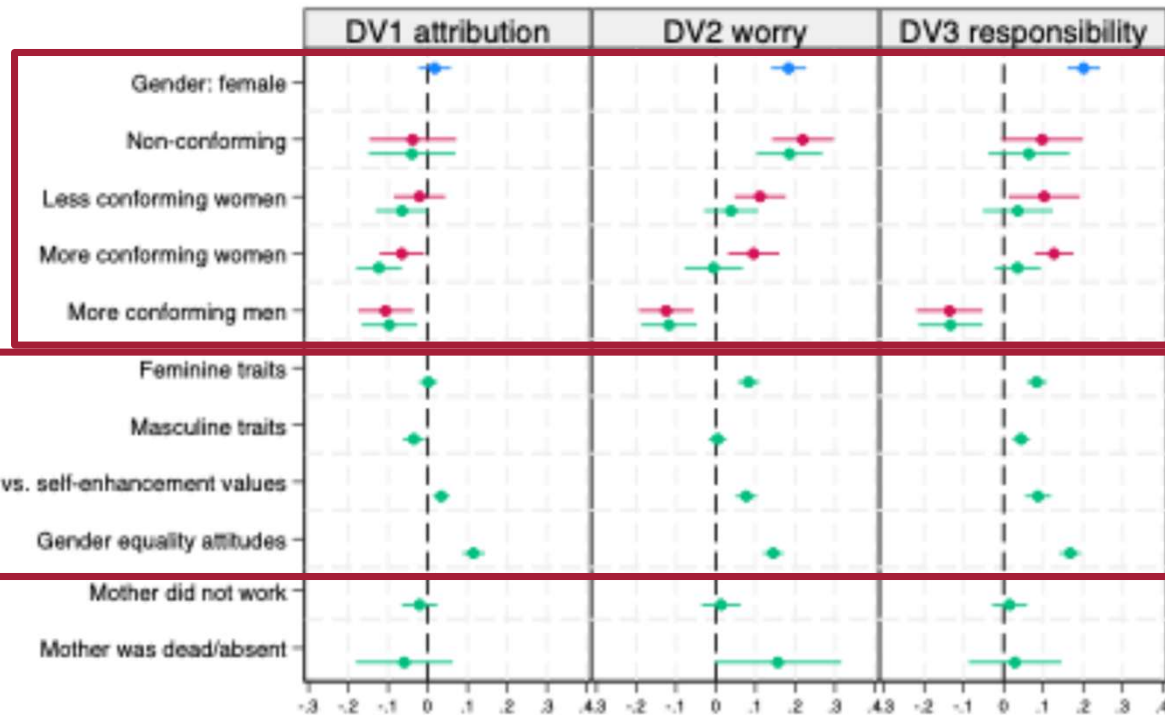
### Regional gender (in)equality index:

- Female employment rate
  - Women's share in politics
  - Normative support for gender equality in the public sphere (aggregated from ESS)
  - Heteronormativity (aggregated from ESS)
- Normalised (0-1; 1=total gender equality)  
→ Average of four indicators



Controls: GDP in 1,000€ per capita, unemployment rate, greenhouse gas emissions in tons per capita, cooling degree days

# Results



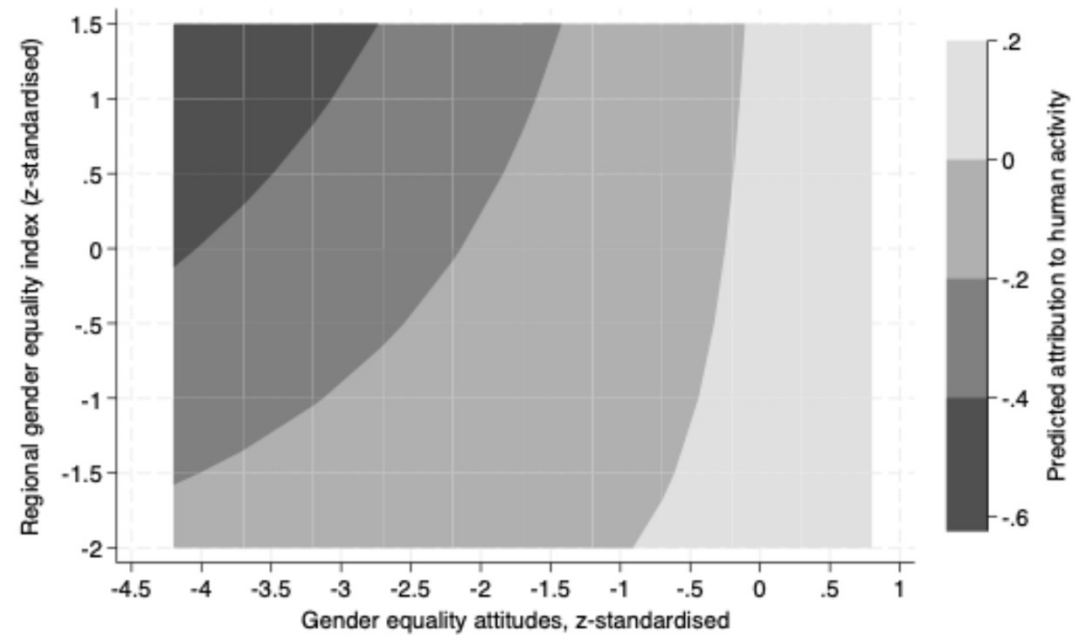
- DV1: no gender gap, more conforming men and women less concerned
- DV2 and DV3: women more, more conforming men less concerned
- More feminine traits, self-transcendence values and support for gender equality go along with greater concern
- Gender equality attitudes = most important predictor

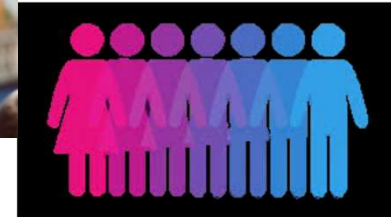
M1: only gender category  
M2: nuanced gender category (conformity)  
M3: + multiple dimensions



## Regional variation

- Feminine personality traits, self-transcendence values and gender ideologies mostly were more strongly associated with concern in more egalitarian regions
- The association with self-perceived gender conformity did not vary across regions





## Conclusion

- Important to consider **nuances within gender categories**:
  - No gender category, but conformity gap regarding climate change attribution
  - Women more worried and perceive a greater responsibility to reduce climate change than (more conforming) men
- Theoretical explanations should focus on **implications of gendered social roles for values/beliefs**
  - Gendered personality traits, values and feminist attitudes contribute to gender gap in climate change concern
- Importance of **freedom of gender expression**: feminine personality traits, values and gender equality attitudes related more strongly to climate change concern in **more egalitarian regions**
- Longitudinal research needed



**Thank you!**

**Our contacts**

[marie-fleur.philipp@uni-tuebingen.de](mailto:marie-fleur.philipp@uni-tuebingen.de)

[pia.schober@uni-tuebingen.de](mailto:pia.schober@uni-tuebingen.de)



# Appendix

## Summary

| Greater concern if  | Climate change attribution                              | Climate change worry                                   | Perceived responsibility   |
|---|---|--|--|
| H1: more feminine self-concept                                  | ~ Gender category<br>- Conformity<br>+ Masculine traits | + Gender category<br>+ Conformity<br>+ Feminine traits | + Gender category<br>+ Conformity<br>+ Feminine traits<br>- Masculine traits           |
| H2: stronger self-transcendence rel. to self-enhancement values | +   | +  | +  |
| H3: more egalitarian gender ideologies                          | +   | +  | +  |
| H4: less traditional gender socialisation (men)                 | ~   | ~  | ~  |
| H5: Stronger association in more egalitarian regions            | + gender ideologies<br>+ socialisation                  | + feminine traits<br>+ values<br>+ gender ideologies   | + feminine traits<br>+ values<br>+ socialisation<br>+ care hours<br>- masculine traits |

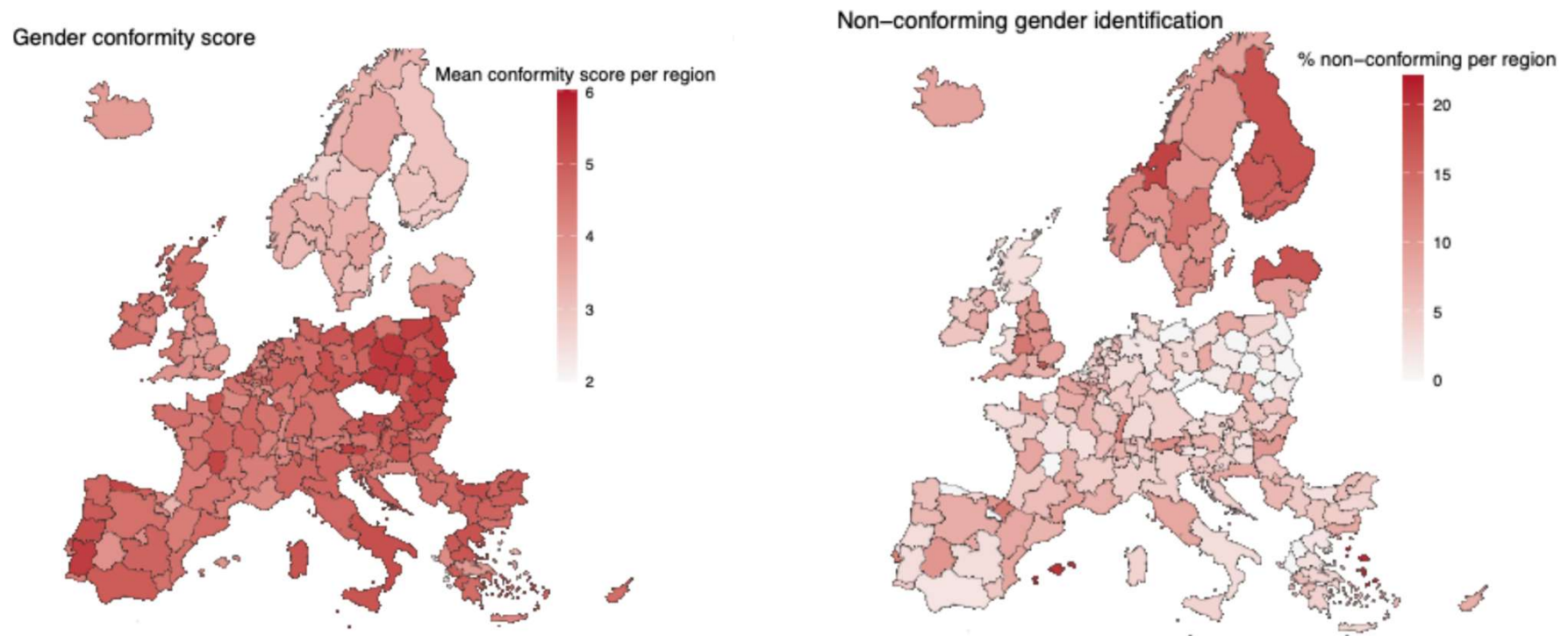


## Sample definition

- Israel excluded to focus on Europe
- 10,840 respondents excluded due to missing values on individual-level dependent, independent and control variables
  - Only one person identifying as “other” remained, had to be excluded because not possible to analyse separately
- 8 respondents excluded with missing information on unemployment in one Finnish region
- Respondents in Great Britain, Iceland, Montenegro, Russia and Switzerland excluded because of missing regional-level environmental data
- 29,553 respondents in 175 regions in 22 countries left
  - Austria, Belgium, Bulgaria, Croatia, Cyprus, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, the Netherlands, Norway, Poland, Portugal, Serbia, Slovak Republic, Slovenia, Spain, Sweden



## Figure 1. Mean gender conformity score and shares of non-conformity at the regional level





**Table A1. Empty multilevel linear regression models of climate change concern (null models)<sup>1</sup>**

|                      | <b>DV1 attribution of climate change to human activity</b> | <b>DV2 worry about climate change</b> | <b>DV3 perceived responsibility to reduce climate change</b> |
|----------------------|--|---------------------------------------|--|
| Constant             | 0.014<br>(0.020)   | -0.006<br>(0.020)                     | 0.073**<br>(0.024)   |
| Var (constant)       | 0.057<br>(0.008)   | 0.059<br>(0.008)                      | 0.089<br>(0.012)   |
| Log pseudolikelihood | -38398.816   | -38822.439                            | -37424.822   |
| ICC                  | 0.059  | 0.059                                 | 0.094  |
| DEFF                 | 10.946127  | 10.897417                             | 16.927671  |
| N respondents        | 29,553   | 29,553                                | 29,553   |
| N regions            | 175  | 175                                   | 175  |

<sup>1</sup> Note: Robust standard errors in parentheses. \*\*\* p<0.001, \*\* p<0.01, \* p<0.05

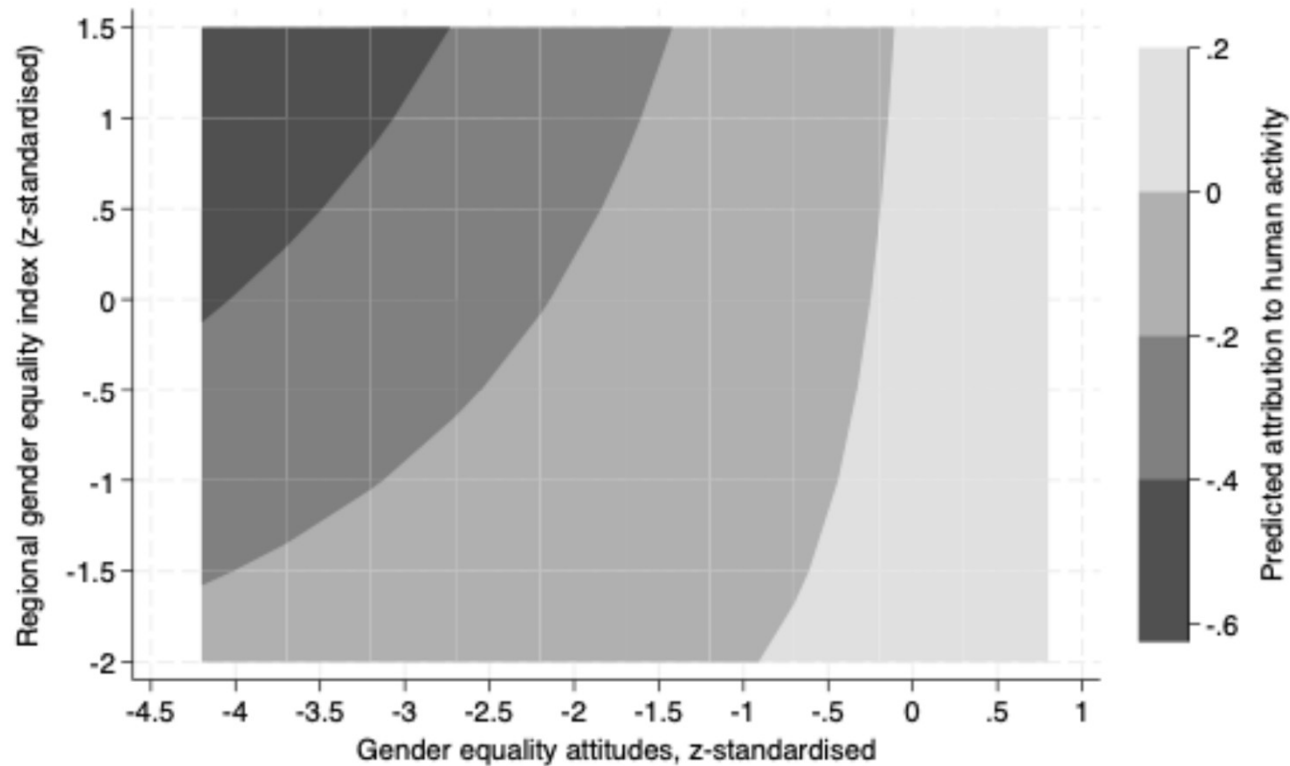


**Table A2. Pairwise correlations between the continuous dimensions of gender**

|                                | Gender conformity score | Feminine traits | Masculine traits | Values | Gender equality attitudes | Weekly working hours | Weekly care hours | Regional gender equality index |
|--------------------------------|-------------------------|-----------------|------------------|--------|---------------------------|----------------------|-------------------|--------------------------------|
| Gender conformity score        | 1                       |                 |                  |        |                           |                      |                   |                                |
| Feminine traits                | 0.0123                  | 1               |                  |        |                           |                      |                   |                                |
| Masculine traits               | -0.0268                 | 0.1104          | 1                |        |                           |                      |                   |                                |
| Values                         | -0.0841                 | 0.3092          | -0.1955          | 1      |                           |                      |                   |                                |
| Gender equality attitudes      | -0.0298                 | 0.2638          | 0.0293           | 0.2193 | 1                         |                      |                   |                                |
| Weekly working hours           | 0.0195                  | 0.0116          | 0.0587           | 0.0326 | 0.0032                    | 1                    |                   |                                |
| Weekly care hours              | -0.0370                 | 0.1033          | -0.0107          | 0.0808 | 0.0309                    | 0.0082               | 1                 |                                |
| Regional gender equality index | -0.1757                 | 0.1497          | 0.0163           | 0.3511 | 0.3315                    | 0.0142               | 0.0375            | 1                              |



**Fig. 2 Predicted attribution of climate change to human activity at different levels of individual gender equality attitudes and regional gender equality**





**Fig. 3 Predicted perceived responsibility to reduce climate change at different levels of individual feminine personality traits and regional gender equality**

