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Five Finlands: A mixed-method climate attitude segmentation from a housing perspective

Joni Tuomas Vainikka [a,*], Joonas Lindfors [a], Sara-Ellen Laitinen [b], Eveliina Salmela [c], Teemu Kemppainen [a], Anne Toppinen [d], Venla Bernelius [a]

[a] Department of Geosciences and Geography, University of Helsinki, P.O. Box 4 (yliopistonkatu 3), FI-00014, Finland
[b] Department of Economics and Management, University of Helsinki, P.O. Box 27 (Latokartanonkaari 5), FI-00014, Finland
[c] School of Marketing and Communication, University of Vaasa, Wolffintie 32, FI-65200 Vaasa, Finland
[d] Department of Forest Sciences, University of Helsinki, P.O. Box 27 (Latokartanonkaari 5), FI-00014, Finland

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ABSTRACT

The climate changes faster than our collective sense of urgency for climate action. Previous research has acknowledged the diverse segments of climate-concerned publics but often without qualifying the discursive landscape within such groupings. In this mixed-methods-based paper, we first employ latent class analysis to random sample survey data representing the Finnish public to form a five-part classification. Second, we complement the segmentation with qualitative insights from online discussions and interview material. We name the segments *Engaged*, *Aware*, *Cautious*, *Unsure*, and *Divergent* based on their attitudes toward the changing climate and their housing behaviours. We also reflect on why the respondents tend to cluster into such segments based on socioeconomic, geographical, and ideological factors. Using this classification as a lens allows us to identify residents between more active or vocal opposites and sheds light on the overlooked mass that holds a key for more effective climate policies. While such a classification scheme can overlap at points and be contextual and shifting, it helps to place various approaches and attitudes to scale. By operationalising the created typology, we discuss why it is crucial to understand the views of the mass in the middle, i.e., individuals who recognise climate change but, to an extent, feel disempowered from climate-wise practices, why proliferating a societal change through these individuals has the best potential for successful climate mitigation and why it is necessary to understand their political agency for (in)action.

1. Introduction

Throughout the world, we build houses and maintain homes to withstand local climate conditions. As the changing climate introduces globally more extreme weather events and rising sea levels, concerns regarding the durability and comfort of housing are on the rise (Robertson et al., 2024; Shurety, 2025). The International Energy Agency (2024) estimates that the residential sector alone, without construction, is responsible for 17% of all carbon dioxide (CO_2) emissions from fuel combustion in the world.[1] Thus, the changing climate impacts housing, which, in turn, contributes to greenhouse gas emissions.

Homes are spaces of anticipation, creativity, and improvisation and are never bounded or separate from their outside circumstances (Pink, 2022). Climatic changes are eventually entangled with homes. Increased heatwaves or heavy rains, for instance, emphasise the relationship between our temperature-controlled everyday lives and the outside (Della Bosca, 2023; Lehman and Kinchy, 2021). Housing and climate are also interconnected over long timeframes. When housing is a choice, people increasingly base their decisions on climatic anticipation, experiences, economics, and insurance options (Lucas et al., 2021; Osbaldiston, 2022). Therefore, our connection to home is more or less a relation to the future, as individuals construct their identities, their relations to place and the effects of the planetary climate partly through the continuity of their homes (Devine-Wright, 2013; Lie et al., 2023; Ratnam, 2018).

* Corresponding author.
E-mail address: joni.vainikka@helsinki.fi (J.T. Vainikka).

[1] The same figure is 20.3% for the European Union and 14.4% for Finland. According to Statistics Finland, 26.2% of the final use of energy products can be attributed to households that use two-thirds of the energy for space heating (and 0.2% to cooling) in 2022. (stat.fi/en/statistics/entp).

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Individuals and households, however, view the impacts of the climate crisis on housing practices differently. Some challenges are met as technological issues, while others require social considerations (Besbris et al., 2024; Ellsworth-Krebs et al., 2015). Some measures, like lowering indoor temperatures, are easier for households to decide upon, whereas complete decarbonisation may require transformations in energy infrastructures (Farjam et al., 2019; Vainikka and Saastamoinen, 2026). Those (regulating) cognitive and emotional processes that can be considered as *climate change attitudes* set the foundation for any action (Lind et al., 2023; Rode et al., 2021). These attitudes are, to some extent, reflected in the practices, intentions, understandings, and sense of responsibilities of individuals. Importantly, climate change attitudes can explain the sense of efficacy and urgency that individuals have towards climate change mitigation and adaptation (Dirksmeier and Tuitjer, 2023; cf. Bandura, 2000).

We know relatively little about how housing and being at home influence climate change attitudes. This study anchors climate change attitudes into homes that sit in their neighbourhoods, are affected by local climatic conditions, and represent long-term commitments to places. By following the recent interest in the spatialities of climate change attitudes (Mewes et al., 2024; Tuitjer et al., 2022), we aim to understand how climate attitudes and their segmentation relate to homes, climate-wise practices and obstructing climate policies, and, in terms of the decarbonisation of homes, what can be expected from different groups (Chryst et al., 2018; Kácha et al., 2022; Lind et al., 2023; Maibach et al., 2009). In this paper, we focus on Finland, where housing is conditioned by rather cold winters and increasingly hot summers and where the methods for heating and cooling homes can impact how climate issues are considered and discussed. It is these everyday practices in the home that can affect how the urgency of and capabilities to conduct climate mitigation are constructed.

This paper presents a mixed-methods analysis of home-related climate attitudes and aims to unravel different ways in which climate change is thought of and talked about. We explore how quantitative segmentation can guide the analysis on climate-wise housing practices and narratives, and help identify the challenges that come with rigid segments when behavioural change is needed.

Our specific research questions are:

- RQ1) What types of resident group segments can be identified in Finland based on their attitudes and views toward climate change?
- RQ2) How does this segmentation align with qualitative interview and online discussion material regarding housing and climate?
- RQ3) Do home and housing shape these attitudes toward the changing climate?

After this introduction, we discuss how attitudes toward the changing climate differ, what the common factors behind such differences are and the logics of segmenting attitudes to understand patterns in climate talk and practices. Second, in the Data and methods, we discuss the mixed-method setting. We employ a latent class analysis (LCA) on a nationwide survey on housing and decarbonisation, which we complement with qualitative material (interviews, blogs, and threads) on housing practices and climate attitudes. Third, we present our LCA and how we ended up with the five-class solution of the *Engaged*, *Aware*, *Cautious*, *Unsure,* and *Divergent* groups and explicate their socioeconomic, spatial and housing backgrounds, and values. Our use of the segments as frames of analysis for the interviews and texts places various climate discourses into a broader societal context, where the imagined 'antipodes' are not necessarily the ones contributing to significant change. Finally, we discuss methodological questions and how segmentation as a tool for analysing qualitative material allows us to put the distinct categories of climate (dis)engagement and (in)action into contexts and what can be expected in terms of long-term mitigation from these segments.

2. Segmenting attitudes toward the changing climate

With more than 99% of climate-related research papers indicating anthropogenetic climate change (Lynas et al., 2021), doubting the impact of humans appears irrational and irresponsible. As people increasingly have personally experienced the effects of rising temperatures (Joosse and Brydges, 2018; Robertson et al., 2024) or read about extreme weather phenomena (O'Neill, 2020), the climate crisis has become one of the principal political issues in international decision-making forums, with leaders calling for prompt carbon emission cuts globally (Ekberg et al., 2022; Nyberg et al., 2022). However, obstructive doubts, distrust, and denial toward climate policies exist, and some still feel that climate change is (psychologically) too distant from their lives (Devine-Wright, 2013; McDonald et al., 2015), even when climate change-intensified heatwaves wreak havoc outside of their climate-controlled homes (Della Bosca, 2023). While developing efficient climate policies and climate-wise housing, it is indispensable to understand climate change attitudes and beliefs, why certain factions of citizens delay policies or remain inactive (Kahan et al., 2012; Wyss et al., 2022), and what kinds of decarbonisation efforts to expect from various resident groups (Lind et al., 2023).

Understanding attitudes, or the bundles of relatively stable conceptions, positions, and emotional registers embedded in their social contexts (Albarracin and Shavitt, 2018; Leombruni, 2015), toward the constantly deteriorating global climate situation has become paramount. Even though our values or attitudes do not always translate into environmental behaviour or choices (Farjam et al., 2019; Gould et al., 2023), they shape the potentialities of our everyday actions, how we process the issues at stake, and how we qualify our practices (Bouman et al., 2020). Attitudes can reflect the level of support for and the legitimacy of political and societal action (Drews and van den Bergh, 2016; van Valkengoed et al., 2022), but attitudinal changes can occur in tandem with efficient policymaking (Henn et al., 2020; Kousser and Tranter, 2018). In managing the crisis, it is beneficial for politicians to understand how their electorates view climate policies as an identity factor or an infrastructural and economic element and what questions are crucial to which people (Poortinga et al., 2019; Rode et al., 2023). In short, attitudes and the motivation for furthering or obstructing societal action are among the most crucial issues for societies' abilities to tackle the climate crisis. However, the focus on understanding climate attitudes is commonly based on static categorisations, which, we argue, can reduce the public debate to simplistic viewpoints. Instead of targeting communication regarding the need for climate change mitigation differently to various social classes (Corner and Randall, 2011), we need to understand how people engage with each other and with the scope of the problem (Badullovich, 2023), and how the changing climate is discussed as part of everyday life beyond the most vocal factions within societies (Lucas and Davison, 2019; Robertson et al., 2024).

Research on climate attitudes signals that the climate is deeply politicised. Ideological cleavages between liberals and conservatives (McCright et al., 2016), altruism and egoism (Poortinga et al., 2019), post-materialism and libertarianism (Kvaløy et al., 2012; Lewandowsky, 2021), or research-driven policies and orchestrated populism (Ekberg et al., 2022; Hornsey et al., 2018; Kulin et al., 2021) are the commonly identified differences. Moreover, education, gender, age, and religiosity are at the background of climate change opinion, attitude and anxiety differences (Becchetti et al., 2025; Krange et al., 2019; Tuitjer et al., 2022). Economic shocks can impact how people accept climate policies (Rudolph and Gomm, 2024), whereas extreme climatic events, especially hot, dry days, can at least momentarily make people more aware of the change (Lohmann and Kontoleon, 2023; Marlon et al., 2021). The keys to internalising low-carbon lifestyles are knowledge of the phenomenon (Ranney and Clark, 2016) and intrinsic motivation and sense of responsibility (Becchetti et al., 2025) rather than mere beliefs, which often tend to justify the adopted system or deeply engrained (national) identities (Krange et al., 2019; Kulin et al., 2021). Thus, proliferating

decarbonisation in civil society remains a matter of informing, enabling, and incentivising households in an inclusive way (Bucke et al., 2022; Pettifor et al., 2023).

Since the 2010s, segmentation analyses have been used for understanding attitude differences, the factors behind them, and how general trends in public views evolve (Klinger et al., 2022). In a landmark study on the US adult population, Maibach et al. (2009) identified six segments that illustrate differences in climate attitudes: Alarmed, Concerned, Cautious, Disengaged, Doubtful, and Dismissive. This spectrum explains the knowledge of or being most concerned about global warming, with the last-mentioned group being the least motivated to mitigate the impacts of climate change. Longitudinal research within the US has shown that the share of Alarmed people has grown at the expense of Disengaged people (Leiserowitz et al., 2021).

Aside from US analyses of politicised and polarised understandings of climate, recent evidence from attitudinal differences in Australia (Neumann et al., 2022), Singapore (Detenber et al., 2016), India (Leiserowitz et al., 2013), Germany (Metag et al., 2017), the Netherlands (Wonneberger et al., 2020) and Denmark (Lind et al., 2023) attest to a general increase in concern regarding climate change. National segmentation analyses, however, are not directly comparable (Füchslin, 2019). Often the labels used for the segments, the data collection means, and the research questions that help identify the segments vary. Using the 2016 European Social Survey, Ondrej Kácha et al. (2022) identified four groups: Engaged, Pessimistic, Indifferent, and Doubtful. Their analysis shows how internalised knowledge concerning the severity of climate change impacts individuals' sense of responsibility and agency in mitigating the change. Whereas the Australian and US cases exemplify stronger national polarisation in climate attitudes, Andrea Lind et al. (2023) show that using the original Six Americas segmentation can lead to illogical results in other countries, where consensus and more progressive outlooks toward climate issues are more evident.

Segmentation analyses run the risk of amplifying like-minded information bubbles and aspatial, isolated viewpoints, which, without local context and interpersonal encounters, can undermine the development of common ground and shared goals that are crucial for effective and implemented climate policies (Aron, 2019; Leombruni, 2015). As climate change attitudes have their geographies (Mewes et al., 2024; Tuitjer et al., 2022), it is crucial to study how the material surroundings and housing may impact attitudes. In this paper, while we extend segmentation studies to the Nordic context, we also analyse the role of housing and localities in conditioning people's perceptions of the urgency of climate action and the effects of a changing climate. Expanding local understanding of climate attitudes, particularly the housing-related processes that shape them, is essential for formulating effective local policies and ensuring that shared international efforts are sensitive to local needs and conditions.

3. Data and methods

In this paper, we use a mixed-method approach to analyse climate attitudes in Finland. Our aim is to enrich and deepen the description of our study phenomenon, understand the social meaning-making around the climate-housing nexus and contextualise our results based on the frequently used quantitative–classificatory approach (e.g., Fetters et al., 2013).

The primary dataset consists of a nationwide survey collected in March–April 2022, complemented by interviews and social media discussion data from 2021 to 2022. The qualitative material is not equally representative of all population groups; rather, we employ it to gain depth into certain specific spaces of dialogue and groups. The relevance and diversity of the interviews and social media discussions provide valuable insights into what kind of segments or "climate types" are identifiable. While the qualitative analysis does not provide information on the proportions of such groups, it offers a means to establish their typological existence. This mixed-methods approach allows us to illustrate how climate mitigation efforts are discussed, what roles households assign to themselves and how the impacts of climate change are anticipated and managed in the housing context.

In terms of data collection and analysis, our mixed-methods study runs in several phases. Following the oft-cited *explanatory sequential design* (Fetters et al., 2013), where quantitative data collection and analysis occur first, we *merged* two kinds of data for comparative purposes (see also Fritz et al., 2024; Jack et al., 2024). We use the segmentation derived from the LCA as a framing tool for analysing the interviews and discussions. The reporting proceeds in a *weaving* manner, meaning both findings are discussed together theme-by-theme. Finally, we aim to allow space for both *confirmatory* findings and for points of *discordance*.

Mixed-methods studies on climate change attitudes are scarce. Bowers et al. (2016) used open-ended survey responses to illustrate a segmentation based on Maibach et al. (2009). Taddicken and Reif (2016) used segmentation to explain what kind of people create social network content on climate change. Andreotta et al. (2022) formed segments based on Q-method statement prompts from Twitter data. Also, Höpfl et al. (2024) used interview-induced personas as a basis for a survey to cluster sustainable behaviours.

Segmentation within mixed-methods analysis can go further than describing social differences, offering a more nuanced view of experiences, conceptions, and discourses. While survey classifications have their merits and can reveal socio-psychological profiles, they may provide static and one-dimensional depictions of climate change attitudes, which may limit not only their purely epistemic value but also their policy relevance. Thinking patterns are not easily pigeonholed since people may jump and shift between segments — even as they speak.

3.1. Quantitative analysis: Segmenting Finnish residents

The *Housing Now and in the Future* survey was piloted with 51 responses in January 2022 and then formatted as a web-based Webropol survey in Finnish, Swedish, and English. After a state-wide random sampling of 10.000 households (aged 18 to 80) drawn from the National Population Information System, we outsourced mailing survey invitation letters to a private company. After one reminder, a total of 1446 individuals submitted the survey. The respondents correspond rather well to the 18–81-year-old reference population, but they are slightly older, more educated, and more likely to have Finnish or Swedish as their native language (See Table 2). Also, single-person households are less frequent among the respondents. We performed a nonresponse analysis using a response propensity model (e.g. Laaksonen et al., 2015) based on auxiliary data from official registers for all gross sample units.

The time of the survey was characterised by an early, warm but capricious spring and three significant events unfolding. First, the COVID-19 pandemic was phasing out; second, the energy crisis began to materialise in rising costs; and third, the Russian war of aggression against Ukraine began unlocking a sea change in Finnish geopolitics. Thus, after finding refuge at home, becoming more interested in saving energy and increasingly cutting links with fossil-fuel-powered Russia, households responded to the survey at a time one external anxiety shifted to another. The survey was divided into six sections covering issues of 1) home and residence, 2) second homes, 3) housing preferences, 4) practices and solutions, 5) views on low-carbon housing, and 6) views on climate change and sustainability, ending with a wide-ranging section on background details. The extensive background variables include, e.g., education, occupation, income level, home region, and political party preference.

In this paper, we focus on the 13 survey questions that deal with perceptions, emotions, and moral stances regarding the changing climate (see Fig. 2). The rationale behind these questions was to probe how climate change and climate policies inform households to possibly rethink everyday practices and housing structures. Thus, this study does

not try to replicate Six America's Segmentation or the European Social Survey but pushes research on climate change attitudes more from beliefs towards agency and responsibility questions. Using the 13 variables to implement LCA allows us to identify the main trends and key patterns in understanding the climate crisis and agency toward decarbonisation or to segment climate-related attitudes. The LCA models case-level data to identify groups with similar characteristics (Maibach et al., 2011; Nylund-Gibson and Choi, 2018). Unlike cluster analyses, where the nearest neighbours are grouped, the LCA assumes a latent classification, or segmentation, within the data that would explain variation. By modelling probabilities for each case to belong to a posterior latent class, the method also provides estimates for each case to have a particular response to a specific question. The formed classes are not on a continuum but rather are probability dimensions based on even categorical variables (McCutcheon, 1987). The number of classes is not predetermined, as the most suitable classification can be evaluated through the model fit indices of the analysis.

We used the snowLatent analysis module with Jamovi software to execute the initial LCA (Seol, 2025). Since the module is based on the poLCA software package in the R programming language (Linzer and Lewis, 2011), we coded our own LCA tool in R, along with robustness checks for different solutions with the parametric bootstrap likelihood ratio test, bootstrap and split-half adjusted Rand index, and the standardised bivariate residual test. The analysis modelled classifications ranging from two to eight classes, for which we assessed fitness, validated the selection, and considered theoretical suitability (Table 1).

The fitness indices suggest that the five-class solution gives the optimal balance between fitness, parsimony, and robustness. There are clear 'elbow points', or lowest values, in the BIC and CAIC information criteria for the models, after which the fitness would not increase (Nylund-Gibson and Choi, 2018). Although the AIC indices continue to decrease, it has reached the elbow point of substantial improvement with the five-class model. Entropy, which explains classification precision, is best with the four-class model but it still exhibits residual dependence, suggesting an incomplete representation of a latent structure. The Adjusted Rand Index suggests that two- to four-class solutions provide the best fit, but this is partly because of larger class sizes. To ensure that the model is also content-wise sensible, we checked the rationality of the response distributions for the five classes. The Sankey illustration (Fig. 1) shows that a six-class model would have principally divided the centre-most group into two, and seven- and eight-class models would have generated even smaller segments.

3.2. Qualitative analysis: Home-related climate discourses

The second part of our analysis draws on interviews and online discussion material that relate to attitudes toward climate change and climate-wise housing practices in Finland. The interviews (n = 30) were carried out in October and November 2021, with themes that included *climate wisdom* in housing, or the everyday practices cognizant of climate effects, housing solutions, elements of housing practices, housing dreams or anticipatory futures. The interviews were accompanied by a pre-questionnaire covering background information and the participants' level of concern regarding climate change. None of the interviewees were ignorant about the climate. In this paper, we focus on issues where the participants discussed their thoughts associated with the concept of climate-wise housing or living, and how housing could mitigate climate change.

The participants were obtained through social media channels in cooperation with partners of the Decarbon-Home research project. Thirty of the seventy-nine individuals who responded to a pre-questionnaire agreed to an interview. Their geographical focus was on the suburbs (n = 20) of the cities of Helsinki (12), Vantaa (4), Joensuu (3), and Turku (1) or the rural areas (n = 10) of the regions of Uusimaa (4), North Karelia (3), Southwest Finland (2), and Pirkanmaa (1). The 30 participants had an average age of 49 years, ranging from 30 to 73 years. Twenty-six identified as women and four as men. This gender imbalance is the result of women's greater eagerness to participate in interviews in general, and the fact that the home has traditionally been considered as a woman's domain (Niemistö et al., 2021). The interviews were conducted in Finnish at the participants' homes (n = 16) or remotely via video conferencing (n = 14). If the interview took place at a participant's home, they showed the researcher around their apartment or house and talked about their home. The researcher also took photographs of the participants' homes. In the remote interviews, the participants were asked to walk around their home or describe it in their own words to reduce the gap between onsite and digital ethnography (Seligmann and Estes, 2020). The interviews lasted between 22 and 111 min, depending on the length of the responses and additional discussion. The face-to-face interviews were audio-recorded, while the remote interviews were recorded on video.

The analysis progressed from listening to or watching the recordings to close-reading transcripts and selecting passages related to climate effects or practices, which formed a sample of 32 pages, or 29.500 words. Using thematic content analysis (Hayfield, 2015; Terry et al., 2017), we sought to find meanings that the participants associated with climate change and to uncover their opinions and attitudes toward it. The passages from the sample were categorised into groups based on the types of opinions and concerns they raised about climate change. The thematic analysis allowed us to identify four types of attitudinal registers that occupy general responses in the interviews and that we compared to the survey typology. Since the interview participants expressed various degrees of concern about climate change, climate denialism or divergence did not emerge at this stage. The comparison helped us to support the survey analysis, as the four types could be used to frame an in-depth understanding of how key aspects of attitudes are voiced. The thematic analysis supports the earlier segmentation as credible while allowing for latitude in opinion formation. Survey responses and interviews can include time-specific options (Bercht, 2021), contrasting statements or moments of opting out of stating opinions (Wolf and Moser, 2011). Regardless of the variability in speech, this analysis aims to frame what kinds of opinions might be voiced in different segments.

To identify more varied attitudes and groups, we gathered online discussion material from two sources: public lifestyle blogs [b#] and open, anonymous online discussion boards [d#] (see, e.g. van Eck and Feindt, 2022; Tillery and Bloomfield, 2022). Using keywords like 'carbon footprint', 'carbon neutral', 'low carbon', 'climate change', 'climate-friendly' or 'global warming', we scanned the Finnish ecological lifestyle blogosphere and selected 17 lifestyle blogs[2] from the years 2018 to 2021. These yielded 46 blog posts with 552 comments that opened up spaces for (feminine) 'everyday cultural politics' on the climate (see Joosse and Brydges, 2018). The widely-used discussion board Vauva.fi has extended from maternity topics to generic themes far beyond family-centred discussions. Searching for climate-related discussions resulted in 109 threads and 3496 messages. Ylilauta, by contrast, is widely known for its far-right-leaning political emphasis and popularity among young men (Ylä-Anttila et al., 2020). We collected 50 discussion threads, containing 543 messages posted between 2019 and 2021 on this platform to make the qualitative material more representative and to include voices that would not otherwise agree to on-site interviews dealing with climate-wise practices. Both of these well-known, anonymous discussion boards serve as platforms for talking points and gossip that find their way into coffee table discussions. The material allows for a rich examination of how climate issues are discussed publicly and, at times, anonymously. Finally, the material was analysed using content

[2] Aurinkorasvaa ja aloe Veeraa, Ihme Ituhippi, Julia Toivola, Lady of The Mess, Laura Linnea, Luonnonkaunis, Lyhyenä hetkenä, Matkakuume, Multaa ja mukuluoita, Puutalobaby, Roosa Blom, Ruusu-unelmia ja villasukkia, Tanja Räty, Tiia Koivusalo, Umppu, Viherrin, Vuosi ostamatta mitään.

Table 1
Model fit information criteria ((Akaike's (AIC), consistent Akaike's (CAIC), Bayesian (BIC), and adjusted Bayesian (ABIC)), Entropy and G^2 indices for the latent classes in the survey (n=1446). The table also includes robustness checks, the parametric bootstrap likelihood ratio test, split-half and bootstrap stability tests and bivariate residuals for two- to eight-class models.

	2-class	3-class	4-class	5-class	6-class	7-class	8-class
Fitness: Information Criteria & Entropy							
Log-likelihood	-26354	-25171	-24687	-24323	-24120	-23961	-23832
Akaike Information Criterion	52974	50743	49908	49314	49043	48858	48733
Consistent Akaike IC	53809	51998	51584	*51410*	51560	51796	52091
Bayesian Information Criterion	53676	51798	51317	*51076*	51159	51328	51556
Adjusted Bayesian (ABIC)	53254	51163	50469	50015	49886	49843	49850
Entropy	0.88	0.899	0.92	0.883	0.878	0.875	0.867
Degrees of freedom, df	1312	1245	1178	1111	1044	977	910
G^2 (model fit)	31708	29343	28375	27646	27241	26923	26664
Robustness checks							
Parametric bootstrap likelihood ratio test (k–1 vs. k, B = 500)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Split-half stability ARI Mean (nrep=50)	0.872	0.870	0.849	0.760	0.735	0.680	0.630
Split-half stability ARI SD	0.142	0.062	0.125	0.096	0.073	0.096	0.075
Bootstrap stability ARI Mean (nrep=50)	0.889	0.890	0.848	0.785	0.737	0.684	0.634
Bootstrap stability ARI SD	0.123	0.047	0.129	0.080	0.091	0.078	0.087
Bivariate residuals (% over 3.84)	97.5%	54.4%	6.3%	2.5%	1.3%	1.3%	1.3%

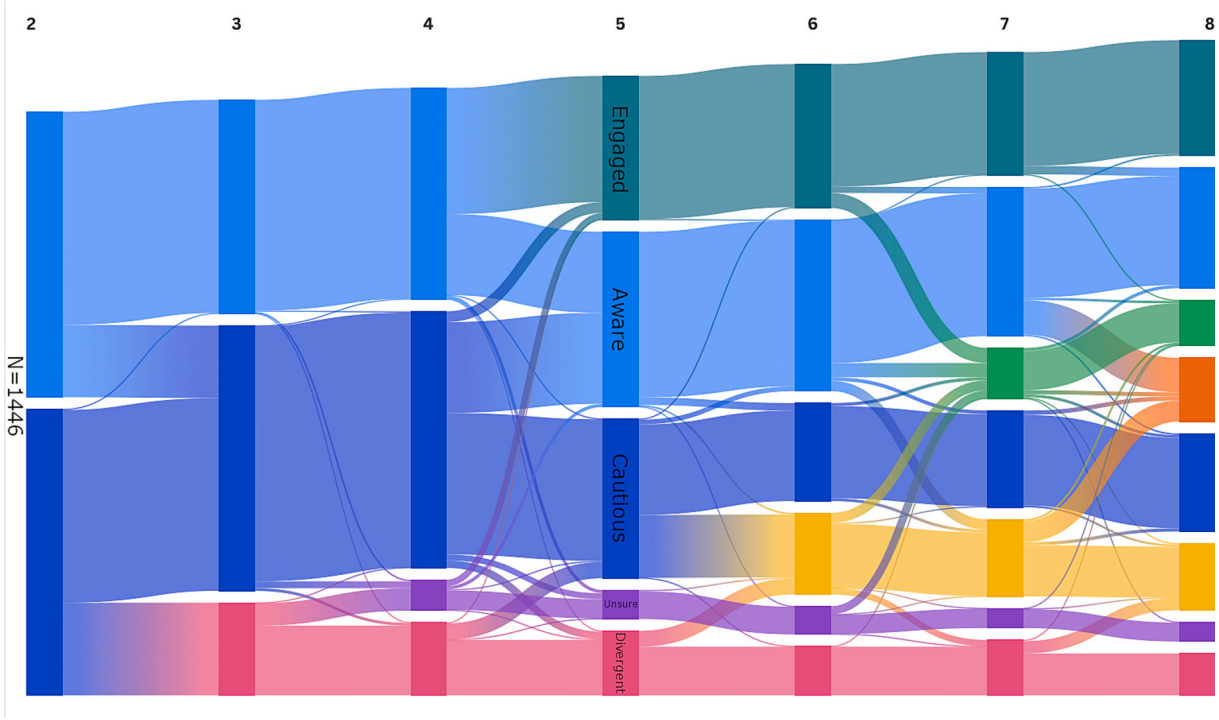

Fig. 1. Sankey diagram of latent class solutions (k = 2–8), showing how respondents are reclassified as the number of classes increases. The segments of the five-class solution are labelled.

and discourse analysis, with the five identified categories used as analytical frames in the close-reading of the blogs and threads. The sensibility of the qualitative analysis was also cross-checked against the contents, style, and tone of the open-ended responses in the survey.

4. The engaged, aware, cautious, unsure, and divergent – Five Finlands

The latent class analysis indicated a five-class model. We identified three major segments in which people had internalised the extent of climate change to various degrees and two smaller segments in which people either hesitated to form an opinion or diverged from the main body of respondents in their attitudes (See Fig. 2). We named the segments based on an analysis of how the respondents answered the 13 climate-related questions, relevant consumption behaviour and intention questions and open-ended responses. Although the Six Americas (Leiserowitz et al., 2021) climate audience vocabulary of alarmed-concerned-cautious-disengaged-doubtful-dismissive has become a standard in Anglo-American climate research, and it, in certain respects, could have worked for the Finnish case, the terminology dates from 2008, after which acknowledging climate change has become more institutionalised. Kristoffer Ekberg et al. (2022) note that using terms like 'alarmed' for people who are rightfully concerned about rising temperatures or sea-levels, does not address the needed societal transition, as it normalises insufficient practices and behaviour. Since a clear majority understands what the changing climate entails, using a term like 'dismissive' also misses its target. There is a vocal minority that not only is ignorant of the science but whose actions diverge from the majority in drastic ways, often measured through biased assimilation or cherry-picking (Dandekar et al., 2013). In the following section, we

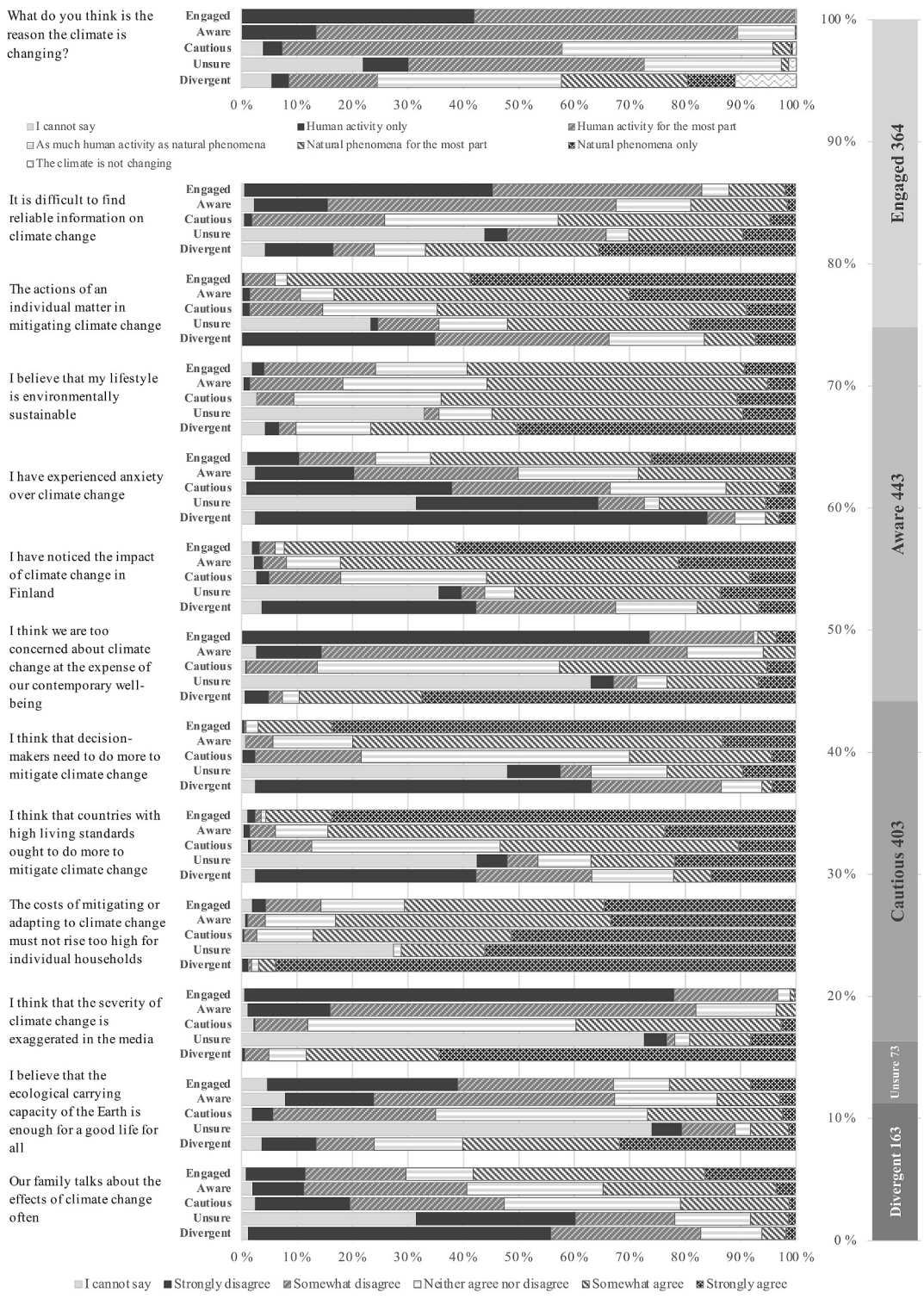

Fig. 2. Response patterns of segments to the 13 different questions constituting climate attitudes (n=1446).

qualify the naming of our five segments and use the classification to paint a more in-depth picture of how the climate is talked about in different groups. The order of the analysis runs from the most concerned attitudes toward the minor groups, where a sense of agency regarding the climate was least discernible.

The *Engaged* group consists of around 25% of the respondents (n = 364). This segment is the most anxious and concerned about climate change. They accept anthropogenic climate change and think that the actions of individuals matter for mitigating the change. The Engaged also see that decision-makers and countries with higher living standards have the moral obligation to do more to reduce the effects of climate change. Most of this group has witnessed the effects of the changing climate, and they have found reliable information on the severity of the situation. More than half of this segment often talks about the effects of climate change.

Compared with other groups, the Engaged are younger, more educated, and typically live in cities in Southern Finland, quite often in blocks of flats. More women than men fall into this group. The Engaged

also include the largest share of people who have moved within Finland, and most often they have lived in their current home for less than six years. The Engaged are interested in the sharing economy and believe that the value of housing increases when their carbon footprints are reduced. Politically, they are more inclined to the left and believe in their own *efficacy* in mitigating climate change (Choi and Hart, 2021). Based on the open-ended survey questions, inequality, responsible living, and urban nature emerge as concerns.

In the interviews, the Engaged narratives underline climate anxieties but often expressed a commitment to practical solutions and lifestyle choices that help them reduce their own or the housing associations' carbon footprint. In the following excerpt, one interview participant talks about climate anxiety and how to deal with it by coming to terms with sustainability.

> Well, I, then, became aware when it started to become a talking point in the early 80s, and it has been distressing me since, and I understand terribly well that now a new generation is getting anxious about it. (−-) It causes anxiety and despair. But then also — to manage those feelings, you have to invest in everyday life and that, more broadly, those choices and actions you make are in line with your values and satisfy you, and that also the rights of others are realised. (Woman, 51 years, detached house in the suburbs)

Engagement with the climate can take different forms depending on the location (Tuitjer et al., 2022). In cities, participants can live in smaller apartments without cars. By contrast, in rural areas the participants could promote partially self-sufficient lifestyles. In both cases, energy solutions, solar panels and heat pumps were mentioned as the main means of reducing their carbon footprints.

In the social media material, narratives reflecting the Engaged attitudes relate to, for instance, the latest Intergovernmental Panel on Climate Change (IPCC) reports, climate anxiety and a guilty conscience about non-ecological choices or actions such as flying [b1; b7]. In such a discourse of concern, the fate of humanity is tied to climate change [d1], where selfishness has inflicted climate change that urges acting 'now and not tomorrow' [b5]. In line with an existentialist notion that everyone's action matters, the engaged often think that everyone must do something and not wait for others to lead the way [b8; d1]. While the Engaged realise that Finns alone cannot make climate change disappear, they believe the country should set an example for the rest of the world through its action [b5]. Responsibility for the climate is most internalised in this segment. 'We, like everyone in the developed countries, have mitigation responsibility […] because of our high standard of living we use enormous amounts of energy' [b6; d2]. One blogger indicated that decision-makers should do more: 'Stricter regulation and consumption control are needed, for example in the form of taxes' [b3]. Many said that they talk about sustainability with their families, teach children sustainable practices and act ecologically. Such attitudes inform trust and expectations in the media, as one blogger celebrated a national paper bringing 'climate change more visible' [b6] by showing, for instance, how different parties confront and manage the crisis.

The largest segment, nearly 31%, is comprised of the *Aware* (n = 443). They take similar stands on climate change but are less resolute in their responses. This group sees that human activity, for the most part, is behind the changing climate, and a majority report to have noticed its impact. Compared with the Engaged, they are less anxious about the climate and do not talk with their families about climate change as much but find reliable facts from the media. The Aware agree that the actions of individuals matter, and that decision-makers and leading countries have the moral obligation to do more. This segment realises that the Earth's ecological carrying capacity cannot provide a good life for all humankind.

This segment is the most well-to-do, more frequently women, and a bit older. They are often homeowners in growing municipalities, usually around large cities, with intentions to consume over the average. Thus, this group has the most potential for planned climate-wise housing solutions. The Aware are politically inclined with the urban-based Social Democrats or National Coalition. The open-ended responses reveal that sustainability questions and a sense of community appeal to this segment, but they tend to attribute the cause of the changing climate to be somewhere else. Unlike the Engaged, the Aware are more hesitant to pressure politicians to act and to demand that countries with high living standards do more. This makes it seem that the separation between the Engaged and Aware may be generational and that for the Aware, the culprits for the climate crisis are not necessarily their own consumption patterns; rather anthropogenic action that exist outside their everyday life.

The following interview excerpt represents the sentiments of the Aware group well. They think that individuals have agency in their everyday lives but are not that engaged in changing their habits.

> But somehow you think that we cannot think so — that I am just one person, and it does not matter what I do. Because everyone can try to do their best or something. Though I might fly several times a year, but I don't have kids, dogs, or anything else that would be terrible carbon footprint gluttons. I think that there remains some balance, as in this household. (Woman, 50 years, apartment building in the suburbs)

The above participant thought that reducing emissions is everyone's duty, while concurrently shifting the responsibility to those with dependants and avoiding personal blame for flying. In another interview, a 59-year-old woman participant contemplated the prospect of climate anxiety by expressing 'grief if now finally nothing is done', continuing that 'I have not been among Extinction Rebellion, but they are for the right cause. For so long it has been talked about that now is the last moment that things ought to be done, and still nothing is done.' The notion of urgency, the agency of others, and a discourse of necessity reveals how the Aware are conscious of the magnitude of the crisis but refrain from direct climate action.

In the social media material, the Aware are conscious of the elements of carbon footprints and compare their consumption to that of others. Yet, everyday life can be filled with perceived obstacles or well-being issues that compromise or make some activities unreasonable. Their relationship to decarbonisation can also be anticipatory and managed through life course plans, as one comment indicates:

> Our apartment is a little too big for us at the moment, but we hope to live here for a long time so that in the future, we can hopefully fill the rooms with our own and foster children. We keep the heating to a minimum, and we work from home, which means that emissions are reduced, for instance, by fewer trips to work. [b2]

The *Cautious* (28%, n = 403) are the second largest segment and are often more divided in their views. Over half of them believe in anthropogenic climate change and have noticed its effects. Two-thirds feel that individual choices matter, but only one in eight has encountered climate anxiety. For this group, climate change is a phenomenon that mostly occurs outside their daily lives, with half seeing it as a problem for well-off countries, and only a third as a political issue, while only 21% say that they have discussed its effects with their families.

Of the three main segments, the Cautious is the only with a slight majority of men. This segment is the oldest, and compared to other groups, they have also lived the longest in their current homes. They often live in car-dependent sub- or *peri*-urban areas or the countryside in their own detached homes. Politically, they are more inclined to the centre–right, and their open-ended answers reveal a belief in rural ways of life and old, sustainable practices. Like the Aware, they have tapped into geothermal heat the most, and nearly one-third have air-source heat pumps.

The interview material aligned with the Cautious signals about the uncertainty of whether individual actions matter or how to have any climate agency. A shared sentiment is an understanding of the effects of climate change but also the idea that individuals have been given too

much responsibility. For them, housing is more linked to habits, common sense, and market supply, not climatic issues. In the following quote, the sensibility of transformative mitigation practices is questioned.

> Well, there should be some proof that there is sense in those measures, that do they promote it or not, or do we go from bad to worse? We should first look at what kind of significance they have for climate change. That's the starting point. I wouldn't promote change without due consideration. And then it might turn out that it does just the opposite. (Woman, 62 years, a row house in the suburbs)

In the social media material, Cautious voices criticise the idea that climate mitigation is the responsibility of individuals and push for accountability to the private sector, industries, and energy production [d6]. Quite often, like in the following quote, people also believe that their carbon footprints are already irreducibly small.

> I already have a lower-than-average carbon footprint. I could reduce the use of meat and dairy products; I can't influence the type of heating the housing association uses. Travelling is something I won't give up, but the trips are not long-distance. Car use is already at a minimum. [d4]

The smallest of the five groups is the *Unsure* (5%, n = 73). This group frequently used the 'I cannot say' −option, and overall, they exhibited a general lack of awareness and helplessness regarding climate change. The Unsure are divided on the cause of the changing climate and would not pressure decision-makers or developed countries. The climate is not a talking point in their families, and as the least affluent group, it seems that the climate change discussion is buried under other welfare questions outside of daily life (see also Lucas and Davison, 2019). Politically, the Unsure are the least inclined to state their party support.

Similar ideas of not having the resources or an interest in reducing climate emissions emerged in the interviews. They may also feel irritated that climate change is being 'forced upon' them and discussed so much. One participant hesitated to accept the burden of living climate-consciously and claimed that 'it would become an unreasonable burden, because you cannot get, or there is so much information, that you can't grasp it so that you could act wisely, actually' (Woman, 52 years, detached house in a rural area). This idea indicates a social distance from the more educated Engaged group.

In the social media material, the Unsure could express doubts about whether individual choices have any meaning [b5]. They might also wonder if their actions were not already enough for one person, listing the various things that already keep their emissions low, such as living in a studio apartment, not owning a car, moving around on foot and by bike, buying clothes and other things sparingly or, if possible, recycled. Thus, acting for the climate without conscious intent or having the means for it.

> My actions are zero. I'm not doing anything to fight climate change. I spend as little as possible because I hate shopping and only buy what I need and use. I recycle because it makes economic sense to use the materials again. A polluted and littered environment is ugly. [d2]

The *Divergent* segment (11%, n = 163) differs from the rest. This group has yet to notice the effects of climate change, but only 11% deny that the climate is changing and a third attribute natural phenomena as reasons for the changing climate. The refusal is evident when 88% think that the media exaggerates the severity of climate change. Most in this segment think that the carrying capacity of the Earth is enough for a good life for all. The attitudinal disparity to other respondents is so vast that only three climate-related statements out of the 13 find some congruence with the Unsure but not with the rest. The Divergent and the Unsure are the most alike in their tendencies to not talk about climate change with their families.

Most Divergent are men; they live in the countryside, in single-family houses and outside large cities. The segment also has proportionally the most oil and wood heaters with some auxiliary heat pumps. They exhibited a pronounced need for ownership, whether cars or tools, and a slight majority of this group do not oppose income-based segregation. Their open-ended answers indicate a need for more 'diverse' discussion on the climate, concern for the complicated problem and sheer science scepticism that seems to translate into calls for unharnessed individual freedoms. Politically, the divergent segment strongly supports the Finns Party or the far right.

While the interviews mainly focused on carbon footprints and how concerned individuals are about the climate, there were moments when people's reactions toward the climate crisis were termed as 'hysteria' or when anthropogenic climate change was compared to all other climatic changes in other geological epochs. In the social media material, a divergent mindset or discourse continued this 'whataboutism' on human agency, with one person stating that the climate 'has always changed and will change' [b4]. Reflecting a similar attitude, some voiced that people concerned about climate change fuss and complain too much about it and that they should just enjoy the weather getting warmer in Finland and elsewhere [d5]. Concern about the climate is seen as 'folly' and not something people should worry about since one should not worry about things that are out of individual control [b4]. Climate policies were also bundled together with immigration as part of the far-right reactionary rhetoric. One commentator indicated that 'pro-immigration people must also take responsibility for the carbon footprint of the immigrant. I don't have this burden, so I can eat and puff out in peace' [d4]. Shifting the blame and using the inaction of other countries as a motive for opposing climate policies in Finland fits the discourse. 'What about then when Finland no longer pollutes the Earth, but the world isn't saved because other countries carried on?' [d6]. Climate action is also shunned because people do not see any option for the current situation, as people must get to work and public transport is not available everywhere [d5]. Moreover, some Divergents may be well acquainted with climate pledges, claiming that:

> Now, it's worth reading the goals quite critically. The [emissions] goal for the year 2050 is so tight that, to achieve it, everyone will probably have to live in big cities in 20-square-metre studios and walk or bike to work. No own apartments, no cars, no trips abroad and maybe not even domestic trips. Even vegetarian food is not enough, and perhaps we'd have to eat some algae. [sarcastically] This is worth aiming for! [d6].

Here, irony is used as a rhetorical device to point out that the climate goals of different research institutions are seen as unrealistic to achieve with mindsets locked in current consumption patterns.

4.1. Key sociodemographic differences between the segments

The LCA discerned the survey responses into rather rigid segments. (Fig. 2). While all 13 tested statements yielded statistically significant differences in an independent samples–Mann-Whitney *U* test (with 'cannot say' options omitted), the most divisive statements related to the role of the media, decision-makers, and contemporary well-being. The Divergent differ from all other respondents at a highly significant statistical level ($p < 0.001$) on every statement, whereas the Unsure differ at a statistically significant level on seven statements, the Cautious on 12 and the Aware on 11. The Unsure chose the 'I cannot say'-option most often; otherwise, their responses align more closely with those of the Cautious and the Aware. The most consistently agreed-upon statements concerned beliefs in sustainable lifestyles and the costs of mitigating or adapting to climate change.

The sociodemographic patterns of the segments differ considerably, and some of the attitudinal variation can be predicted through a mixture of socio-spatial characteristics (see Table 2). As stated above, the Engaged and the Divergent groups are the youngest and illustrate gender differences. The findings attest that men are less enthusiastic about addressing climate change and are the majority in denying or dismissing

Table 2
Background variables for the five segments. National averages for the same age group and postal code education data were gathered from Statistics Finland.

	Engaged	Aware	Cautious	Unsure	Divergent	Total	Nat. Av. (2022)
Age (years, median)	43	59	61	57.5	49	55	49 [18-81]
Male gender (%)	39	41	51	28	63	45	50 [18-81]
First language Finnish (%)	90	92	91	93	100	92	86 [18-81]
Master's or PhD degree (%)	37	27.2	15	13.2	10.4	23.7	13.6
–*II*– (% in postal code area, med.)	13.8	11.5	9.4	9.1	8.7	10.9	10.5*
Household income per adult >2500€/month (%)	58	61	47	28	53	54	
Inner & outer urban area (%)	76	67	54	57	51	63	63 [18-81]
Would vote Gov/Opp Parties 2022 (%)	55/17	38/29	33/32	16/22	15/57	37.3/29.9	39.5/34.6**
Living in father's home province (%)	35	42	49	54	53	44	
Current housing satisfaction (1–10)	8.16	8.57	8.55	7.87	8.31	8.39	
Room per person (m^2, median)	38	48	50	40	46	47	42
Live in a (semi-)detached house (%)	40	51	56	45	69	51	47
Owner-occupied house (%)	64	80	77	66	79	73	69
Length of dwelling (years, median)	5	11	12	12	11	10	
Auxillary air-source heat pump (%)	20	29	28	19	34	27	

*Population-weighted median for higher education data. **Based on YLE polls and adjusted with the survey time-frame.

the climate crisis (Ekberg et al., 2022; Krange et al., 2019). The cautiousness of older generations can relate to the adopted worldviews (Poortinga et al., 2019), but for the younger groups, the Divergent attitudes toward climate change seem to be influenced by a dichotomous anxiousness toward change (Stoetzer and Zimmermann, 2024). Still, education remains the strongest factor influencing climate attitudes — whether through a personal level of education or simply by living among highly educated people. The Engaged have the highest share of master's degrees and live in postal-code areas with the highest education levels.

Based on the survey, the household income per adult is lowest among the Unsure, while the Aware are, on average, the most well-off. Geographically, the Engaged and Aware segments live mostly in inner or outer urban areas. The Cautious and Divergent also tend to live in more rural areas. Due to the urban–rural divide, more progressive climate views are found around the university cities of southern Finland. Climate attitudes follow drastically different ideological stances. Fifty-five per cent of the Engaged would have voted for the 2022, centre–left and mostly liberal government parties (Social Democratic Party, Centre Party, the Greens, the Left Alliance, or Swedish People's Party), as would the majority of the Aware and Cautious that revealed their political stances. The Divergent show an opposite 58% support for the 2022, right-wing, mostly conservative opposition (National Coalition, Finns Party, Christian Democrats, Movement Now and other smaller parties). The total political support is almost on par with the national polls of the survey time, but in our data, respondents indicated their political stances a few percentage points less than in national polls. This ideological difference between the left–centre and the right is also pertinent in other countries (Hornsey et al., 2018; Krange et al., 2019). Perhaps the most intriguing result relates to whether a person has moved to live outside of their father's home province. While women relocate more frequently to new regions, it seems that the ability to move has a relationship to climate attitudes and to an acceptance that the world around us can change.

In terms of housing-specific variables, the Aware often own their homes, and the Engaged have the highest share of those living in rental apartments. This finding may explain why, in general, the Engaged have also moved most recently. The difference between the Aware and the Cautious is not their satisfaction, or length of living in their current home, but rather it is geographical and gender-related. The Cautious are more often men outside of university cities. Interestingly, people in all groups have frequently installed auxiliary air-source heat pumps, but these are most common among the Divergent, implying that people can enact climate-wise solutions without demonstrating care about anthropogenic climate change (Della Bosca, 2023).

5. Discussion and conclusion

Climate attitudes and views are conditioned by various psychological characteristics, perceived risks (Bouman et al., 2020; McCright et al., 2016; Poortinga et al., 2019) and the material circumstances upon which the transformation of practices is built (Mewes et al., 2024; Tuitjer et al., 2022). Here, home and housing become the central locus or site where mitigation and adaptation practices are operationalised. A better understanding of residents' climate agency and how the public views the urgency of collective action is needed for effective mitigation and adaptation to the climate crisis (Nyberg et al., 2022). In this mixed-methods-based paper, we used latent class analysis for a random sample survey from Finland to analyse and segment climate attitudes from perceptual, emotional, and moral aspects, complemented with qualitative insights from online discussions and interview material. This study setting is rare and valuable, as it shows how segmentation, drawn from the population, can be used to illustrate how residents discuss and present their opinions, thus making a clear contribution to climate attitude research. Combining segmentation and discourses also provides more space to those who tend not to speak out and, therefore, does not produce harmful polarisation because a small faction diverges from the rest (Lind et al., 2023).

Regarding our first research question, we identified five segments. The Engaged (25%), Aware (31%), Cautious (28%), Unsure (5%) and Divergent (11%) fill distinct compartments of climate attitudes. Still, our results differ from the Six Americas (e.g., Leiserowitz et al., 2021) or the Four Europes (Kácha et al., 2022) studies. While we acknowledge that encapsulating broad segments of attitudes under a single term is bound to misrepresent actual (cultural) complexities, the segments explain some consumption choices, ideological alignments, and spatial differences in housing. Unlike previous segmentations, this article narrows the gap in understanding the questions of *what kind of* and *where* regarding climate attitudes and discourses.

The segmentation used 13 questions and resulted in remarkably distinct response patterns. The concern over climate in the three main segments is generational and gendered. Young women living in growing cities are more anxious about the climate. Yet, a small fraction of less mobile and less educated men house sceptical attitudes toward climate change and science more generally (Krange et al., 2019; Poortinga et al., 2019). One of the most important explanations for the differences is ideological. While the Swedish People's Party and the Greens were slightly overrepresented among the respondents and the Finns Party, Social Democrats and the Left Alliance were underrepresented by 1–3 percentage points, it is safe to say that the liberal–conservative divide is a driving force in separating the attitude segments.

Our results confirm the outcome regarding the second research question on how the 'Five Finlands' results compare with qualitative

interviews and online discussion material from the same context. The analysis of the blogs and online discussion material shows that it is plausible to divide people into five discursive categories. In the climate wisdom-related interviews, the Divergent sentiment was not so discernible, as the participants were in some manner concerned about climate change. Moreover, the antipodes or those with strong opinions are more clearly visible in social media material. In a certain sense, it is dangerous to talk about polarisation, since after random sampling, the clear opposites vanish, and the discursive space is filled with people and their stories that could be drawn to various segments and whose attitudes may also align with the most compelling messages.

Regarding our third research question on how home and housing shape attitudes on the changing climate, this paper provides an indication that growing university cities house more progressive climate attitudes. By contrast, individuals living in car-dependent suburbs and detached homes may have lower self-efficacy for mitigation (Dirksmeier and Tuitjer, 2023). Most often it is the perceived distance or separation from university-level education and staying local that yield divergent attitudes. People are more engaged with the climate if they live in smaller flats and have moved in rather recently. As Tullia Jack et al. (2024) indicate, when individuals 'routines' include high-emitting practices, it can be harder for them to admit that their attitudes are part of the non-engaged problem. Still, around 68.5% of the survey respondents observed "having noticed the impact of climate change in Finland." Housing, as a long-term commitment to place, is increasingly becoming entangled with extreme weather and climatic anomalities (Devine-Wright, 2013; Robertson et al., 2024) that force homeowners and occupants to rethink their housing practices and preparedness.

There are some limitations in the empirical survey data and the LCA. First, the data were collected in spring 2022. While other surveys show that the sense of urgency for the climate crisis has decreased in the EU (Matiiuk et al., 2023), the COVID-19 pandemic, rising energy costs, Russia's war of aggression, and Finnish NATO determination may all have affected the responses. Second, even though the survey sample is representative of the population, it is based on a single random sample with a 14.5% response rate. Especially Estonian and Russian language minorities are mostly missing in the data, while people with higher education are in abundance. An additional challenge are the single-person households that were slightly underrepresented in the data. While their attitudes are in-line with segmentation, their increasing numbers must be accounted for in decarbonising policies. Furthermore, those attentive to housing likely responded to the lengthy survey, while people with strong climate opinions participated in anonymous online discussion boards. Third, the LCA model fit indicates modest differences between the five- and six-segment solutions, where the main difference was an additional 14% group of 'unconcerned' sectioned from the Cautious and the Divergent (see Fig. 1). While the analysis is sensitive to the data used, the five-class segmentation offers the best fit without being too complex and remains robust, with clear distinctions between groups supported by high entropy, low bivariate residuals and consistent stability across bootstrap and split-half checks.

The five segments can be ambiguous when applied to single individuals or households since complex attitudinal registers underpin climate motivations (Kleinberg and Toomey, 2023). Individuals can 'flow' between the three main segments, or progress from one to another due to societal/political discussions or simply by talking about the climate more at home. Using segmentation as a discursive frame is not always straightforward, as the differences are not a continuum of understanding anthropogenic climate change but rather a mixture of 'attitudinal valence' and 'issue involvement' (Chryst et al., 2018), i.e. people either accept or do not accept climate science and actually engage with the phenomena. The spectrum of attitudes toward moral and communal solutions concerning climate work or justice can be incongruent with their cognitive involvement in trying to figure out the climate without a scientific basis. Such divergent climate attitudes contribute more to obstructing climate policies (Ekberg et al., 2022) than just holding onto individualist, reactionary lifestyles.

Based on our mixed-source data and analyses, we argue that even though large-scale survey classifications have their merits, when used alone, they tend to provide an overly static and simplified depiction of climate attitudes that neglect the complexity and dynamics of the lived experiences. Different means and types of communication strategies are needed when targeting people with varying motivations and to address the heterogeneity in climate change attitudes and awareness (Badullovich, 2023; Corner and Randall, 2011). Effective climate messaging should address the needs of people with different socio-demographic backgrounds without turning them into discursive chameleons, where the actual crisis is of a lesser degree for some than for others. Such a strategy applies to what can be expected as well. As housing is undergoing a transformation into low-carbon consumption, climate-control and materials, we can expect the Engaged to be most interested, the Aware to make the broadest investments, some of the Cautious to follow at some stage, and the Divergent to adapt for financial reasons instead of environmental ones (see also Vainikka and Saastamoinen, 2026). In such cases, societies must offer equal possibilities for the Unsure and those without the means to keep up with the transformations.

These findings are fundamental to understanding people's attitudes toward societal change. While people with the strongest opinions seem far more likely to express them in public, such polarised views affect the social space shared by all. They may persuade others to believe that society is noticeably more divided on such issues than it is. The mismatch between social media discourses and the sizes of the attitude groups is evident in our combined data. On a positive note, it may be worth exploring, in further research and policy actions, how we could better communicate the variety of attitudes to make the silent majority of concerned people stand out more. For this aim, it is also crucial to be sensitive to the observed regional and social dynamics behind the individuals' attitudes and opinions to recognise the potentials for change but to also be sensitive of the everyday practices of convenience that restrains change (Della Bosca, 2023; Mewes et al., 2024).

Finally, this paper seeks to provide a platform for empathetically discussing climate change. Climate action and policies need constant deliberation and discussion, and only by understanding different motivations, everyday obstacles, spatialities, fears, and hopes of people can any society transition into a decarbonised future.

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CRediT authorship contribution statement

Joni Tuomas Vainikka: Writing – review & editing, Writing – original draft, Visualization, Validation, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Joonas Lindfors:** Writing – original draft, Formal analysis, Data curation, Conceptualization. **Sara-Ellen Laitinen:** Writing – original draft, Methodology, Formal analysis, Data curation. **Eveliina Salmela:** Writing – original draft, Methodology, Formal analysis, Data curation. **Teemu Kemppainen:** Writing – original draft, Validation, Methodology. **Anne Toppinen:** Writing – original draft, Funding acquisition, Conceptualization. **Venla Bernelius:** Writing – original draft, Funding acquisition, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Data availability

Available from the corresponding author upon a reasonable request that does not contradict the Privacy Notice for the Survey.

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