

An Exploration of Youth Attitudes on Climate Change in Alaska and Northern Canada

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ABSTRACT. In this paper, we present the results of a 2023 survey, administered to youth (N=519) between the ages of 16 and 24 in Alaska (N=266) and northern Canada (N=253), that assessed young people's attitudes on climate change and their sense of personal agency to enact positive change. This survey reveals several key aspects of Arctic youths' beliefs and provides a baseline to inform future research. We found higher levels of concern among Arctic youth compared to young people in studies conducted in other non-Arctic regions. Several significant demographic differences were noted, particularly differences between genders by country of residence. Our findings demonstrate that Arctic youth hold nuanced views on climate change, recognizing both its potential economic benefits and environmental risks.

Keywords: Arctic; climate change; youth; participation; attitudes; community

RÉSUMÉ. Dans cet article, nous présentons les résultats d'une enquête réalisée en 2023 auprès de jeunes (N=519) âgés de 16 à 24 ans en Alaska (N=266) et dans le nord du Canada (N=253). Cette enquête visait à évaluer les attitudes des jeunes vis-à-vis du changement climatique et leur motivation personnelle à introduire des changements positifs. Cette enquête a permis de faire ressortir plusieurs aspects importants sur les convictions des jeunes de l'Arctique, en plus de servir de référence pour éclairer les recherches futures. Nous avons constaté des degrés de préoccupation plus prononcés chez les jeunes de l'Arctique que chez les jeunes ayant participé à des études dans des régions autres que l'Arctique. Plusieurs différences démographiques importantes ont été remarquées, plus particulièrement des différences entre les genres par pays de résidence. Nos constatations démontrent que les jeunes de l'Arctique détiennent des vues nuancées sur le changement climatique et qu'ils reconnaissent à la fois ses retombées économiques et ses risques environnementaux potentiels.

Mots-clés : Arctique; changement climatique; jeunes; participation; attitudes; communauté

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INTRODUCTION

The effects of climate change are far ranging and are placing at risk the livelihoods, health, and well-being of Arctic residents (Almonte, 2023). Among the most vulnerable are Arctic youth, whose futures will be affected most directly (MacDonald et al., 2015) and who will bear the greatest cost of political inaction (Huntington et al., 2019). Despite being at the greatest risk, the opinions and views of young people are often unaccounted for and have had little sway in climate policy. This exclusion has been attributed to several factors, including the underrepresentation of youth in local decision making (Helliesen, 2022), their limited understanding of how to best influence climate policy (Chan et al, 2021), their limited participatory power (Hickman et al., 2021), and the disempowering effects of tokenism, which can undermine youth activism by affording only superficial opportunities for youth engagement in policy making (Ingaruca, 2022).

In light of these challenges, calls have been made for “[s]tates, governmental authorities, corporations, research institutions and civil society to weigh heavily the messages, priorities, and perspectives of youth and to empower them for leadership and success” (ICC, 2023). Because Arctic youth offer unique perspectives and approach the challenges of climate change differently than people in other age groups, their involvement in climate action is considered critical to ensuring the long-term resilience of Arctic communities (CAFF, 2021).

While it is safe to assume Arctic youth have witnessed the effects of climate change, albeit from local vantage points, we cannot assume that all Arctic youth have a common opinion about its effects or their responsibility to enact change, or their ability to do so. Young people in the Arctic are neither monolithic, nor do they espouse a single perspective on climate change (Dupuis-Déri, 2021). Rather, the attitudes of youth will vary depending on location and

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positionality (Borojevic et al., 2017). Yet there exists a near ubiquitous characterization of Arctic youth as either climate victims (Sanson and Bellemo, 2021) or climate fighters (Trihartono et al., 2020) that limits the true scope and scale of their views. Characterized in such ways, the attitudes of youth become conflated, which can obfuscate the possibility of alternative or potentially conflicting opinions about climate change. Recognizing the need to look beyond prescriptive characterizations, this research set out to identify the varied ways some young people in the Arctic view climate change.

In this paper, we present the results of a 2023 survey that assessed youth attitudes on Arctic climate change and their sense of personal agency to enact positive change. This survey, administered among youth between the ages of 16 and 24 in Alaska and northern Canada, was an initial stage of research supported by the Finnish Foreign Ministry under the title Youth and Indigenous Peoples' Involvement in Climate Change Adaptation in the Arctic and Barents Region (ACAF, 2023). Survey results will be used to inform future research activities, including workshops with Arctic youth, youth exchange opportunities, and delivery of parallel surveys in other Arctic and Barents regions. The overall objective of our research is to promote involvement of Arctic youth in the design and practical implementation of climate change adaptations that reflect their future aspirations.

Literature Review

Globally, we are witnessing an invigoration of climate activism among youth, with Indigenous youth key among them (Daly, 2022). Popularized by the efforts of Greta Thunberg, youth around the world have become ardent proponents of climate action (Lee et al., 2020). While young people have often been excluded from traditional decision-making institutions, they are proving capable of expressing their voices in unique and impactful ways (Conner et al., 2016; O'Brien et al., 2018). This includes youth from low- and middle-income countries, who may lack access to national and international platforms, but are exercising other forms of public expression with direct impact on their lives (Checkoway, 2011). Some suggest this form of engagement is an important stage for youth as they become more civic minded (Flanagan and Levine, 2010) and politically engaged later in life (Ballard et al., 2019).

This is true for the Arctic, where youth are positioning themselves on the front lines of the climate fight. This was demonstrated most recently during the 2025 Arctic Youth Conference: Empowering Youth in Arctic Futures. This inaugural conference was attended by nearly 300 young people from across the Arctic who, over three days of hosted sessions, facilitated workshops and participated in panel discussions to voice their concerns and ideas, share their stories, and learn from each other. The format was designed by and for Arctic youth and was a response to the tokenism they have traditionally experienced during other Arctic

forums (AYC, 2025). The conference was supported by the Norwegian Chairship of the Arctic Council (2023–25) and was used as an international platform for Arctic youth to address the challenges and opportunities presented by the rapidly changing Arctic. Indeed, a clear message coming out of the conference was that any chance of combating the current climate crisis will require the involvement of youth. By engaging in national and international platforms, youth are cultivating leadership skills that will enable them to confront the challenges their communities face (Aylward et al., 2013).

Ample evidence shows that Arctic youth, including Indigenous youth, are committed to achieving climate justice in the Arctic (Mackay et al., 2020; AYN, 2021). Blaxekjær et al. (2018) have suggested that young people in the Arctic have the locally relevant skills, as well as an innovative edge that, when combined with their desire for sustainability, makes them uniquely qualified to lead such efforts. These skills will be critical as the impacts of climate change become more apparent and the pressures on Arctic peoples become even more complex. For example, as climate change reduces the extent of Arctic sea ice, we are witnessing a concomitant increase in Arctic shipping and heightened interest in developing the Arctic's once inaccessible natural resources. While these changes might bring new economic opportunities, they may also intensify impending development challenges (Mineev et al., 2020; Middleton et al., 2021). Challenges may include, for example, fewer youth taking up traditional occupations (e.g., hunting, fishing) (Olsen et al., 2016), with some deciding to relocate to urban centres to take advantage of new training and employment opportunities (Karlisdóttir and Jungsborg, 2015). The decision to leave may also be hastened by the powerlessness some youth may feel about their prospects for shaping a future that reflects their own hopes and desires (Roanova-Smith, 2021), or by their despondency at decades of government policies that have been imposed on, rather than developed by, Arctic youth and their communities. (Korchak et al., 2019; Stammler and Toivanen, 2021; Kettunen, 2022). Coates (2020) and others (Middleton et al., 2021) warn that these are some of the inevitable challenges youth will need to confront in the future.

The vulnerability of the Arctic to the negative impacts of climate change, alongside rapid cultural and economic shifts, have left the region with an urgent need of leaders with a vision for a more sustainable Arctic future (Gad et al., 2017; Petrov et al., 2017). Yet beyond the participation of youth in Arctic forums, our understanding of the perspectives and attitudes of Arctic youth towards climate change, and sustainable development more generally, is limited. While broader polling of young people on issues of climate change has been conducted at national (Ipsos, 2021) and global scales (United Nations, 2023), these studies fail to disaggregate Arctic data from the more populated regions of the south. With few exceptions (e.g., MacDonald et al., 2013; Kowalczewski and Klein, 2018), much of what

we know about youth perspectives and attitudes on Arctic climate change is derived from small-scale (Jungsberg and Huynh, 2023) and localized studies (Cost and Lovecraft, 2020). While these local studies are of considerable value, we cannot assume those conclusions are applicable to broader societal contexts. Rather, it is important to account for the opinions and attitudes of a more diverse range of youth if we are to reveal patterns of commonality and difference. Taking account of these broader perspectives, as varied as they may be, is a necessary step towards achieving a more sustainable future in the Arctic.

METHODS

Study Area

The study area for this survey included the State of Alaska; Canada's northern territories of Yukon, Northwest Territories; and Nunavut, and the northern provincial regions of Nunavik and Labrador. Alaska is the largest US state by area (1,717,856 km²) and also among the most sparsely populated, with 733,391 residents as of the 2020 census (United States Census Bureau). Beyond the state's most populated centres of Anchorage, Fairbanks, and Juneau, Alaska, residents live in relatively small and remote communities, including 160,287 Alaska Natives who reside in 200 remote villages dispersed across the state (ANTHC, 2024). Like Alaska, the population of northern Canada is largely concentrated in regional centers (i.e., Whitehorse, Yellowknife) with the remaining residents living in small and remote communities. Together, Alaska and northern Canada are home to 901,857 residents, 13% of whom are between the ages of 16 and 24 (United States Census Bureau, 2020; Statistics Canada, 2022). This age group includes 33,682 (29%) who self-identify as Indigenous (Table 1).

Survey Design and Delivery

A review of literature regarding best practices for surveying youth clarified that there are distinct challenges inherent in this process (Fan et al., 2006) and that careful planning is required (Head, 2011; Aceves-Martins et al., 2019). As such, we developed our survey to use age-appropriate language (Arthur et al., 2017), employ simple response types (Dunn and Gómez, 2023), and ask a small number of focused questions (Omran et al., 2019). The final survey was developed following several iterative rounds of testing, which benefited from having youth involvement within the research team. The survey questions were developed independently of any other survey work on the topic, but were informed by our literature reviews on the topics of climate change in the Arctic, Arctic sustainability, economic and cultural change, and youth surveying methods. Once finalized, the survey was organized into two sections: Section I identified the

demographic characteristics of respondents, and Section II explored youth attitudes on climate change, their opinions about personal agency, and the possibility to enact positive change in their communities. Section II consisted of 12 questions formatted on a five-point Likert scale ranging from strongly agree to strongly disagree responses. We chose Likert scales to keep the questions easy for youth to answer, which aligned with recommendations we found in the literature (Dunn and Gómez, 2023).

Surveys were delivered via the Voxco Audience sampling platform. We selected Voxco Audience because the platform's capacity to use other online survey providers to reach difficult-to-reach demographics (i.e., remote Arctic communities), and the platform's experience in administering surveys anonymously and securely. The enhanced reach of Voxco meant that the platform could identify and contact potential respondents by email, where the objectives of the survey were explained. If respondents agreed to participate, they were brought to the survey page, where they could view the project consent form, then advance to the remainder of the survey. This study was approved by the University of Saskatchewan Research Ethics Board (Beh-4090) (6 June 2023). Participants completed an online consent process after they had read about the purpose of the study, confidentiality, risks, benefits of participation, incentives, and data management. Respondents received a nominal incentive in the form of loyalty program points of the respondent's choice in appreciation of their time. The survey was piloted on 15 August 2023, with the full launch occurring on 18 August. The survey remained active for approximately seven weeks and closed on 30 October 2023.

Data Analysis

Once the survey period closed, the research team organized response data in an Excel spreadsheet. All Likert Scale responses were coded as: 1- strongly disagree, 2- disagree, 3- neither agree nor disagree, 4- agree; and 5- strongly agree. We constructed cross-tabulations for each demographic characteristic (i.e., age, ethnicity, education, employment) and then examined the distribution of results for general trends, correlation, and statistical significance. Treating the Likert ordinal scale variables as continuous variables allowed us to conduct a two-tailed independent samples t-test and an Analysis of Variability (ANOVA) test on the dataset. We also conducted a factor analysis to identify groups of questions to which respondents tended to give similar answers. We did the factor analysis in R using the `factanal` function (R Core Team, 2016) and compared diagnostics using the `factor.stats` function in the `psych` package (Revelle, 2024). We calculated both Thompson's and Bartlett's scores and found them to be nearly identical; and thus for conciseness, we only report Bartlett's scores. We selected the analysis with three factors, and the SS loadings for these factors are 2.055, 2.018, and 0.848. While the commonly used Kaiser rule suggests that factors with

TABLE 1. Arctic youth population data.¹

Region	Total population	Youth population Ages 16–24	Indigenous	Non-Indigenous
Labrador	26,655	3085 (12%)	1635 (53%)	1450 (47%)
Nunavik	14,045	2630 (19%)	2577 (98%)	52 (2%)
Yukon	44,160	4125 (9%)	1196 (29%)	2929 (71%)
Northwest Territories	44,826	2940 (7%)	1735 (59%)	1205 (41%)
Nunavut	38,780	5555 (14%)	5222 (94%)	333 (6%)
Alaska	733,391	96,889 (13%)	21,317 (22%)	75,573 (78%)
Total	901,857	115,224 (13%)	33,682 (29%)	81,542 (71%)

¹ <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=9810029201&pickMembers%5B0%5D=4.1&pickMembers%5B1%5D=2.1&pickMembers%5B2%5D=3.3>

SS loadings (i.e., eigenvalues) of greater than 1 should be retained in the analysis (Kaiser, 1960), we determined the inclusion of the third factor was warranted since it provides new information when interpreting results, and its SS loading is close to the benchmark for inclusion. Diagnostics for the analysis include a chi-square value of 28.584, a comparative fit index (CFI) of 0.986, and a root mean square error of approximation (RMSEA) of 0.047.

RESULTS

In total, 519 youth completed the survey. This includes 266 (51%) from Alaska and 253 (49%) from northern Canada. Most respondents (56%) were between 19 and 22 years of age (N=291); 32% were 23–24 years old (N=165); and 12% were 16–18 (N=63). We selected these three age categories to roughly correspond to high school age (16–18), post-secondary undergraduate age (19–22), and post-secondary graduate age (23–24). Male respondents represented 60% (N=319) of the sample, and approximately 32% (N=166) of respondents self-identified as Indigenous. Other demographic data are reported in Table 2.

Respondents were in overwhelming agreement that that Arctic is a special place, with 91% of all respondents either in agreement (45%) or in strong agreement (46%) that the Arctic is deserving of protection. This includes protection from climate change: 84% of respondents said they are concerned by climate change, 78% said climate change is the greatest threat to the Arctic. Notwithstanding this concern, half of all respondents (49%) felt that climate change would prove more beneficial than harmful to Arctic communities in the future. In fact, 51% believed that climate change will create new economic opportunities not currently available. This perception was held even among half of the respondents who indicated involvement in subsistence activities, and nearly all respondents who did not.

It is important to note, however, that there is considerable uncertainty among youth about these effects, with 19% unsure about the beneficial effects of climate change, and 29% uncertain about whether it will bring economic opportunities. The effects of this uncertainty may be compounded by the sense of powerlessness they feel about the future (only 55% agree they can reverse the

impacts of climate change) and the limited faith they have that government officials will act on their behalf (74%) (Table 3).

Despite this pessimistic outlook, the survey results do indicate a general sense of optimism about youths' personal agency and self-worth. The majority (72%) of the respondents feel they are valued members of their communities who can make a positive change (77%). This is made possible because, as respondents (74%) conveyed, local leaders respect youth and their contributions to communities. Although a majority of respondents feel their communities are good places to live (80%), 68% would still choose to relocate if employment opportunities were made available (Table 3).

Cross-tabulations

Our analysis of the survey responses found little variability based on most demographic categories, which may be indicative of shared cultural or demographic influences among youth in Alaska and northern Canada. However, some variations were observed by nation of residence and gender. Since most Indigenous respondents to the survey live in Canada, differences between countries mirror differences between Indigenous and non-Indigenous respondents in most cases.

Chi-squared tests indicate that nationality has a statistically significant relationship with all but one of the climate change questions, the exception being the statement regarding the action of government leaders. One point of broad agreement is concern about the impacts of climate change in the Arctic, as a clear majority of both Canadian and Alaskan respondents indicated that they have a high degree of concern. Both respondent groups overwhelmingly agreed that their government leaders were not taking enough action to deal with those impacts.

Despite reporting similar views, respondents from the two countries had varied responses to questions about the possible impacts of climate change. Most Canadian respondents indicated that they were concerned about the impacts of climate change but felt it may result in positive impacts for their communities, particularly in terms of economic development. Alaska residents, meanwhile, held divided opinions about these statements. When compared

TABLE 2. Survey demographics.

Demographics	Description	Canada	Alaska	Total
Region	Alaska	(0) 0.0%	(266) 51.3%	(266) 51.3%
	Yukon	(74) 14.3%	(0) 0.0%	(74) 14.3%
	Northwest Territories	(58) 11.2%	(0) 0.0%	(58) 11.2%
	Nunavut	(40) 7.7%	(0) 0.0%	(40) 7.7%
	Nunavik	(33) 6.4%	(0) 0.0%	(33) 6.4%
	Labrador	(48) 9.2%	(0) 0.0%	(48) 9.2%
	Total	(253) 48.7%	(266) 51.3%	(519) 100.0%
Age	16–18	(35) 6.7%	(28) 5.4%	(63) 12.1%
	19–22	(150) 28.9%	(141) 27.2%	(291) 56.1%
	23–25	(68) 13.1%	(97) 18.7%	(165) 31.8%
Gender	Male	(159) 30.6%	(155) 29.9%	(314) 60.5%
	Female	(94) 18.1%	(108) 20.8%	(202) 38.9%
	Other	(0) 0.0%	(3) 0.6%	(3) 0.6%
Ethnicity	Non-Indigenous	(114) 22.0%	(239) 46.1%	(353) 68.0%
	Alaska Native	(10) 1.9%	(24) 4.6%	(34) 6.6%
	Inuit	(88) 17.0%	(3) 0.6%	(91) 17.5%
	First Nations	(30) 5.8%	(0) 0.0%	(30) 5.8%
	Métis	(11) 2.1%	(0) 0.0%	(11) 2.1%
	Total Indigenous	(139) 26.8%	(27) 5.2%	(166) 32.0%
Urban/Rural	+1000 residents	(171) 32.9%	(246) 47.4%	(417) 80.3%
	-1000 residents	(82) 15.8%	(19) 3.7%	(101) 19.5%
Current student	Yes	(112) 21.6%	(97) 18.7%	(209) 40.3%
	No	(138) 26.6%	(167) 32.2%	(305) 58.8%
Level of education	Bachelor's degree or higher	(136) 26.2%	(97) 18.7%	(233) 44.9%
	Some post-secondary	(77) 14.8%	(67) 12.9%	(144) 27.7%
	High school diploma/equivalent	(36) 6.9%	(83) 16.0%	(119) 22.9%
	None of the above	(2) 0.4%	(16) 3.1%	(18) 3.5%
	Other	(2) 0.4%	(3) 0.6%	(5) 1.0%
Employed	Yes	(104) 20.0%	(190) 36.6%	(294) 56.6%
	No	(146) 28.1%	(75) 14.5%	(221) 42.6%
Subsistence involvement	Yes	(80) 15.4%	(129) 24.9%	(209) 40.3%
	No	(171) 32.9%	(135) 26.0%	(306) 59.0%

with the Canadian responses, Alaskan youth were less optimistic that climate would bring new economic opportunities, with most (62%) Alaska youth feeling climate change will be more harmful than beneficial for their communities (Table 4). Lastly, when asked about their sense of personal agency in reversing the impacts of climate change, it was the Canadian respondents who gave more pessimistic responses, with a majority agreeing that there was nothing they could do to make a difference.

Apart from national differences, we found the greatest variation between male and female respondents. One commonality between male and female respondents was a shared concern about climate change, with over 80% of each demographic agreeing or strongly agreeing that they were very concerned about the impacts of climate change in the Arctic. But while a clear majority of male respondents believed that climate change will bring more benefits than harm for their communities, including economic opportunities, the views of the female respondents were generally divided.

Similar gender-based variation was found in response to one's feeling of being a valued member of their community.

Canadian respondents report feeling more valued in their communities than their Alaskan counterparts, with as many as 87% believing their contributions are valued by community leaders (Table 4).

Finally, we found that youth who are concerned about the impacts of climate change in the Arctic often feel they have little agency to reverse its impacts: 84% of youth are very concerned about the impacts of climate change, with 55% feeling there is nothing they can do personally to reverse the impacts.

Factor Analysis

The factor analysis identified three groupings of questions (called factors) that tended to elicit similar responses from respondents. That is, if a respondent agreed with one statement in a group, they more often agreed with the other statements in the group. Similarly, if they disagreed with one statement, they more often disagreed with the other statements. The factor loadings are reported in Table 5.

The factor analysis reveals associations between several questions. We offer our interpretation of the factors in the

TABLE 3. Youth survey responses.

Statement	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree		
						Chi-square	p-value
1. The Arctic is a special place that deserves protection	(4) 0.8%	(4) 0.8%	(38) 7.3%	(232) 44.7%	(241) 46.4%		
2. I am very concerned about the impacts of climate change in the Arctic	(14) 2.7%	(17) 3.3%	(53) 10.2%	(261) 50.3%	(174) 33.5%		
3. Climate change is the biggest threat to the sustainable development of the Arctic	(7) 1.3%	(20) 3.9%	(85) 16.4%	(213) 41%	(194) 37.4%		
4. Climate change will be more beneficial than harmful for my community in the future	(67) 12.9%	(93) 17.9%	(101) 19.5%	(138) 26.6%	(118) 22.7%		
5. Climate change will create new economic opportunities in the future	(31) 6%	(71) 13.7%	(150) 28.9%	(139) 26.8%	(125) 24.1%		
6. There is nothing I can do to reverse the impacts of climate change	(44) 8.5%	(95) 18.3%	(93) 17.9%	(168) 32.4%	(118) 22.7%		
7. Government leaders are not doing enough to reverse the impacts of climate change	(17) 3.3%	(27) 5.2%	(86) 16.6%	(199) 38.3%	(189) 36.4%		
8. I feel like I am a valued member of my community	(13) 2.5%	(36) 6.9%	(95) 18.3%	(239) 46.1%	(136) 26.2%		
9. I feel like I can make a positive change in my community	(10) 1.9%	(24) 4.6%	(83) 16%	(227) 43.7%	(174) 33.5%		
10. Leaders in my community value the contributions of youth	(13) 2.5%	(27) 5.2%	(97) 18.7%	(217) 41.8%	(164) 31.6%		
11. I think my community is a good place to live	(4) 0.8%	(18) 3.5%	(80) 15.4%	(242) 46.6%	(171) 32.9%		
12. If I could, I would move to another community where there are more job opportunities.	(11) 2.1%	(51) 9.8%	(102) 19.7%	(182) 35.1%	(173) 33.3%		

TABLE 4. Survey responses by country and gender.

Statement	% Agree or strongly agree	Country		Gender		Chi-square	p-value
		Alaska/USA	Canada	Female	Male		
		Overall	Chi-square	p-value	Chi-square		
The Arctic is a special place that deserves protection	(473) 91.1%	(266) 91.0%	(253) 91.3%	(202) 93.1%	(314) 89.8%	0.125	0.175
I am very concerned about the impacts of climate change in the Arctic	(435) 83.8%	(266) 78.6%	(253) 89.3%	(202) 88.1%	(314) 81.5%	0.010	0.138
Climate change is the biggest threat to the sustainable development of the Arctic	(407) 78.4%	(266) 73.3%	(253) 83.8%	(202) 79.2%	(314) 78.0%	0.019	0.650
Climate change will be more beneficial than harmful for my community in the future	(256) 49.5%	(266) 38.0%	(251) 61.8%	(201) 39.8%	(313) 55.9%	<001	<001
Climate change will create new economic opportunities in the future	(264) 51.2%	(264) 39.4%	(252) 63.5%	(202) 37.1%	(311) 60.5%	<001	<001
There is nothing I can do to reverse the impacts of climate change	(286) 55.2%	(266) 45.1%	(252) 65.9%	(202) 45%	(313) 61.7%	<001	0.006
Government leaders are not doing enough to reverse the impacts of climate change	(388) 74.9%	(266) 72.6%	(252) 77.4%	(202) 79.7%	(313) 71.6%	0.759	0.214
I feel like I am a valued member of my community	(375) 72.3%	(266) 61.3%	(253) 83.8%	(202) 60.4%	(314) 80.6%	<001	<001
I feel like I can make a positive change in my community	(401) 77.4%	(265) 70.9%	(253) 84.2%	(202) 70.3%	(313) 82.4%	<001	<001
I think my community is a good place to live	(413) 80.2%	(266) 71.8%	(249) 89.2%	(202) 73.3%	(310) 85.2%	<001	<001
If I could, I would move to another community where there are more job opportunities.	(355) 68.4%	(266) 57.9%	(253) 79.4%	(202) 66.8%	(314) 69.4%	<001	0.509
Leaders in my community value the contributions of youth	(381) 73.6%	(265) 60.8%	(253) 87.0%	(202) 64.4%	(313) 79.9%	0.063	<001

TABLE 5. Factor analysis loadings.

	Factor 1: Community satisfaction and involvement	Factor 2: Climate change optimism	Factor 3: Climate concern
I am very concerned about the impacts of climate change in the Arctic	0.253	-0.018	0.551
Climate change will be more beneficial than harmful for my community in the future	0.331	0.743	0.072
Climate change will create new economic opportunities in the future	0.354	0.709	0.004
There is nothing I can do to reverse the impacts of climate change	0.129	0.714	0.078
Government leaders are not doing enough to reverse the impacts of climate change	-0.031	0.263	0.670
I feel like I am a valued member of my community	0.806	0.148	0.083
I feel like I can make a positive change in my community	0.613	0.139	0.131
I think my community is a good place to live	0.553	0.126	0.080
If I could, I would move to another community where there are more job opportunities.	0.043	0.478	0.230
Leaders in my community value the contributions of youth	0.637	0.314	0.021
SS Loadings	2.055	2.018	0.848

remainder of this section. Each factor has a broad defining feature, with the first group indicating optimism regarding climate change and the future, the second indicating levels of climate concern, and the third indicating satisfaction and involvement with one’s community.

The first factor contains statements related to community involvement. This grouping also associates perceptions of how much leaders value youth with other aspects of community engagement, which suggests that encouragement from community leaders to engage in climate-related discussions will have a significant impact on youth.

Factor 1: Community Satisfaction and Involvement:

- I feel like I am a valued member of my community.
- I feel like I can make a positive change in my community.
- I think my community is a good place to live.
- Leaders in my community value the contributions of youth.

The second factor contains statements regarding climate change optimism. Included in this group are statements that climate change will be more beneficial than harmful and that it will create new economic opportunities. Interestingly, these two statements are associated with feeling as though one cannot reverse climate change and a willingness to move for job opportunities. This is an unexpected finding, as we assumed that youth who feel unable to reverse climate change would be pessimistic about its effects. Instead, we find that optimism is common even when youth feel unable to personally impact climate trends.

Factor 2: Climate Change Optimism:

- Climate change will be more beneficial than harmful for my community in the future.
- Climate change will create new economic opportunities in the future.
- There is nothing I can do to reverse the impacts of climate change.

- If I could, I would move to another community where there are more job opportunities.

The third and final factor contains statements that express concern about climate change. The fact that these statements comprise their own group instead of being included with the previous group is significant for several reasons. First, it shows that perceptions of benefits and economic opportunities are separate from concern about climate change, which means that many Arctic youth simultaneously recognize that there are concerning aspects of climate change and that there are also potential benefits. This indicates a degree of nuance in Arctic youth’s views. Second, these statements falling into separate factors implies a division among concerned youth; some believe they can make positive contributions in this area, while others have less hope for their future due to their perceived inability to make a difference.

We also note that a recent IPSOS (2021) Canadian youth survey included statements on optimism around climate change and one’s ability to find a solution to climate change. These findings are presented as related opinions, and analogous statements belonging to the same factor in our factor analysis validate this association.

Factor 3. Climate Concern Included:

- I am very concerned about the impacts of climate change in the Arctic.
- Government leaders are not doing enough to reverse the impacts of climate change.

DISCUSSION

Our study results show broad consensus among Arctic youth that climate change is a significant concern for the Arctic. This concern is present in every demographic, including by nation of residence, ethnicity, gender, and age. For comparison, a global study of youth conducted by Hickman et al. (2021) found that in most countries, around 60% of youth are extremely or very worried about climate change. While our study uses a different scale, the fact that

we recorded more than 80% of Arctic youth agreeing that they are concerned about climate change suggests a higher level of worry compared to other regions of the world.

We also see considerable uncertainty among youth about the effects of climate change, with 19% unsure about the beneficial effects of climate change and 29% uncertain about whether it will bring about economic opportunities. This uncertainty could be attributed to a cultural reticence to speculate about the unknown future (Natcher et al., 2007) or may reflect anxiety that some youth feel about the uncertainties associated with climate change. Jones (2023) suggests uncertainty about the effects of climate is common among young people. This uncertainty then creates heightened levels of climate anxiety among youth as they contemplate their uncertain future and personal life choices (Crandon et al., 2024).

Finally, we observe a considerable lack of perceived self-efficacy, with many youth (55%) feeling there is nothing they can do to reverse the impact of climate change. However, we note that the wording used in our survey (“reverse the impact”) is very broad, and different youth may have different beliefs on what constitutes positive climate-related change.

Our most concerning finding was that most youth feel the impacts of climate change are irreversible, which may deter

them from their own commitment to finding long-term solutions. Young people understand the impacts of climate change but do not necessarily feel obliged to engage, or feel capable of engaging, in local actions. This impression has numerous implications, including the entrenchment of despondence and civic complacency that can foster outmigration and participatory vacuums in local leadership. This, in turn, can leave youth susceptible to policies that fail to reflect local realities, adding to the distrust that has long existed between local and external authorities. Yet as the impacts of climate change in the Arctic continue to intensify, so too does the need to engage Arctic youth in decision making. Youth engagement will be critical to effective responses to climate change, where strategic actions depend on participation by diverse populations. We hope the results of this survey can help inform those strategic actions and be used to empower young people of the Arctic to achieve climate-smart solutions in the future.

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