**Supplementary material**

**The active, the sympathetic, and the reluctant: Political action and eco-social attitudes among Swedish residents**

By Kajsa Emilsson, Roger Hildingsson and Martin Fritz

**Operationalisation of the eco-social attitude variable**

The eco-social attitude variable was operationalised through 35 items that in various ways represented a social welfare agenda (17 items) and an environmental agenda (18 items), respectively. The social welfare items captured the respondents’ attitudes regarding *policy instruments* and more specifically the kinds of policies that have been suggested by sustainable welfare scholars, i.e., basic income, working time reduction, maximum income cap, and a wealth tax (see e.g., Büchs & Koch, 2017; Gough, 2017; Khan *et al.*, 2023), the *role of the government* in relation to the elderly, the unemployed, and working parents, the *handling of social risks* such as illness and unemployment through social benefits and service, and *social justice*. The environmental items capture the respondents’ attitudes regarding *environmental policies*, *energy preferences* and to what extent they express a willingness to use energy generated from renewable energy sources such as wind power and solar energy, and *general environmental concerns* through the so-called New Ecological Paradigm (Dunlap et al., 2000; see further Emilsson, 2023, for a more thorough description of the different items). The exact wording of the 35 survey items and the response options are presented in the table below.

|  |  |  |
| --- | --- | --- |
| **Item battery** | **Survey question/statement** | **Response options** |
| Welfare policy instruments | *What do you think of the following welfare policy proposals?* [Reintroduce a wealth tax, which means that assets (e.g., bank accounts, property, shares, etc.) would be taxed above a certain threshold; Introduce a cap on income from employment, where gross wages of over, for example, 1,500,000 SEK (equals about 150,000 EUR) would be taxed at 100%; Introduce a so-called basic income for all citizens, regardless if one is working or not, and without requirement to work in return; Introduce a working time reduction with two hours per day, which means that the total working day would be six hours instead of eight] | Very good: Fairly good; Neither good nor bad; Quite bad; Very bad; Do not know |
| Role of government | *People have different views on what the responsibilities of governments should or should not be. Indicate on a score of 0-10 how much responsibility you think governments should have when it comes to*: [Ensuring a reasonable standard of living for the old; Ensuring a reasonable standard of living for the unemployed; Ensuring sufficient child care services for working parents] | Should not be governments’ responsibility at all = 0; 1; 2; [...]; 8; 9; Should be entirely governments’ responsibility = 10 |
| Social benefits | *To what extent do you agree or disagree that social benefits and services (e.g., health care, pensions, and social security) in Sweden*… [place too great a strain on the economy; prevent widespread poverty; lead to a more equal society; cost businesses too much in taxes and charges; make people lazy; make people less willing to care for one another] | Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree; Do not know; Do not want to answer |
| Social justice | *To what extent do you agree or disagree with each of the following statements?* [For a society to be fair, differences in people’s standard of living should be small; Large differences in people’s incomes are acceptable to properly reward differences in talents and efforts; The government should take measures to reduce differences in income levels; Government should redistribute income from the better off to those who are less well-off] | Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree; Do not know; Do not want to answer |
| Environmental policy instruments | *What do you think of the following environmental policy proposals to reduce climate change?* [Increase taxes on fossil fuels; Using public money to subsidise renewable energy; A law banning the sale of the least energy efficient household appliances; A tax-financed expansion of public transportation; A limitation of car traffic in densely populated areas; A tax increase on household electricity; A subsidy on green electricity; A tax on meat; A state sponsored information campaign to reduce meat consumption; Increased taxes on environmentally harmful activities and goods and lower taxes on environmentally friendly activities and goods] | Very good: Fairly good; Neither good nor bad; Quite bad; Very bad; Do not know; Do not want to answer  |
| Energy preferences | *How much of the electricity used in Sweden should be generated from each energy source?* [Solar power; Wind power; Biomass energy generated from materials like wood, plants, and animal excrement] | A very large amount; A large amount; A medium amount; A small amount; None at all; Do not know; Do not want to answer |
| New Ecological Paradigm (NEP) | *To what extent do you agree or disagree with each of the following statements?* [The so-called “ecological crisis” facing humankind has been greatly exaggerated; If things continue on their present course, we will soon experience a major ecological catastrophe; Nature is sensitive and its balance can be easily disturbed; The earth is like a spaceship with limited room and resources; Humans are severely abusing the environment]  | Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree |

Through principal component analysis (PCA), the 35 observable items were transformed into a smaller set of components, which in turn then represent unobservable latent constructs of welfare and environmental attitudes. Two PCAs were conducted, one on the 17 social welfare (KMO value = 0.895) items and the other on the 18 environmental items (KMO value 0.915), which yielded one latent factor or variable each. When combined, these two latent factors can be understood as representing unobservable latent constructs of eco-social attitude patterns (see Fritz and Koch, 2019; see also Otto and Gugushvili, 2020, for similar operationalisation strategies). The communalities were mostly around 0.5–0.7, indicating that around 50–70% of the variance of each single item was explained by the components. The first components in the two PCAs, generated with varimax rotation and an Eigenvalue greater than 1, were used in the subsequent analyses. These two components explained around 36–37% of the variance in welfare and environmental attitudes, respectively.

In a second step, the two components were dichotomised. The components, which can be seen as values of a respondent’s relative position or standing on a latent dimension, are already – as a result of the PCA – standardized with a mean of 0 and a standard deviation of 1 (Hair et al., 2019, p. 123), and thus the cut-off point was set to 0. Hence, components <0 were coded as ‘below average support’, while components >0 were coded as ‘above average support’. Four attitude patterns were generated based on the dichotomised components: ‘mutual support’ (above average welfare and environmental support), ‘welfare support’ (above average welfare support, below average environmental support), ‘environmental support’ (above average environmental support, below average welfare support), and ‘less/non-support’ (below average welfare and environmental support). This way of dichotomising the components can be understood as a relative approach where the cut-off point constitutes the distributional mean, which is in contrast to a pre-given or set theoretically neutral mid-point. Because the components might consist of items with skewed distribution, this could entail that individuals in their overall response pattern could have expressed support for various welfare or environmental items but still they were below the average (considering that other respondents expressed even higher support). This relative approach entails that if some individuals in a society express strong support for the environment, for instance, then even if other individuals express a slight degree of support, then that slight agreement is still different and less than the fairly strong support.

Furthermore, in order to ensure that the cut-off point was valid robustness tests were performed (see Emilsson, 2023, for a description). These robustness tests indicate the relational mean-based approach provided the best solution for the creation of the eco-social attitude variable. In addition, composite measures, as in the case of PCA, reduce measurement errors in the sense that if some items induce deviant answering behaviour, factor scores even this out compared to simple means that will be biased (Hair et al., 2019, p. 160).

**References**

**Büchs Milena and Max Koch**. *Postgrowth and wellbeing: Challenges to sustainable welfare*, Basingstoke: Palgrave Macmillan, 2017.

**Dunlap, Riley E., Kent D. Van Liere, Angela G. Mertig and Robert Emmet Jones**. “Measuring endorsement of the new ecological paradigm: A revised NEP scale.”  *Journal of Social Issues* **56.**3 (2000): 425–442. <https://doi.org/10.1111/0022-4537.00176>

**Emilsson, Kajsa**. *Support for sustainable welfare? A study of public attitudes related to an eco-social agenda among Swedish residents*. Doctoral thesis, School of Social Work, Lund University, 2023.

**Fritz, Martin and Max Koch**. “Public support for sustainable welfare compared: Links between attitudes towards climate and welfare policies.” *Sustainability*, **11** (2019), 4146. <https://doi.org/10.3390/su11154146>

**Gough, Ian**. *Heat, greed and human need: Climate change, capitalism and sustainable wellbeing*. Cheltenham: Edward Elgar Publishing, 2017.

**Hair, Jospeh F. Jr., William C. Black, Barry J. Babin and Rolph E. Anderson**. *Multivariate data analysis*. Upper Saddle River: Pearson, 2019.

**Khan, Jamil, Kajsa Emilsson, Martin Fritz, Max Koch, Roger Hildingsson, and Håkan Johansson**. ”Ecological ceiling and social floor: Public support for eco-social policies in Sweden.” *Sustainability Science*, **18** (2023): 1519–1532. <https://doi.org/10.1007/s11625-022-01221-z>

**Otto, Adeline and Dimitri Gugushvili**. “Eco-social divides in Europe: Public attitudes towards welfare and climate change policies.” *Sustainability,* **12**.1 (2020), 404. <https://doi.org/10.3390/su12010404>

**Tables A–H and Figures A–B**

**Table A**: Participation in political activities (in percent, n = 1529, weighted data in parentheses)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Have done | Would do | Would not do | Refusal/Missing |
| *Institutionalised forms of political action* |  |  |  |  |
| Contacted a politician/official | 6.2 (6.1) | 36.7 (34.4) | 40.9 (44.0) | 16.2 (15.5) |
| Donated money | 21.9 (19.1) | 25.7 (25.1) | 36.0 (39.9) | 16.4 (15.9) |
| *Non-institutionalised forms of political action* |
| Wrote a letter to the editor | 3.5 (3.3) | 31.1 (30.5) | 49.5 (51.6) | 15.9 (14.7) |
| Joined demonstration | 9.5 (5.7) | 34.5 (30.9) | 42.2 (50.2) | 13.8 (13.1) |
| Joined environmental march | 6.9 (3.7) | 37.4 (32.1) | 41.1 (49.1) | 14.5 (15.1) |
| Joined global climate strike | 5.6 (3.2) | 33.6 (29.0) | 45.1 (52.2) | 15.8 (15.6) |
| Joined May Day march | 6.4 (3.5) | 24.1 (21.0) | 54.3 (61.1) | 15.1 (14.5) |
| Joined workers' strike | 0.9 (0.4) | 29.8 (26.2) | 51.3 (57.3) | 17.9 (16.0) |
| Non-violent protest | 1.0 (0.6) | 20.3 (15.0) | 63.1 (69.6) | 15.5 (14.8) |
| Violent protest | 0.5 (0.1) | 3.1 (1.8) | 83.1 (85.5) | 13.3 (12.6) |
| *Lifestyle and consumerist politics* |  |  |  |  |
| Paid for environmental measure  | 14.2 (17.3) | 57.9 (55.9) | 12.6 (13.2) | 15.3 (13.7) |
| Reduced temperature at home | 32.0 (31.0) | 31.8 (33.1) | 24.7 (25.9) | 11.5 (10.0) |
| Stopped eating meat | 17.5 (13.6) | 28.1 (26.5) | 43.1 (50.8) | 11.4 (9.1) |
| Stopped flying  | 18.1 (20.9) | 25.6 (28.4) | 42.8 (39.3) | 13.5 (11.4) |
| Climate offsetting  | 19.9 (18.5) | 46.6 (46.5) | 15.1 (17.3) | 18.4 (17.7) |
| *Digital network participation* |  |  |  |  |
| Posted on social media | 19.8 (18.9) | 22.2 (21.4) | 42.2 (45.2) | 15.7 (14.4) |

**Table B**: Membership in organisations (in percent, n = 1529, weighted data in parentheses)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Passive member | Active member | Not a member | Refusal/Missing |
| Trade union | 41.1 (40.9) | 7.1 (7.4) | 35.5 (34.0) | 16.4 (17.7) |
|  | Passive and active members combined | Not a member | Refusal/Missing |
| Political party | 6.3 (6.0) | 74.9 (74.3) | 18.8 (19.8) |
| Environmental organisation | 11.3 (9.1) | 70.4 (71.0) | 18.4 (19.8) |
| Human or civil rights organisation | 11.6 (8.3) | 69.3 (71.3) | 19.1 (20.4) |

***Table C:*** *Typology of eco-social attitudes (in percent, n = 1529, weighted data in parentheses)*

|  |  |
| --- | --- |
|  | Percent |
| Synergy | 30.9 (26.7) |
| Green crowding out | 20.5 (16.7) |
| Red crowding out | 17.4 (20.7) |
| Rejection | 27.4 (33.7) |
| Missing | 3.8 (3.1) |

***Table D:*** *The contributions of the categories to the first two dimensions of the MCA (above average in* ***bold****)*

|  |  |  |
| --- | --- | --- |
|  | Dim 1 | Dim 2 |
| Paid for environmental measure\_have done | 0.25 | 0.26 |
| Paid for environmental measure \_would do | 0.05 | 0.19 |
| Paid for environmental measure \_would not do | 1.09 | 0.25 |
| Reduced temperature at home \_have done | 0.55 | 0.27 |
| Reduced temperature at home \_would do | 0.22 | 0.75 |
| Reduced temperature at home \_would not do | 1.84 | 0.12 |
| Stopped eating meat \_have done | 1.74 | 0.78 |
| Stopped eating meat \_would do | 1.11 | 1.42 |
| Stopped eating meat \_would not do | **2.60** | 0.18 |
| Stopped flying \_have done | 1.26 | 0.6 |
| Stopped flying \_would do | 0.81 | 0.42 |
| Stopped flying \_would not do | 1.72 | 0 |
| Climate offsetting \_have done | 1.37 | 0.58 |
| Climate offsetting \_would do | 0.01 | 0.64 |
| Climate offsetting \_would not do | 1.23 | 0.56 |
| Contacted a politician/official \_have done | 0.60 | **1.97** |
| Contacted a politician/official \_would do | **2.95** | 0.89 |
| Contacted a politician/official \_would not do | **3.36** | 0.14 |
| Donated money \_have done | **3.59** | 0.97 |
| Donated money \_would do | 0.66 | **2.13** |
| Donated money \_would not do | **4.02** | 0.18 |
| Wrote a letter to the editor \_have done | 0.37 | 0.93 |
| Wrote a letter to the editor \_would do | **3.04** | 0.32 |
| Wrote a letter to the editor \_would not do | **2.14** | 0.04 |
| Posted on social media \_have done | **2.76** | 1.07 |
| Posted on social media \_would do | 0.77 | 1.8 |
| Posted on social media \_would not do | **2.79** | 0.05 |
| Joined demonstration \_have done | **3.1** | **12.86** |
| Joined demonstration \_would do | **2.94** | **7.61** |
| Joined demonstration \_would not do | **5.19** | 0.72 |
| Joined environmental march \_have done | **3.14** | **14.59** |
| Joined environmental march \_would do | **3.36** | **6.96** |
| Joined environmental march \_would not do | **5.57** | 0.95 |
| Joined global climate strike \_have done | **2.71** | **13.23** |
| Joined global climate strike \_would do | **4.00** | **5.79** |
| Joined global climate strike \_would not do | **5.07** | 0.69 |
| Joined May Day march \_have done | **2.12** | **5.73** |
| Joined May Day march \_would do | **3.38** | **3.37** |
| Joined May Day march \_would not do | **2.80** | 0.20 |
| synergy | **2.52** | 0.01 |
| green crowding-out | 0.17 | 0.72 |
| red crowding-out | 0.66 | 0.09 |
| rejection | **2.18** | 0.14 |
| Member of political party\_yes | 0.72 | **2.26** |
| Member of political party\_no | 0.05 | 0.15 |
| Member of environmental organisation\_yes | **2.69** | **3.34** |
| Member of environmental organisation\_no | 0.36 | 0.45 |
| Member of human or civil organisation\_yes | **2.29** | 1.80 |
| Member of human or civil organisation\_no | 0.31 | 0.25 |
| Trade union\_passive member | 0.66 | 0.30 |
| Trade union\_active member | 0.08 | 0.04 |
| Trade union\_not a member | 1.03 | 0.27 |
| Average | 1.92 | 1.92 |

***Table E****: Participation of the three cluster in political activities (in percent)*

|  |  |  |  |
| --- | --- | --- | --- |
|  | reluctant | sympathetic | active |
|  | have done | would do | would not do | have done | would do | would not do | have done | would do | would not do |
| *Institutionalised forms of political action* |  |  |  |  |  |  |  |  |  |
| Contacted a politician/official | 4.3 | 24.1 | 71.5 | 7.7 | 65.8 | 26.5 | 23.3 | 62.5 | 14.2 |
| Donated money | 12.0 | 20.1 | 67.9 | 35.7 | 46.0 | 18.3 | 64.8 | 28.0 | 7.2 |
| *Non-institutionalised forms of political action* |  |  |  |  |  |  |  |  |  |
| Wrote a letter to the editor | 2.5 | 18.0 | 79.5 | 4.5 | 57.1 | 38.4 | 12.8 | 61.5 | 25.6 |
| Joined demonstration | 1.9 | 10.0 | 88.1 | 4.0 | 88.6 | 7.4 | 88.9 | 11.1 | 0.0 |
| Joined environmental march | 0.1 | 12.1 | 87.7 | 0.6 | 94.0 | 5.4 | 82.3 | 16.9 | 0.8 |
| Joined global climate strike | 0.1 | 7.2 | 92.6 | 1.0 | 87.5 | 11.5 | 66.1 | 30.6 | 3.3 |
| Joined May Day march | 0.9 | 6.4 | 92.8 | 6.6 | 58.7 | 34.6 | 48.4 | 33.9 | 17.7 |
| Joined workers' strike | 0.0 | 12.0 | 88.0 | 0.2 | 65.3 | 34.5 | 11.6 | 65.2 | 23.2 |
| Non-violent protest | 0.0 | 3.3 | 96.7 | 0.0 | 44.0 | 56.0 | 13.4 | 63.0 | 23.5 |
| Violent protest | 0.1 | 1.3 | 98.6 | 0.2 | 5.0 | 94.9 | 4.1 | 11.5 | 84.4 |
| *Lifestyle and consumerist politics* |  |  |  |  |  |  |  |  |  |
| Paid for environmental measure  | 15.0 | 61.8 | 23.2 | 17.9 | 76.7 | 5.4 | 21.7 | 70.4 | 7.8 |
| Reduced temperature at home | 30.4 | 31.2 | 38.4 | 39.8 | 42.9 | 17.3 | 54.1 | 33.6 | 12.3 |
| Stopped eating eat | 10.6 | 21.9 | 67.5 | 25.3 | 45.2 | 29.4 | 48.8 | 32.0 | 19.2 |
| Stopped flying  | 13.9 | 22.7 | 63.5 | 25.8 | 37.3 | 36.9 | 40.7 | 36.6 | 22.8 |
| Climate offsetting  | 17.2 | 53.3 | 29.5 | 30.3 | 63.3 | 6.4 | 37.3 | 50.8 | 11.9 |
| *Digital network participation* |  |  |  |  |  |  |  |  |  |
| Posted on social media | 11.6 | 17.7 | 70.7 | 31.3 | 39.1 | 29.6 | 60.0 | 24.2 | 15.8 |

The differences between the three clusters are highly significant (p < 0.001) for all political actions. The greatest differences occurred for joined demonstration, environmental march and global climate strike (Cramer’s V = 0.8).

***Table F****: Membership of the three clusters in organisations (in percent)*

|  |  |  |  |
| --- | --- | --- | --- |
|  | reluctant | sympathetic | active |
|  | pass. memb. | act. memb. | no member | pass. memb. | act. memb. | no member | pass. memb. | act. memb. | no member |
| Trade union(p < 0.001; Cramer’s V = 0.1) | 41.9 | 7.6 | 50.5 | 58.0 | 8.6 | 33.4 | 53.3 | 12.5 | 34.2 |
|  | passive and active members combined | No member | passive and active members combined | No member | passive and active members combined | No member |
| Political party(p < 0.001; Cramer’s V = 0.2) | 4.5 | 95.5 | 7.9 | 92.1 | 26.3 | 73.7 |
| Environmental organisation(p < 0.001; Cramer’s V = 0.3) | 5.1 | 94.9 | 18.0 | 82.0 | 44.5 | 55.5 |
| Human or civil rights organisation(p < 0.001; Cramer’s V = 0.3) | 5.4 | 94.6 | 20.6 | 79.4 | 37.9 | 62.1 |

***Table G****: Social and demographic characteristics of the three clusters (in percent)*

|  |  |  |  |
| --- | --- | --- | --- |
|  | reluctant | sympathetic | active |
| **trust** (p < 0.001; Cramer’s V = 0.2): low  | 33.0 | 15.2 | 17.1 |
| rather low  | 27.5 | 21.7 | 22.5 |
| rather high  | 23.1 | 27.3 | 28.7 |
| high  | 16.4 | 35.8 | 31.8 |
| **gender** (p < 0.001; Cramer’s V = 0.1): female | 44.8 | 55.8 | 63.3 |
| male | 55.2 | 44.2 | 36.7 |
| **political left-right-orientation** (p < 0.001; Cramer’s V = 0.4) |  |  |  |
| left | 20.2 | 60.3 | 79.5 |
| middle | 20.5 | 17.3 | 11.5 |
| right | 59.3 | 22.3 | 9.0 |
| **most frequent party preferences** (p < 0.001; Cramer’s V = 0.4) |  |  |  |
| Greens (Miljöpartiet) | 1.1 | 9.5 | 12.7 |
| Conservatives (Moderaterna) | 16.5 | 5.0 | 2.5 |
| Social-democrats (Socialdemokraterna) | 12.0 | 20.5 | 14.3 |
| Right-wing populist party (Sverigedemokraterna) | 19.2 | 4.5 | 2.4 |
| Left Party (Vänsterpartiet) | 3.9 | 17.1 | 42.1 |
| No party | 15.6 | 17.1 | 7.9 |
| **age** (p < 0.001; Cramer’s V = 0.1): 18-24 years | 5.9 | 6.3 | 9.3 |
| 25-34 years | 12.8 | 20.8 | 24.0 |
| 35-44 years | 13.4 | 19.4 | 17.1 |
| 45-54 years | 15.2 | 16.6 | 12.4 |
| 55-64 years | 19.7 | 16.6 | 14.7 |
| 65+ years | 32.9 | 20.3 | 22.5 |
| **income** (p < 0.001; Cramer’s V = 0.1): low | 39.4 | 38.5 | 52.7 |
| middle | 48.7 | 49.5 | 38.8 |
| high | 12.0 | 12.1 | 8.5 |
| **education** (p < 0.001; Cramer’s V = 0.1): low | 12.7 | 5.6 | 5.6 |
| middle | 25.1 | 21.3 | 12.9 |
| high | 62.2 | 73.1 | 81.5 |
| **religion** (p < 0.001; Cramer’s V = 0.1): Christian | 64.9 | 53.9 | 46.2 |
| other | 5.1 | 6.7 | 3.3 |
| no religion | 30.0 | 39.4 | 50.5 |
| **noticeable occupational statuses** (p < 0.001; Cramer’s V = 0.1) |  |  |  |
| higher-grade service class | 19.8 | 25.4 | 30.4 |
| skilled workers | 11.7 | 14.0 | 5.2 |
| retired | 35.5 | 20.9 | 20.9 |
| other (in education, homework etc.) | 11.8 | 15.0 | 20.0 |

***Table H****: Description of the clusters by MCA dimensions*

|  |  |  |
| --- | --- | --- |
| **Link between the cluster variable and the quantitative variables** |  |  |
|  |  |  |  |  |  |
|  | Eta2 | p-value |  |  |  |
| Dim1 | 0.81 | 0 |  |  |  |
| Dim2 | 0.76 | 0 |  |  |  |
|  |  |  |  |  |  |
| **Description of each cluster by quantitative variables** |  |  |
|  |  |  |  |  |  |
|  | v.test | Mean in cluster | SD in cluster | overall SD | p-value |
| Cluster1 (reluctant) |  |  |  |  |  |
| Dim1 | -34.33 | -0.49 | 0.24 | 0.61 | 0.00 |
| Dim2 | 6.54 | 0.06 | 0.13 | 0.42 | 0.00 |
| Cluster2 (sympathetic) |  |  |  |  |
| Dim1 | 24.68 | 0.50 | 0.30 | 0.61 | 0.00 |
| Dim2 | -23.59 | -0.33 | 0.19 | 0.42 | 0.00 |
| Cluster3 (active) |  |  |  |  |  |
| Dim1 | 18.57 | 0.95 | 0.26 | 0.61 | 0.00 |
| Dim2 | 29.35 | 1.03 | 0.47 | 0.42 | 0.00 |

**Figure A**: Plot of the uncorrected explained variances of dimensions



***Figure B****: Dendrogram of agglomerative hierarchical clustering*

