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Article

Participatory research in Canada (2013-2018): a cross-sectional survey of academic researchers

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Participatory research encompasses diverse investigative approaches that engage community, industry, and other nonacademic collaborators. While investigators have examined single studies to explore research processes and impacts, less is known about the participatory research ecosystem. To address this, our team conducted an online survey to characterize academic researchers who conducted participatory research in Canada (2013–8). Of 1135 respondents (response rate = 27.5 per cent), 38.9 per cent identified their research project as participatory. Results of a multivariable logistic regression showed that academic researchers identifying as women or gender diverse, Indigenous or racialized, of older age, funded by the Social Sciences and Humanities Research Council, and those with larger grants were more likely to conduct participatory research. This study contributes to a growing understanding of individual- and institution-level factors that may influence academic researcher engagement with research coproduction. These findings offer new insights to inform science policy, funding priorities, and sustainable participatory research environments in academia.

Keywords: participatory research; knowledge coproduction; science policy; equity; research ecosystems.

1. Introduction

'Participatory research' is an umbrella term encompassing collaborative research that engages community, industry, and other interest holders in scientific inquiry (Cargo and Mercer 2008; Abma et al. 2019; Vaughn and Jacquez 2020). Participatory research spans an array of practices, including action research, citizen science, community-based participatory research, patient-oriented research, knowledge translation models, and open science, that centre partnered inquiry and scientific knowledge coproduction (Fransman 2018; Hecker et al. 2018; Vaughn and Jacquez 2020; Yu et al. 2025). Despite differences in terminology, context, and history, Nguyen et al. (2020) advance a focus on common values, principles, and processes that underscore collaborative approaches over taxonomic labels.

Institutional and academic motivations for involving the public in research reflect diverse values and perspectives (Macq et al. 2020). For example, many approaches to participatory research are rooted in collaborative partnerships with communities and reflect values of inclusion, reflexivity, democratization of knowledge, and actionable inquiry for community benefit (Cornwall and Jewkes 1995; Abma et al. 2019; Groot et al. 2019). These methods emphasize the co-construction of knowledge in partnership with communities affected by research outputs (Green and Mercer 2001; Cargo and Mercer 2008; Jagosh et al. 2012). Indigenous ontologies

emphasize relationship and accountability as imperative to doing research in a good way (Wilson 2008; McGregor et al. 2018; Pidgeon 2019; Lindstrom 2022). Other motivations for supporting nonacademic involvement in research highlight innovation, uptake of results in practice and policy, and increased productivity, recognizing the need for private sector participation to develop technology (Doern et al. 2016) or engaging a broad range of scientists and nonscientists to solve complex societal problems (Beck et al. 2022).

The growth of participatory research across multiple fields of study reflects changes in academia and in its relationship with society (Cornwall and Jewkes 1995; Cargo and Mercer 2008; Jagosh et al. 2012; Fransman 2018; Hecker et al. 2018; Abma et al. 2019; Vaughn and Jacquez 2020). While several influences have previously been explored, including science policy, funding mechanisms, institutional norms, and researcher identities, there is little empirical evidence that explores how the convergence of these factors influences the likelihood of engaging in participatory research (Muhammad et al. 2014; Auerbach et al. 2022; Sprague Martinez et al. 2023). In seeking to better understand participatory approaches, many researchers have examined single studies to explore processes and impacts (Sibley et al. 2022); however, the field lacks meta-perspectives. Meta-research has the potential to inform science policy, as it seeks to rigorously examine research practices to improve how research is conducted, incentivized, and supported (Stevens and Laynor 2023). The focus of the current study is to describe academic researchers in Canada who self-reported conducting participatory research and examine individual- and institution-level factors associated with this activity among recipients of Tri-Agency grants from 2013 to 2018, based on available data. These findings will provide new insights into the conditions that foster community-engaged research, with the potential to inform future science policy and funding priorities.

2. Background

2.1 Factors that influence the participatory research ecosystem

Multiple factors may influence whether researchers choose to engage in participatory research. including personal attributes, characteristics, and motivations, peer and relationship effects, institutional policies and cultures, and funder requirements and polices (Allen et al. 2010; Nokes et al. 2013; Chung et al. 2015; Vuong et al. 2017; Boylan et al. 2019; Besley et al. 2020; Perkmann et al. 2021; Beck et al. 2022; Sibley, Hoekstra, and Kothari 2022). Local, national, and international science policy and resources allocated to scientific endeavours play a pivotal role in shaping the research landscape. This includes the late 20th-century 'participatory turn', a global shift promoting greater citizen involvement in all areas of public interest, including politics, public administration, and scientific inquiry (Saurugger 2010; Boylan et al. 2019; Invernizzi 2020; Hultqvist 2021).

The Canadian Tri-Agency, consisting of the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council of Canada (NSERC), and the Social Sciences and Humanities Research Council (SSHRC), is the primary public funder in Canadian research. The Tri-Agency awards approximately $3.2 billion (CAD) annually and is considered vital to sustaining academic research in Canada (NSERC 2023; CIHR 2024a; SSHRC 2024). In what Brown et al. (2015) refer to as the 'engagement era' in research, public funding opportunities with the Canadian Tri-Agency have evolved such that each council now has funding pools tailored to collaborative and participatory research. In tandem with larger movements for public involvement in research, including knowledge democratization and open science (Brown et al. 2015), the ability of researchers to carry out research is directly linked to funding for scientific inquiry (Ebadi and Schiffauerova 2015). For these reasons, an awareness of research funding priorities and where these funds are allocated is an important consideration in attempting to understand who conducts participatory research in Canada and what shapes these decisions.

Beyond the Tri-Agency funding context, it is also important to consider the influence of academic institutions. Universities are a key research environment in Canada, with the potential to impact participatory research practices. The literature reveals tensions between the practices and values of participatory research and university priorities, particularly in relation to researcher career advancement and maintaining positive relationships with community and industry partners (Allen et al. 2010; Arrieta et al. 2017; Bourgeois and Palmer 2022). For some faculty members, conducting participatory research may be at odds with academic evaluation, promotion, and tenure guidelines (Nyden 2003; Nokes et al. 2013; Arrieta et al. 2017). Measuring the outcomes or impacts of participatory research in the context of traditional academic metrics can be particularly challenging (Savan et al. 2009; Castleden et al. 2015; Hultqvist 2021), especially in research-intensive universities where participatory research is not always incentivized. The top research-oriented universities in Canada engage in 80 per cent of the competitive research nationally and are referred to as the 'U15' (Bégin-Caouette et al. 2021). A recent study of academic criteria for promotion and tenure in U15 faculties of medicine demonstrated that assessment was largely based on traditional criteria such as peer-reviewed publications, authorship order, journal impact, grant funding, and national or international reputation (Rice et al. 2021). Academic researchers need to weigh these factors and others when deciding how to conduct research and contribute to knowledge production.

To understand the multilevel influences that lead a researcher to conduct participatory research, demographics also matter. Canadian researchers have started to investigate participatory research roles, levels of experience with community-based research, geographic locations where participatory research is conducted, funding sources, and project budgets. For example, Flicker et al. (2008) conducted one of the first studies of community-based researchers in Canada, based on a convenience sample of 308 participants. While respondents were not asked demographic questions, Flicker et al. (2008) gathered information about level of experience with community-based research, researchers' roles, geographic location, and funding. A total of 54 per cent of the respondents were based at universities, and almost half of the respondents (48 per cent) were new to community-based research, while close to one quarter (22 per cent) had over 10 years of experience. Seventy-four per cent of the survey participants were located in Ontario. Sixty-two per cent of projects had single-source funding, with budgets ranging from $0 to more than $500,000. In another study, Chudyk et al. (2022) recruited academic researchers who

received funding via the CIHR Strategy for Patient Oriented Research between 2014 and 2019 to participate in a survey on 'engagement activities and perceived impacts' (p. 1). Of the 66 academic researchers who participated, 66 per cent identified as female, 82 per cent were of 'Caucasian/European ancestry', and 42 per cent lived in Ontario (p. 10). Sibley et al. (2023) took a different approach, conducting a retrospective analysis of partnered health research projects funded by a Canadian federal or provincial health research funding organization between 2011 and 2019 that included at least one nonacademic researcher. Using partnered health research projects as their level of analysis, a total of 1,152 projects were included. Approximately 74 per cent of the projects were funded by the federal granting agency, with a mean amount of funding per project of $337,486. Although Sibley et al. did not report on researcher demographics, funded institutions were distributed across provinces as follows: Ontario (31 per cent), British Columbia (21 per cent), Alberta (18 per cent), Quebec (13 per cent), Saskatchewan (9 per cent), Manitoba (5 per cent), and Nova Scotia (4 per cent). The researchers interviewed by Boylan et al. (2019) shared their impressions that there were more women than men in the field, potentially because women were more willing to do the emotional labour required for participatory research or had the extra-academic social skills required for the work.

The current study adds to our understanding of participatory researcher demographics from a broad sample of Tri-Agency-funded investigators. Knowing more about who conducts participatory research in Canada will contribute to a deeper understanding of the participatory research ecosystem and will provide valuable information for institutions, funders, and policymakers who seek to influence participatory research and community engagement within academia.

2.2 Aims

Our team conducted an online survey to identify which academic researchers in Canada conducted participatory research from 2013 to 2018 and to better understand the ecosystem in which they carried out this work. *Shift: Working for Change in Participatory Research* (Shift) is a collaborative research group composed of academic and community researchers who work in participatory research in Canada, specifically community-based research and Indigenous community-based research, patient-oriented research, and citizen science. As such, this study about academic participatory researchers was conceived and executed by insiders, or individuals who 'represent the interests of the people who are the focus of the research' (Vaughn and Jacquez 2020: 1), adding a peer dimension to our research on researchers.

The aims of this project were to (1) characterize academic researchers in Canada who self-reported conducting participatory research and (2) examine how individual- (e.g. gender, race/ethnicity, and academic seniority) and institution-level factors (e.g. U15 affiliation, funding source, and project budget) are associated with participatory research engagement. In addition, we explored variation across CIHR, NSERC, and SSHRC to further understand how contexts may influence the likelihood of engaging in participatory research.

3. Methods

3.1 Data source and study population

To identify a large, diverse sample of researchers and funded projects, we focused on academic researchers who received funding from the Canadian Tri-Agency (CIHR, NSERC, or SSHRC) during a 5-year period: 2013–8. While Tri-Agency funding decisions were publicly available, each funding agency was contacted to obtain information about each project funded between 2013 and 2018 in aggregate form. CIHR, NSERC, and SSHRC shared information on the name of the principal investigator, research affiliation, field of study, project title, project summary, funding competition, funding year, total funding and funding per year, and keywords, although the level of project detail provided by each agency varied.

To focus on projects with enough time and resources to engage community and/or industry partners, we included operating grants (e.g. CIHR project grants, NSERC discovery grants, SSHRC insight grants), team grants, and research chairs. Student scholarships (undergraduate, master's, doctoral), postdoctoral fellowships, training programmes, travel awards, prizes, and Planning and Dissemination grants were excluded because we believed participatory research would be much less likely in these contexts due to limited budget allocations and/or brief timelines. The full list of included and excluded funding programmes is available in Supplementary Material (Tables S1–S3).

3.2 Sample considerations

A total of 49,411 (CIHR 10,458; NSERC 32,812; SSHRC 6,141) funded projects met the study eligibility criteria. Based on our total population and confidence level of 95 per cent, margin of error of 5 per cent, and an estimated response rate of 30 per cent, we aimed to contact 1,380 nominated principal investigators per funding agency (CIHR, NSERC, and SSHRC) to obtain 380 survey responses from each agency (Creative Research Systems n.d.). The sample was identified through a two-step process. In step 1, the goal was to identify a random sample from each of the separate funder datasets for CIHR, NSERC, and SSHRC. Each funding record included information about the nominated principal applicant and a specific research project. The team agreed to send each researcher only one invitation to participate in the survey. For researchers with more than one funded project on the list, the older record was selected. The rationale for this decision was that participatory research can take more time to get underway. By selecting projects that started earlier in time, the team hoped to obtain more detailed information from researchers about their participatory research practices. To identify random participants for each funder, a number was assigned to each project using the Microsoft Excel random number generator. Each list was then sorted from lowest to highest number value, and we identified the first 1,380 references from each funding body.

The next step in the process was to combine the 1,380 records from CIHR, NSERC, and SSHRC identified in step 1. Some researchers are funded by more than one agency. As a result, when the lists from the three funders were combined, some researchers had more than one project on the list. When this happened, we retained only the record with the lowest random number so that each researcher would only receive one recruitment email. For situations where we had to remove a record, a new record was added from the original randomized list for each agency.

3.3 Data collection

3.3.1 Obtaining email addresses. While CIHR, NSERC, and SSHRC provided information about funded projects,

including names and affiliations, the agencies did not provide email addresses. This required us to search online for each investigator's name to locate up-to-date email addresses. While the team was successful in locating many email addresses, in some cases the researcher was retired and did not list an email address, the person was deceased, or it was not possible to find contact information. In these cases, we included the next record in our randomly sorted list to ensure that we reached out to 1,380 survey recipients from each dataset (CHIR, NSERC, and SSHRC).

3.3.2 Conducting survey recruitment. We conducted the survey in two waves, between February and June 2021. Using LimeSurvey, each principal investigator from the random sample received a personalized, bilingual (English/French) message inviting them to participate in the online survey. The email included information about the name of their funded project, the original funder, and a link to the survey in the body of the email. We employed the Total Survey Design Method (Dillman et al. 2014) to maximize survey participation rates by sending follow-up emails to individuals who did not respond to the survey after the initial email on Days 4, 12, and 22. An opt-out link was included in each email message. Our list included twelve undeliverable email addresses for which we were unable to find alternate contacts. Since the survey invitation did not reach these recipients, we did not consider them to be included in our random sample, changing the *n* to 4,128.

3.4 Survey

The Shift survey was developed in consultation with the national research team, which included a mix of academic and community researchers and student research assistants. The project lead worked with members of the team who had experience with survey design to develop the draft survey. Two online meetings were then held with the larger team to seek feedback on the content and format of the questions. In the final stage, after setting everything up in LimeSurvey, we pilot-tested the survey with the full team, inviting each member to complete the survey and to provide any additional comments and suggestions.

The survey was designed to be completed in 10–20 minutes. Respondents were asked to answer survey questions while keeping in mind the specific project identified in the recruitment email. When we conducted the survey in 2021, we used the term 'stakeholder' to refer to nonacademic researchers. Recently the lexicon has shifted, in recognition that the term bears colonial origins that render it problematic (Sharfstein 2016; Akl et al. 2024). Though we intend to use terminology such as 'interest holder' moving forward, the description of our survey below reflects the language we used at that time.

Respondents were presented with the following description of participatory research at the start of the survey:

> Some investigators conduct participatory forms of research where members of the public or other key stakeholders are involved in research beyond roles as participants. For example, patients may be involved in community advisory groups, or community members may be involved in activities such as data collection or dissemination. Though not exhaustive, terms used to describe these methodologies include: community-based research, citizen science, patient-oriented research, or participatory action research. In this survey, we use the term 'participatory' as an umbrella term to refer to these different types of research.

The first survey question then asked principal investigators whether their research was participatory, as follows:

> This survey was sent to you regarding a specific research study. With this study in mind, was this research participatory or not participatory? Please choose only one of the following:
>
> a) The research study 'title of the study' was participatory.
> b) The research study 'title of the study' was not participatory.

If principal investigators responded that their project was participatory, they were then asked a series of sixteen questions about (1) stakeholders (who was involved, terminology used to refer to stakeholders, the types of research activities stakeholders were involved in, and how many stakeholders were involved with the study); (2) remuneration (whether stakeholders were compensated or not, if and how stakeholders were paid); (3) COVID-19 (impact of pandemic on stakeholder participation); (4) whether participants would be willing to participate in a follow-up interview; and (5) researcher demographic information.

If the investigator selected the response, 'The research study ... was not participatory,' follow-up questions were asked to determine whether they engaged in participatory research elsewhere within their broader research programme. For respondents who affirmed that another funded project was participatory, their responses were included if that study was funded by one of the Tri-Agencies between 2013 and 2018.

Surveys were available in French and English, and the recruitment email and consent form made clear that the survey was not anonymous and that responses would be linked to original data provided by CIHR, NSERC, and SSHRC. See Supplementary Material (Shift Survey) for the full survey.

3.5 Measures

Drawing on data from the Shift survey and Tri-Agency funders, our data analysis focused on the following individual and institutional factors: (1) researcher characteristics; (2) academic research environments; and (3) research funding.

For researcher characteristics, relevant survey questions related to gender, race/ethnicity, age, and academic rank were included. There were five gender response options: woman, man, trans or nonbinary, prefer not to answer, and other. For analysis purposes, people who selected woman, trans or nonbinary, and/or other were grouped together into one category (women and gender-diverse researchers).

The race/ethnicity question included sixteen response options. For analysis purposes, people who selected 'Indigenous', 'Black African', 'Black Canadian or African American', 'Black Caribbean', 'East Asian', 'Indo-Caribbean', 'Latin American', 'Middle Eastern', 'North African', 'South Asian', and/or 'South-East Asian' were grouped together into one category (racialized/Indigenous). White Canadian, White American, and White European were grouped together into one category (White). The majority of those who provided a text response to the race/ethnicity question were most often categorized as racialized/Indigenous or White.

The academic rank question included eight options: instructor, assistant professor, associate professor, full professor, postdoctoral researcher, scientist at research institution,

prefer not to answer, and other. For analysis purposes, people who selected 'assistant professor', 'instructor', or 'postdoctoral researcher' were coded as 'assistant/others (new career researchers)'. People who selected 'associate professor', 'full professor', or 'scientist at a research institution' were categorized as 'associate/full professor (senior researchers)'. The role 'scientist at a research institution' lacks a clear indication of seniority and was examined further in the analysis.

For academic research environments, relevant variables focused on whether the institution was research-intensive or not (U15 or not) and the geographic location according to region. The list of research-intensive universities in Canada includes fifteen universities: University of Alberta, University of British Columbia, University of Calgary, Dalhousie University, Université Laval, University of Manitoba, McGill University, McMaster University, Université de Montréal, University of Ottawa, Queen's University, University of Saskatchewan, University of Toronto, University of Waterloo, and Western University (U15-Group of Canadian Research Universities 2020). Using the affiliation data provided by CIHR, NSERC, and SSHRC, each researcher was identified as working at a U15 university or not.

Canada includes ten provinces and three territories. We chose to group these into regions as follows: Atlantic (Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick), Quebec, Ontario, Prairies (Manitoba, Saskatchewan, Alberta), British Columbia, and International (Europe, UK, USA). There were no participants affiliated with a research institution in any of the territories.

Regarding research funding, the relevant variables included which Tri-Agency funded the project (CIHR, NSERC, or SSHRC) and the amount of funding awarded. Funding was reported by total amount. For NSERC, the data provided by the Tri-Agency included funding per year but did not have a separate variable for total project funding. As a result, we looked for this information on cognit.ca (https://cognit.ca). In cases where we could not find the information on cognit.ca, we verified the total funding amount in the NSERC's Awards Database (2022) (https://www.nserc-crsng.gc.ca/ase-oro/index_eng.asp).

3.6 Justification for variable inclusion

The justification for including each of the variables in the analysis is provided in Table 1. These specific justifications are intended to supplement the larger rationale for collecting this information to paint a comprehensive picture of the diversity of participatory researchers across Canada.

3.7 Statistical analyses

Researcher characteristics were described using frequencies with proportions for categorical variables and median and interquartile ranges for continuous variables. Crude comparisons of sample characteristics between participatory researcher and nonparticipatory research groups were performed using chi-square tests (or Fisher's exact tests when expected cell counts were <5) for categorical variables and independent t-tests (or Wilcoxon rank-sum tests for skewed data) for continuous variables.

We examined factors associated with conducting participatory research using both unadjusted and multivariable logistic regression models. Individual and institutional factors included researcher characteristics (age, gender, race and ethnicity, academic rank), academic research environments (U15 affiliation and the geographic region), funding agency (CIHR, NSERC, or SSHRC), and the amount of funding awarded. These factors were selected because they were either publicly available or collected in our survey and were identified as relevant based on existing literature or the authors' subject-matter knowledge; no data-driven variable selection was performed (Heinze et al. 2018).

Unadjusted (crude) odds ratios (ORs) with 95% confidence intervals (CIs) were estimated using separate logistic regression models, each including one explanatory factor at a time. To examine multiple factors together, we used multivariable logistic regression to explore which individual and institutional factors were associated with conducting participatory research. Adjusted ORs with 95% CIs were obtained from a multivariable logistic regression model including all explanatory variables simultaneously. Two sensitivity analyses were conducted: one excluding nonsignificant factors from crude comparisons and another excluding respondents with the role 'scientist at a research institution', as this designation does not consistently reflect seniority. ORs and 95% CIs were reported. SAS software, version 9.4 (SAS Institute Inc.), was used for all the statistical analyses. Statistical significance was assessed using two-sided tests with an alpha level of .05.

3.8 Ethical considerations

Ethics approval was obtained from all the universities affiliated with this project and the research team: McGill University (REB #20-08-002), University of Victoria (REB #20-0413), and Wilfrid Laurier University (REB #6640).

4. Results

4.1 Response rate among academic researchers

A total of 1,135 principal investigators responded to the survey, yielding a response rate of 27.5 per cent (1,135/4,128). Response rates across the Tri-Agency funding groups were 36.1 per cent for SSHRC, 24.0 per cent for CIHR, and 22.5 per cent for NSERC (Fig. 1).

4.2 Proportion of participatory research among academic researchers

The proportion of academic researchers engaged in participatory projects was highest for SSHRC at 45.7 per cent (226/495), followed by CIHR at 39.9 per cent (132/331), and NSERC at 27.2 per cent (84/309) (Table 2). Overall, 38.9 per cent (442) of academic researchers identified their research project as participatory.

4.3 Academic researcher characteristics

Of the 1,135 respondents, the median age was 53 years [Q1–Q3: 46–61]. Respondents were 41.0 per cent women, 50.9 per cent men, and 0.3 per cent trans or nonbinary. Most (74.8 per cent) identified as White, 80.0 per cent held an associate or a full professor rank, and 58.9 per cent were based at U15 institutions. Median project funding was $160K CAD [Q1–Q3: $73K–$332K]. Academic researchers who identified their project as participatory were slightly older (median 55 vs 52 years) and more likely to be women (46.2 per cent vs 29.4 per cent). Regional participatory research engagement ranged from 45 per cent in the Western region to 29 per cent in Quebec. Participatory research projects had higher median funding ($180K vs $150K CAD). Descriptive statistics

Table 1. Justification for variable inclusion.

Variable	Justification for inclusion
Gender, race/ethnicity/Indigeneity	Participatory research necessitates relational, reciprocal, responsive, and care-based emotional labour that is disproportionately expected of women, racialized, and Indigenous scholars. Therefore, gender, race/ethnicity/Indigeneity become relevant variables to include in the analysis.
Age	Age may be related to more experience with research, including increased ability to obtain grants, and more time to develop community relationships and effective research partnerships.
Academic rank	Academic researchers with tenure and/or seniority may be better positioned to engage in participatory research given their career stability and experience. Participatory research is both resource-intensive and time-consuming. Therefore, early career researchers may be encouraged to pursue other forms of research with more timely outcomes.
U15	The Canadian U15 are research-intensive universities recognized for their performance linked to research funding, publications, international partnerships, and doctoral student trainees. With an emphasis on traditional metrics, U15 researchers may be less likely to conduct research than their non-U15 counterparts.
Geographic region	Given that Canadian universities are concentrated in Ontario and Quebec, these regions may wield a higher proportion of participatory researchers than others.
Funding agency	Researchers funded by SSHRC may be more likely to conduct participatory research than others given that SSHRC's commitment to participatory research predates other funding mandates. Stronger institutional mechanisms for participatory research within CIHR may also increase the likelihood of doing participatory research. Based on this line of argument, researchers funded by NSERC may be less likely to conduct participatory research than their counterparts in CIHR and SSHRC.

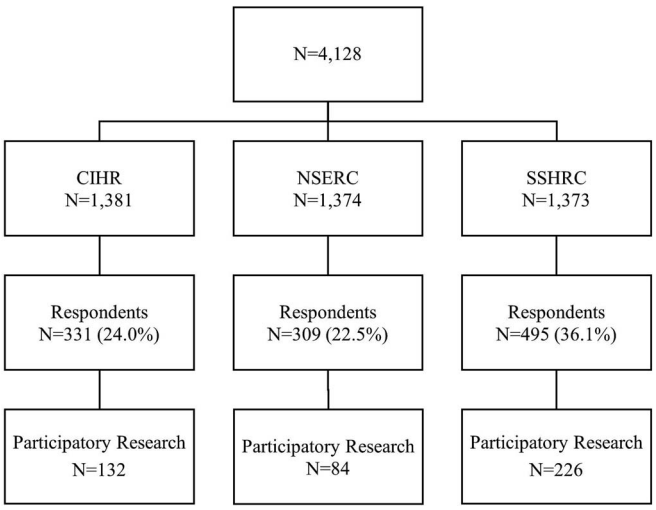

Figure 1. Response rates.

for each funding source (i.e. CIHR, NSERC, and SSHRC) are provided in the online Supplementary Material (Tables S4–S6).

4.4 Academic researcher characteristics associated with participatory research

In unadjusted logistic regression models, several factors were associated with academic researchers identifying their research project as participatory (Table 3). Women and gender-diverse respondents had higher odds of conducting participatory research compared to men (OR: 2.03, 95% CI: 1.58–2.60), as did racialized and/or Indigenous academic researchers compared to White respondents (OR: 1.46, 95% CI: 1.06–2.02). Increasing age (per 5 years: OR 1.09, 95% CI 1.03–1.16) and greater total funding (per $100K: OR 1.03, 95% CI 1.01–1.06) were also associated with higher odds of participatory research. Academic researchers in Quebec had significantly lower odds of identifying their project as participatory compared to those in Ontario (OR: 0.55, 95% CI: 0.41–0.76). SSHRC funding was not significantly associated with participatory research in unadjusted analysis (OR: 1.27, 95% CI: 0.96–1.68), compared with CIHR.

In the adjusted model ($n = 976$), associations remained significant for gender (OR: 1.82, 95% CI: 1.37–2.43), race (OR: 1.81, 95% CI: 1.27–2.58), age (OR: 1.11, 95% CI: 1.04–1.19), total funding (OR: 1.05, 95% CI: 1.02–1.08), and Quebec region (OR: 0.65, 95% CI: 0.46–0.93). SSHRC funding became significantly associated with higher odds of participatory research after adjustment (OR: 1.50, 95% CI: 1.06–2.12). Model fit was acceptable [Hosmer–Lemeshow (H–L) $P = .09$; c-statistic = 0.67]. A sensitivity analysis excluding academic rank and U15 affiliation produced similar results and model fit (H–L $P = 0.24$; c-statistic = 0.67). Our secondary sensitivity analysis, excluding respondents with the role 'scientist at a research institution' due to inconsistent reflection of seniority, yielded similar results (see Supplementary Material Table S7 for details).

Table 2. Characteristics of researchers in the overall sample and stratified by PR.

	Overall $n = 1\,135$	PR $n = 442$	Not PR $n = 693$	*P*-value
Fund Source				<.001
CIHR	331	132 (39.9%)	199 (60.1%)	
NSERC	309	84 (27.2%)	225 (72.8%)	
SSHRC	495	226 (45.7%)	269 (54.3%)	
Age in years, median (Q1–Q3)	53 [46, 61]	55 [47, 63]	52 [46, 60]	.007
Gender				
Women	465	215 (46.2%)	250 (53.8%)	<.001
Men	578	170 (29.4%)	408 (70.6%)	<.001
Trans or nonbinary	3	1 (33.3%)	2 (66.7%)	.99
Prefer not to answer	42	17 (40.5%)	25 (59.5%)	.84
Not responded	48	39 (81.3%)	9 (18.8%)	<.001
Race/ethnicity				
White	849	301 (35.5%)	548 (64.5%)	<.001
Black	20	11 (55.0%)	9 (45.0%)	.21
East Asian	46	18 (39.1%)	28 (60.9%)	.99
Indigenous	9	7 (77.8%)	2 (22.2%)	.03
Latin American	8	1 (12.5%)	7 (87.5%)	.16
Middle Eastern	29	10 (34.5%)	19 (65.5%)	.76
Oceanian	4	1 (25.0%)	3 (75.0%)	.99
South Asian	35	17 (48.6%)	18 (51.4%)	.31
South-East Asian	6	1 (16.7%)	5 (83.3%)	.41
Other	35	18 (51.4%)	17 (48.6%)	.12
Prefer not to answer	60	23 (38.3%)	37 (61.7%)	.99
Not responded	62	47 (75.8%)	15 (24.2%)	<.001
PI rank				.09
Assistant professor	79	23 (29.1%)	56 (70.9%)	
Associate professor	284	113 (39.8)	171 (60.2)	
Full professor	624	222 (35.6)	402 (64.4)	
Scientist at research institution	34	13 (38.2)	21 (61.8)	
Postdoctoral researcher	1	0	1	
Other	59	30 (50.8%)	29 (49.2%)	
Not responded	54	41 (75.9%)	13 (24.1%)	
Regions				.001
Atlantic	71	31 (43.7%)	40 (56.3%)	
Quebec	315	92 (29.2%)	223 (70.8%)	
Ontario	408	174 (42.6%)	234 (57.4%)	
Prairies	202	82 (40.6%)	120 (59.4%)	
West Coast	133	60 (45.1%)	73 (54.9%)	
U15	669	245 (36.6%)	424 (63.4%)	.06
Funds total (in 100K), median [Q1–Q3]	1.6 [0.73, 3.32]	1.8 [0.74, 3.01]	1.5 [0.73, 3.45]	.69

Notes: One researcher identified as both a woman and trans/nonbinary; reported numbers are frequencies and proportion unless otherwise stated. All dollar amounts are reported in CAD. Eighty-eight people did not report age information. *P*-values were calculated using chi-square tests (or exact tests when any expected cell count was <5) for categorical variables, and independent *t*-tests (or Wilcoxon rank-sum test, when data were skewed) for continuous variables, to compare characteristics between PR and non-PR groups. Gender, race, and ethnicity categories were not mutually exclusive. Comparisons were conducted as binary contrasts (e.g. women vs nonwomen, Black vs non-Black, etc.). Q1 = first quartile; Q3 = third quartile. PR = participatory research.

4.5 Missing data considerations

We compared survey respondents with nonrespondents using available Tri-Agency funding data, acknowledging that the variables available from each funder were limited. CIHR respondents and nonrespondents were similar in total grants but differed by region; NSERC groups were similar by region; SSHRC groups were regionally similar but differed in funding (Supplementary Material Table S8). Of the 1,135 respondents, 976 had complete data for all the variables included in the multivariable analysis. Compared to those with incomplete data, they were similar in funding source, age, academic rank, region, U15 affiliation, and total funding, but differed in gender, race, and participatory research engagement (Supplementary Material Table S9).

5. Discussion

5.1 Presenting a snapshot of participatory research in the Canadian research landscape

One of the key findings from this study was that a high proportion (38.9 per cent) of researchers from a national cross-sectional survey identified their research project (funded between 2013 and 2018) as participatory. The proportion of participatory projects was highest for SSHRC (45.7 per cent), followed by CIHR (39.9 per cent), and NSERC (27.2 per cent). The high frequency of self-reported participatory research among SSHRC- and CIHR-funded researchers suggests that funding practices may significantly impact researchers' engagement with participatory approaches. This finding has implications for funding policies: structuring funding

Table 3. Unadjusted (crude) and adjusted odds ratios (ORs) with 95% confidence intervals (CIs) from logistic regression models examining factors associated with conducting participatory research among academic researchers (overall sample across all three funders).

Characteristics	Crude OR [95% CI]	Adjusted OR[a] [95%CI] *n* = 976 (352 PR)	Adjusted OR[b] [95% CI]
Funding source			
CIHR	Ref.	Ref.	Ref.
NSERC	0.56 [0.40–0.79]	0.70 [0.47–1.04]	0.69 [0.46–1.03]
SSHRC	1.27 [0.96–1.68]	**1.50 [1.06–2.12]**	**1.53 [1.09–2.16]**
Age per 5 years	**1.09 [1.03–1.16]**	**1.11 [1.04–1.19]**	**1.11 [1.03–1.18]**
Gender			
Men	Ref.	Ref.	Ref.
Women, trans or nonbinary, or prefer not to answer	**2.03 [1.58–2.60]**	**1.82 [1.37–2.43]**	**1.87 [1.41–2.49]**
Race groups			
White	Ref.	Ref.	Ref.
Racialized and/or Indigenous	**1.46 [1.06–2.02]**	**1.81 [1.27–2.58]**	**1.85 [1.30–2.62]**
PI rank			N/A
Associate/Full	Ref.	Ref.	
Assistant/Others	1.05 [0.73–1.52]	1.10 [0.72–1.67]	
Regions			
Ontario	Ref.	Ref.	Ref.
Atlantic	1.04 [0.63–1.73]	1.04 [0.58–1.89]	1.15 [0.64–2.06]
Quebec	**0.55 [0.41–0.76]**	**0.65 [0.46–0.93]**	**0.66 [0.47–0.94]**
Prairies	0.92 [0.65–1.29]	1.05 [0.71–1.55]	1.01 [0.69–1.48]
West Coast	1.11 [0.75–1.64]	0.98 [0.62–1.55]	1.02 [0.65–1.61]
U15			N/A
No	Ref.	Ref.	
Yes	0.79 [0.62–1.00]	0.78 [0.58–1.04]	
Funds total (in 100K)	**1.03 [1.01–1.06]**	**1.05 [1.02–1.08]**	**1.04 [1.01–1.07]**

Notes: Crude ORs with 95% CIs were estimated using separate logistic regression models, each including one explanatory factor. [a]Adjusted ORs with 95% CIs were obtained from a multivariable logistic regression model including all the explanatory factors; the Hosmer–Lemeshow (H–L) goodness-of-fit test yielded $P = .09$, indicating no evidence of poor model fit. The *c*-statistic was 0.67, suggesting low to moderate discrimination in distinguishing between PR and non-PR among academic researchers. [b]As a sensitivity analysis, we excluded U15 affiliation and PI rank from the model (not significant in crude comparisons), the sensitivity model yielded an H–L test $P = .24$ and a *c*-statistic of 0.67. CI, confidence interval; CIHR, Canadian Institutes of Health Research; NSERC, the Natural Sciences and Engineering Research Council; PR, participatory research; Ref, reference group; SSHRC, Social Sciences and Humanities Research Council.

priorities and programming to support participatory research stands to increase the uptake of this work. Indeed, this is consistent with previous research suggesting that funding influences researcher behaviour in multiple ways, including how research is conducted, its focus, and its impact (Johnson et al. 2014; Sibbald, Tetroe, and Graham 2014; Gläser and Velarde 2018; Arnott, Neuenfeldt, and Lemos 2020; Holmes and Jones 2022). Amending existing mechanisms, including proposal evaluation metrics, eligibility criteria, and funding priorities, to support participatory models could be the next step in fostering engagement-focused funding design across the Tri-Agency.

We anticipated that academic researchers funded through CIHR would be most likely to identify their research as participatory, followed by those funded through SSHRC, with investigators from NSERC being least likely to report conducting participatory research. Engaging community members and other interest holders in research is often expected in public health and health-related fields, and CIHR has established mechanisms for research coproduction, including the option to include community members as principal knowledge users, and co-knowledge users, and to incorporate compensation for research team members within project budgets (Sibbald, Kang, and Graham 2019; CIHR 2024b). In addition, they have multiple funding programmes that require and/or prioritize community partnerships, patient partner engagement, and collaboration. Participatory research practices are also common in the social sciences but are still gaining ground in the humanities. In addition, while SSHRC has clear pathways to coproduced research through Partnership Engage Grants, and Partnership Grants, there are limited opportunities for coleadership within the application structures and no options for paying coapplicants on research teams. Finally, we thought that researchers funded through NSERC would be less likely to identify their research as participatory and were most surprised by the number of NSERC researchers who identified their research as participatory. While citizen science is a visible and established approach to research coproduction in the natural sciences and engineering, models or examples of other types of participatory research were more difficult for our team to envision. With the majority of Shift team members based in health and social sciences, it is perhaps not surprising that we underestimated the level of participatory research reported by NSERC-funded investigators. In addition, our relative lack of familiarity with NSERC funding programmes likely also contributed to our assumptions about how funding initiatives and expectations might have been influencing NSERC investigator behaviour.

The levels of engagement in participatory research reported in the Canadian context challenges the perception that participatory research is limited to niche specializations. The collective depth and breadth of participatory research occurring across funding streams suggests that research that engages community and industry interest holders is widespread across diverse academic contexts. However, these findings also underscore the need to better understand the individual and institutional levers—including federal science policy and funding mechanisms—that influence decisions to pursue participatory research.

That participatory research was associated with higher funding per grant raises questions. For example, do these projects have larger budgets because of the higher costs associated with participatory research compared with other methodologies? These could potentially include expenses such as co-researcher compensation, costs associated with community collaboration and space, travel to foster relationships with co-researchers, and longer timelines to conduct participatory research (Minkler et al. 2003; Savan et al. 2009; Hoeft et al. 2014; Sibbald et al. 2019). Our team also queried whether access to larger funding awards could potentially shield participatory researchers from some of the institutional disadvantages of doing participatory research linked to career advancement, recognition, and alignment with academic promotion mechanisms (Castleden et al. 2015; Arrieta et al. 2017; Boylan et al. 2019). More research is needed to better understand who is more likely to apply for funding for participatory research projects, how funding is allocated, and what kinds of financial commitments and funding strategies are necessary to advance the field.

5.2 Characteristics of researchers who choose to do participatory research

Another important finding from this study is that certain characteristics may increase the likelihood that a researcher will conduct participatory research in Canada: racialization and/or Indigeneity, being a woman or gender-diverse researcher, older age, funding from SSHRC, and higher project funding budgets. Our research team hypothesized that researchers who experience marginalization according to race/ethnicity or gender may be more likely to conduct participatory research given lived experience, community connections, or alignment with the social justice underpinnings of the Southern tradition of participatory research, which seeks to redistribute power and catalyse social change (Wallerstein and Duran 2018; Nguyen et al. 2020). Our findings support this hypothesis. Racialized and/or Indigenous researchers were indeed more likely to identify their research as participatory, which aligns with Indigenous research paradigms that emphasize relationality, reciprocity, and accountability (Wilson 2008; Lindstrom 2022). Women and gender diverse researchers were also more likely to engage in participatory research, consistent with critical feminist paradigms that foreground collaboration and collective care (Chiarelli-Helminiak et al. 2023). These findings support existing scholarship that recognizes the uneven distribution of emotional labour in academia, disproportionately expected of women, racialized, and Indigenous scholars (Boylan et al. 2019; Gordon et al. 2024). While further investigation is needed to understand these groups' specific motivations for engaging in participatory research, they may feel a greater ethical imperative to engage interest holders in reciprocal and relational research. They are also more likely to rate the influence of engaging interest holders as significant (Sibley et al. 2025). Engagement can be a source of meaningful scholarship while further compounding issues related to high workload and employment precarity in academic spaces that undervalue participatory research (Vander Kloet and Wagner 2024). This has the potential to entrench marginalization and existing inequities. The association of experiences of marginalization with research methods rooted in democratizing knowledge and influence in academia should not be overlooked. These findings suggest a need to re-evaluate how labour is distributed and valued in academia to better support participatory research practices.

We were interested to see that researcher gender (women, trans, and nonbinary) increased the likelihood that a researcher identified their research as participatory in the CIHR and SSHRC cohorts, but not in the NSERC cohort. This difference may be due to the limited sample size when exploring relationships within each funding source. On the other hand, women and gender-diverse researchers were less represented in the NSERC cohort: 22 and 0 per cent, respectively, compared with 42 and 0.3 per cent in CIHR, 52.1 and 0.4 per cent in SSHRC, and 41 and 0.3 per cent in the total sample. Many of these variables are tied to equity initiatives developed as part of larger federal initiatives such as the *Tri-Agency Equity Diversity and Inclusion Action Plan for 2018–2025* (Government of Canada 2018). This plan includes two objectives: (1) 'fair access to Tri-Agency research support' and (2) 'equitable participation in the research system' (pp. 2–3). The lack of readiness of Canadian universities to recognize, support, and advance the scholarship of racialized and Indigenous scholars has been documented (Castleden et al. 2015; Henry et al. 2017; Vander Kloet and Wagner 2024). Gendered barriers to career advancement in STEM fields have also been recognized in the literature, and women scientists have identified a range of perspectives on systemic inequalities in the field (Bird and Rhoton 2021). This sparked our curiosity about field-specific research environments and academic conditions for participatory research and how they might differ across disciplines. These differences might also be reflected in the motivations (and incentives) for conducting participatory research. These questions illuminate areas for further inquiry about who conducts participatory research and why, as well as how, the participatory research ecosystem influences researchers' choices to conduct participatory research.

5.3 Influence of academic research environments on participatory research

It was difficult to predict how U15 affiliation might be connected with participatory research practices. On the one hand, investigators from research-intensive universities might be less likely to identify their research as participatory due to a focus on traditional metrics (Kennedy et al. 2009; Nokes et al. 2013; Perkmann et al. 2021). On the other hand, with an increasing emphasis on research impact, U15 researchers might also be more likely to adopt research coproduction (Brauer et al. 2025). Our findings suggest a more complex reality, pointing to factors beyond this broad institutional classification, including larger factors influencing the participatory research ecosystem.

6. Strengths and limitations

This study offers a preliminary look at which academic researchers funded by CIHR, NSERC, or SSHRC conduct participatory research in Canada. The distribution of respondents across the Tri-Agencies highlights the need to better understand how practices might be similar or different depending on specific subfields or types of participatory research. Each of the Tri-Agencies reports field of study differently, including a large range of subjects and keywords.

In addition, although SSHRC includes subject information for each funded project in their Funding Decisions Database, they did not share this information in the compiled data files. To compare results by discipline, a coding strategy that could be used across funders would need to be developed.

Surveying a national sample of publicly funded researchers, we obtained results about the frequency of participatory research in Canada and individual researcher characteristics associated with who chooses to carry out participatory research. The existing evidence does not provide a full picture of the demographics of academics conducting participatory research; the current study enhances our understanding of this work. Notedly, this picture is limited by sampling and participation constraints; however, it motivates further inquiry into the area with important implications related to funder and institutional levels. Another limitation stems from the fact that participatory research was identified by the researchers themselves, across disciplines. However, we did not ask researchers which labels they used to refer to their participatory research practices, such as patient-oriented research, citizen science, or community-based research. Knowing this would allow for a more detailed analysis in future studies. Moreover, different factors (e.g. gender vs U15 affiliation) may have varying relevance to the probability of a researcher conducting participatory research across funding streams. However, the relatively low response rate prevented us from determining whether these differences arose from inherent variations across funders or were simply due to sample size limitations.

In addition, as with any observational study, we could not determine whether the factors identified as related to participatory research are causal. In other words, it remains unclear whether these factors influenced researchers' decisions to engage in participatory research or whether researchers already involved in participatory research tend to possess these traits. While these results are novel, they prompt numerous follow-up questions regarding researchers' fields of study, motivations for engaging in participatory research, specific participatory research practices, and perceptions of how state, institutional, environmental, and individual influences may support or disincentivize decisions to engage in participatory research, all of which we were not able to capture in this study. Providing a 'snapshot' in time, these results are difficult to contextualize on their own. And yet we are excited to contribute to a growing body of meta-research that seeks to understand participatory research practices and the influence of individual- and institution-level factors.

Finally, our analysis is limited by the variables available in our datasets, which were drawn from publicly accessible funding information from CIHR, NSERC, and SSHRC, and our survey instrument. These variables reflect the scope of data we could obtain within the design of this study. As with all observational quantitative research, the potential for residual confounding cannot be ruled out. Due to limited sample sizes, we were unable to analyse experiences of gender-diverse researchers and specific subgroups within the racialized and Indigenous categories separately. In addition, our demographic questions did not include items related to disability or socioeconomic status. This constrains the nuance of our findings, which may overlook important differences shaped by distinct structural inequities. Future research should aim to recruit larger, more diverse samples to support more granular analysis of these populations.

7. Conclusion

This study enhances our understanding of who conducts participatory research in Canada by providing insights into the research ecosystem and raising questions about how researchers navigate the challenges of the participatory turn. Several individual- and institution-level variables, including gender, race/ethnicity, age, funding, funding source, and institutional (U15) status, influenced the likelihood of academics identifying their research as participatory in Canada. These findings have important implications for institutions, funders, and policymakers seeking to bolster engagement in participatory research. Future research could build on these findings by assessing the impact of institutional policies in supporting participatory research, longitudinally examining how the evolving policy landscape influences participatory research over time and identifying opportunities to enhance science policy and research funding priorities. As the profile of Canadian participatory research continues to grow, understanding the ecosystems that support it will be integral to promoting collaborative scholarship.

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Author contributions

Zack Marshall (Conceptualization, Data curation, Funding acquisition, Investigation, Methodology, Project administration, Supervision, Visualization, Writing—original draft, Writing—review & editing), Meng Wang (Data curation, Formal analysis, Methodology, Validation, Visualization, Writing—original draft, Writing—review & editing), Veronica Benz (Investigation, Project administration, Writing—original draft), Batool AlMousawi (Data curation, Writing—original draft), Catherine Worthington (Conceptualization, Funding acquisition, Methodology, Writing—review & editing), Melody Morton Ninomiya (Conceptualization, Funding acquisition, Investigation, Writing—review & editing), Darren Lauscher (Conceptualization, Funding acquisition, Writing—review & editing), Sherri Pooyak (Conceptualization, Funding acquisition, Writing—review & editing), Sarah Switzer (Conceptualization, Funding acquisition, Writing—review & editing), James Watson (Conceptualization, Funding acquisition, Writing—review & editing), Ciann Wilson (Conceptualization, Funding acquisition, Writing—review & editing), Jennifer Demchuk (Conceptualization, Funding acquisition, Writing—review & editing), Stephanie E. Coen (Conceptualization, Writing—review & editing), and Tanvir C. Turin (Conceptualization, Funding acquisition, Investigation, Methodology, Writing—review & editing).

Supplementary data

Supplementary data is available at *Science and Public Policy Journal* online.

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Data availability

A deidentified version of the data underlying this article will be shared on reasonable request to the corresponding author.

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