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Determinants and consequences of climate commitment among facilitators of environmental awareness workshops: A Mixed-Methods Exploratory Study

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We use this protocol and it's working

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Abstract

Background. Climate activism is an expanding form of civic engagement in response to the ecological crisis. Among these initiatives, the facilitation of participatory environmental workshops (e.g., climate, biodiversity, oceans, food systems, digital sustainability) has emerged as a structured and accessible way to disseminate knowledge, foster collective awareness, and promote pro-environmental behavior. In France alone, more than 150 different workshop formats exist, involving thousands of volunteer and professional facilitators. However, little is known about the psychosocial determinants of such engagement, nor about its behavioral and psychological consequences for facilitators themselves. This study aims to explore (1) the determinants of sustained engagement as a facilitator of environmental awareness workshops, and (2) the associated outcomes in terms of pro-environmental behaviors and climate-related emotions.

Methods. This cross-sectional mixed-methods study will include (a) an online survey distributed to facilitators of environmental awareness workshops across France, with the objective of reaching at least 500 respondents, and (b) semi-structured interviews with a subsample of approximately 30 participants. The quantitative component will assess multiple dimensions of facilitation engagement, pro-environmental behaviors (mitigation, adaptation, and collective action), climate-related emotions (including eco-anxiety, hope, and helplessness), as well as psychosocial variables such as ecological identity, self and collective efficacy, sense of community, and political orientation. The qualitative component will provide in-depth insights into facilitators' motivations, perceived barriers, and subjective experiences of the personal and collective impact of their involvement.

Expected Results. The study will generate a multidimensional profile of facilitator engagement and identify key psychosocial predictors of sustained involvement. It will also document potential behavioral and psychological outcomes of facilitation, thereby informing strategies to better support, recognize, and sustain volunteer-driven environmental engagement.

Materials

French Version

Questionnaire 1 — Engagement en tant qu'animateur·rice d'ateliers environnementaux

Objectif : Mieux comprendre votre engagement comme animateur·rice d'ateliers de sensibilisation environnementale (ex. Fresque du Climat, 2 Tonnes, Atelier Océane, etc.).

Instructions

- Sélectionnez tous les ateliers que vous animez actuellement ou avez animés au moins une fois.
- La liste comporte plus de 120 ateliers. Si un atelier manque, choisissez « Autre » puis précisez-le.
- Pour chaque atelier sélectionné, répondez aux questions suivantes.

Items

- Liste des ateliers : plus de 120 propositions + option « Autre » à préciser par écrit.
- Combien d'atelier(s) avez-vous animé ? (variable continue 1–800)
- Depuis combien de temps avez-vous commencé à animer des ateliers ? (1–120 mois)
- Quand avez-vous animé un atelier pour la dernière fois ? (1–120 mois)
- En moyenne, à quelle fréquence animez-vous des ateliers ? (1 à 3 fois par an / Tous les 2 mois / Environ 1 fois par mois / Plusieurs fois par mois / Plusieurs fois par semaine)
- Combien de formation(s) avez-vous réalisées pour former de futurs animateurs ? (0–300)
- Êtes-vous rémunéré·e pour réaliser un ou plusieurs de ces ateliers ? (Oui/Non)

Questionnaire 2 — Habitudes (comportements pro-environnementaux, 12 derniers mois)

Items et échelles

Échelle 1 (jamais) à 5 (le plus souvent possible)

- Limiter la température du logement à 19 °C l'hiver et la climatisation si vous en possédez une à 26 °C l'été.
- Limiter la consommation de viande à 300 g/semaine.

- Se déplacer à vélo, à pied, en covoiturage ou en transports en commun plutôt qu'en voiture.
- Éviter l'avion pour ses loisirs.

Réponse binaire 0=Non, 1=Oui

- Effectuer un engagement dans une association de défense de l'environnement.
- Participer à une action de désobéissance civile.
- Parler à d'autres personnes des questions environnementales.
- Boycotter un produit ou une entreprise.
- Préparer une trousse d'urgence pour le logement.
- Se renseigner sur l'exposition de son logement aux risques naturels.
- Rechercher des informations pour préparer son logement aux risques climatiques.
- Vérifier et suivre activement les prévisions météorologiques.

Questionnaire 3 — Vécu personnel lié au changement climatique (Éco-anxiété)

Consigne

Au cours des 2 dernières semaines, fréquence à laquelle vous avez été perturbé·e par les problèmes listés.

Items (exemples)

1. Se sentir nerveux·se, anxieux·se, à cran.
2. Être incapable de cesser de s'inquiéter ou de contrôler ses inquiétudes.
3. Se faire trop de souci.
4. Se sentir effrayé·e.
5. Être incapable d'arrêter de penser au changement climatique à venir et à d'autres problèmes environnementaux mondiaux.
6. Être incapable d'arrêter de penser à des événements passés liés au changement climatique.
7. Être incapable d'arrêter de penser aux pertes environnementales.
8. Avoir eu des difficultés à dormir.
9. Avoir eu des difficultés à apprécier les moments partagés avec sa famille et ses ami·e·s.
10. Avoir eu des difficultés à travailler et/ou étudier.
11. Se sentir anxieux·se à propos de l'impact de ses comportements personnels sur la planète.
12. Se sentir anxieux·se vis-à-vis de sa propre responsabilité lorsqu'il s'agit d'affronter les problèmes environnementaux.
13. Se sentir anxieux·se à l'idée que ses propres comportements ne changeront pas grand-chose au problème.

Échelle

0 Jamais; 1 Quelques fois; 2 Plus de la moitié du temps; 3 Quasiment tous les jours

Questionnaire 4 — Sentiment d'appartenance à la communauté des animateurs

Consigne

Indiquez votre sentiment d'appartenance à la communauté des animateurs/animatrices d'ateliers environnementaux.

Items (sélection)

- Importance de ressentir un sentiment d'appartenance

Options : je préfère ne pas en faire partie; pas du tout important; peu; moyennement; important; très important

1. Je parviens à satisfaire des besoins importants grâce à mon appartenance à cette communauté.
2. Les membres de la communauté et moi partageons les mêmes valeurs.
3. Cette communauté parvient à répondre aux besoins de ses membres.
4. Être membre de cette communauté me procure un sentiment de bien-être.
5. Lorsque j'ai un problème, je peux en parler avec des membres de cette communauté.
6. Les personnes de cette communauté partagent des intérêts, des priorités et des objectifs similaires.
7. Je peux faire confiance aux membres de cette communauté.
8. Je reconnais la plupart des membres de cette communauté.
9. La plupart des membres de cette communauté me connaissent.
10. Cette communauté possède des symboles et expressions d'appartenance, comme des vêtements, signes, arts, logos, architectures, lieux ou drapeaux reconnaissables.
11. Je consacre beaucoup de temps et d'efforts à faire partie de cette communauté.
12. Être membre de cette communauté fait partie de mon identité.
13. Il est important pour moi de bien m'intégrer dans cette communauté.
14. Cette communauté a une influence sur d'autres communautés.
15. Je me soucie de ce que les autres membres de la communauté pensent de moi.
16. J'ai une influence sur ce qu'est cette communauté.
17. Lorsqu'il y a un problème dans cette communauté, les membres parviennent à le résoudre.
18. Cette communauté a de bons leaders.
19. Il est très important pour moi de faire partie de cette communauté.
20. Je suis souvent avec d'autres membres de cette communauté et j'apprécie leur compagnie.
21. Je prévois de faire partie de cette communauté pour longtemps.
22. Les membres de cette communauté ont partagé ensemble des événements importants comme des fêtes, cérémonies ou catastrophes.
23. Je suis optimiste quant à l'avenir de cette communauté.
24. Les membres de cette communauté prennent soin les uns des autres.

Échelle

Pas du tout; Un peu; Assez; Complètement

Questionnaire 5 — Identité écologique

Items

- Je me considère comme quelqu'un qui s'intéresse aux questions environnementales.
- Je suis une personne qui soutient le développement durable.
- Je suis une personne qui soutient les énergies renouvelables.
- Je me vois comme quelqu'un qui a une conscience environnementale.
- Je me considère « écolo ».

Échelle

1 Très en désaccord; 2 Assez en désaccord; 3 Légèrement en désaccord; 4 Ni en désaccord ni d'accord; 5 Légèrement d'accord; 6 Assez d'accord; 7 Tout à fait d'accord

Questionnaire 6 — Émotions négatives (Dépression, PHQ-9)

Consigne

Au cours des 2 dernières semaines, fréquence des problèmes suivants.

Items (1–9)

1. Peu d'intérêt ou de plaisir à faire les choses
2. Être triste, déprimé(e) ou désespéré(e)
3. Difficultés à s'endormir ou à rester endormi(e), ou dormir trop
4. Se sentir fatigué(e) ou manquer d'énergie
5. Avoir peu d'appétit ou manger trop
6. Avoir une mauvaise opinion de soi-même, ou avoir le sentiment d'être nul(le), ou d'avoir déçu sa famille ou s'être déçu(e) soi-même
7. Avoir du mal à se concentrer, par exemple, pour lire le journal ou regarder la télévision
8. Bouger ou parler si lentement que les autres auraient pu le remarquer. Ou au contraire, être si agité(e) que vous avez eu du mal à tenir en place par rapport à d'habitude
9. Penser qu'il vaudrait mieux mourir ou envisager de vous faire du mal d'une manière ou d'une autre

Échelle

0 Jamais; 1 Plusieurs jours; 2 Plus de la moitié du temps; 3 Presque tous les jours

Questionnaire 7 — Anxiété (GAD-7)

Consigne

Au cours des 2 dernières semaines, fréquence des problèmes suivants.

Items (1–7)

1. Sentiment de nervosité, d'anxiété ou de tension
2. Incapable d'arrêter de vous inquiéter ou de contrôler vos inquiétudes
3. Inquiétudes excessives à propos de tout et de rien
4. Difficulté à se détendre

5. Agitation telle qu'il est difficile de rester tranquille
6. Devenir facilement contrarié(e) ou irritable
7. Avoir peur que quelque chose d'épouvantable puisse arriver

Échelle

0 Jamais; 1 Plusieurs jours; 2 Plus de la moitié du temps; 3 Presque tous les jours

Questionnaire 8 — Motivation à agir (Sentiment d'auto-efficacité)

Items

- Je pense que je peux moi-même contribuer à enrayer le changement climatique et les crises environnementales
- Je pense que, collectivement, nous, en tant que qu'animateurs et animatrices d'ateliers de sensibilisation, pouvons faire quelque chose pour lutter contre le changement climatique et les crises environnementales

Échelle

Tout à fait en désaccord; Plutôt en désaccord; Ni d'accord ni en désaccord; Plutôt d'accord; Tout à fait d'accord

Questionnaire 9 — Attitudes face au changement climatique

Items

1. Je crois que le changement climatique est réel.
2. Le changement climatique n'est PAS en train de se produire.
3. Je ne crois PAS que le changement climatique soit réel.
4. Les activités humaines sont une cause majeure du changement climatique.
5. Le changement climatique est majoritairement causé par l'activité humaine.
6. Les principales causes du changement climatique sont les activités humaines.
7. En général, le changement climatique entraînera plus de conséquences négatives que positives sur le monde.
8. Le changement climatique entraînera des conséquences négatives graves.
9. Les conséquences du changement climatique seront très graves.
10. Ma zone géographique sera influencée par le changement climatique.
11. La zone géographique où je vis connaîtra les conséquences du changement climatique.
12. Le changement climatique influencera aussi l'endroit où je vis.
13. Il faudra beaucoup de temps avant que les conséquences du changement climatique soient ressenties.
14. Les conséquences du changement climatique ne seront ressenties que dans le futur lointain.
15. Le changement climatique n'aura lieu qu'à long terme..

Échelle

Pas du tout d'accord; Pas d'accord; Plutôt pas d'accord; Ni d'accord ni pas d'accord; Plutôt d'accord; D'accord; Tout à fait d'accord

Questionnaire 10 — Émotions liées au changement climatique

Items

Dans quelle mesure le changement climatique vous inquiète-t-il ?

- inquiétude

Quand vous pensez au changement climatique et à tout ce qu'il évoque pour vous, dans quelle mesure ressentez-vous les émotions suivantes ?

- espoir
- peur
- indignation
- culpabilité

Échelle

Pas du tout; Un peu; Moyennement; Beaucoup; Énormément

Questionnaire 11 — Normes sociales (les gens autour de moi)

Items

- La plupart des personnes qui sont importantes pour moi (famille, amis, collègues) essaient d'agir contre le changement climatique.
- La plupart des personnes qui sont importantes pour moi (famille, amis, collègues) pensent qu'il est important que j'agisse.

Échelle

Pas d'accord : Pas du tout d'accord; Plutôt pas d'accord; Ni d'accord ni pas d'accord; Plutôt d'accord; Tout à fait d'accord

- Dans quelle mesure la plupart des personnes qui sont importantes pour vous (famille, amis, collègues) font-ils des efforts pour lutter contre le changement climatique ?

Échelle

(Efforts perçus : Aucun; Peu; Modérés; Assez; Beaucoup)

Questionnaire 12 — Sens moral de l'action

Items

- Mon opinion sur le changement climatique et les enjeux environnementaux fait partie de mes convictions et croyances morales fondamentales. »
- Je me sens moralement obligé·e d'agir en faveur du changement climatique et des enjeux environnementaux
- Le changement climatique et les enjeux environnementaux sont étroitement liés à ma perception du bien et du mal.
- Je pense qu'agir pour le changement climatique et les enjeux environnementaux est un impératif moral.

Échelle

Fortement en désaccord; En désaccord; Plutôt en désaccord; Ni d'accord ni en désaccord; Plutôt d'accord; D'accord; Fortement d'accord

Questionnaire 13 — Expériences du changement climatique

Items

- J'ai été directement affecté(e) par le changement climatique.
- Je connais quelqu'un qui a été directement affecté par le changement climatique.
- J'ai constaté un changement, dû au changement climatique, dans un lieu qui m'est cher.

Échelle

Jamais; Rarement; Parfois; Assez souvent; Souvent; Presque toujours

Questionnaire 14 — Informations sociodémographiques

Items

- Genre : Homme; Femme; Ni l'un ni l'autre; Je ne souhaite pas répondre
- Âge : 18–100 ans
- Statut familial : Marié·e; Divorcé·e/séparé·e; Pacsé·e; Célibataire; Veuf·ve
- Nombre d'enfants dans le ménage : nombre à préciser
- Statut d'emploi principal : Fonctionnaire; CDI; CDD; Autre
- Statut de la profession : Agriculteur·rice; Artisan·e/commerçant·e/chef·fe d'entreprise; Cadre/prof. intell. sup.; Professions intermédiaires; Employé·e; Ouvrier·ère
- Revenus mensuels nets du ménage : ≤1000 €; 1001–1500 €; 1501–2000 €; 2001–3000 €; 3001–4000 €; >4000 €; Ne souhaite pas répondre
- Niveau d'éducation : Pas d'étude; BEP/CAP; Bac; Bac+2; Bac+3; Bac+5; >Bac+5 (doctorat); Je ne souhaite pas répondre
- Taille d'agglomération : Communes rurales; 2 000–19 999; 20 000–99 999; ≥100 000 habitants
- Proximité politique : échelle 1 (Extrême gauche) à 7 (Extrême droite); Je ne souhaite pas répondre

Bloc final — Consentements complémentaires

Items

- Accepteriez-vous de participer à un entretien en visioconférence dans le cadre de cette étude ? (Oui/Non)
- Accepteriez-vous d'être recontacté·e pour une future étude scientifique liée à ces thématiques ? (Oui/Non)

English version

Questionnaire 1 — Engagement as a facilitator of environmental workshops

Objective: To better understand your involvement as a facilitator of environmental awareness workshops (e.g., Climate Fresk, 2 Tonnes, Ocean Workshop, etc.).

Instructions

- Select all the workshops you currently facilitate or have facilitated at least once.
- The list contains more than 120 workshops. If a workshop is missing, choose "Other" and specify it.
- For each selected workshop, answer the following questions.

Items

- List of workshops: more than 120 options + "Other" to be specified in writing.
- How many workshops have you facilitated? (continuous variable 1–800)
- How long ago did you start facilitating workshops? (1–120 months)
- When did you last facilitate a workshop? (1–120 months)
- On average, how often do you facilitate workshops? (1–3 times per year / Every 2 months / About once a month / Several times a month / Several times a week)
- How many training sessions have you run to train new facilitators? (0–300)
- Are you paid to run one or more of these workshops? (Yes/No)

Questionnaire 2 — Habits (pro-environmental behaviors, last 12 months)

Scales

Scale 1 (never) to 5 (as often as possible)

- Keep home temperature at 19 °C in winter and air conditioning (if any) at 26 °C in summer.
- Limit meat consumption to 300 g/week.
- Travel by bike, on foot, carpool, or public transport rather than by car.
- Avoid air travel for leisure.

Binary response 0 = No, 1 = Yes

- Join an environmental organization.
- Take part in an act of civil disobedience.
- Talk to others about environmental issues.
- Boycott a product or company.

- Prepare an emergency kit for your home.
- Learn about your home's exposure to natural risks.
- Search for information to prepare your home for climate risks.
- Actively check and follow weather forecasts.

Questionnaire 3 — Personal experience related to climate change (Eco-anxiety)

Instruction:

Over the past 2 weeks, how often have you been bothered by the following problems?

Items (examples)

- Feeling nervous, anxious, on edge.
- Being unable to stop worrying or control your worries.
- Worrying too much.
- Feeling frightened.
- Being unable to stop thinking about future climate change and other global environmental issues.
- Being unable to stop thinking about past climate-related events.
- Being unable to stop thinking about environmental losses.
- Having trouble sleeping.
- Having trouble enjoying time with family and friends.
- Having difficulty working and/or studying.
- Feeling anxious about the impact of your personal behavior on the planet.
- Feeling anxious about your own responsibility in facing environmental problems.
- Feeling anxious that your own behavior won't make much difference to the problem.

Scale

0 Never; 1 A few times; 2 More than half the time; 3 Nearly every day

Questionnaire 4 — Sense of belonging to the facilitators' community

Instruction:

Indicate your sense of belonging to the community of environmental workshop facilitators.

Items (selection)

- Importance of feeling a sense of belonging
- Options: I prefer not to be part of it; Not at all important; Slightly; Moderately; Important; Very important
- I am able to meet important needs thanks to my belonging to this community.
- The members of the community and I share the same values.
- This community manages to meet the needs of its members.
- Being a member of this community gives me a sense of well-being.
- When I have a problem, I can talk about it with members of this community.
- People in this community share similar interests, priorities, and goals.

- I can trust the members of this community.
- I recognize most of the members of this community.
- Most members of this community know me.
- This community has symbols and expressions of belonging, such as clothing, signs, art, logos, architecture, places, or recognizable flags.
- I devote a lot of time and effort to being part of this community.
- Being a member of this community is part of my identity.
- It is important for me to integrate well into this community.
- This community has influence on other communities.
- I care about what other members of the community think of me.
- I have an influence on what this community is.
- When there is a problem in this community, the members manage to solve it.
- This community has good leaders.
- It is very important for me to be part of this community.
- I am often with other members of this community and enjoy their company.
- I plan to be part of this community for a long time.
- Members of this community have shared important events such as parties, ceremonies, or disasters.
- I am optimistic about the future of this community.
- Members of this community care about each other.

Scale

Not at all; A little; Fairly; Completely

Questionnaire 5 — Ecological identity**Items**

- I consider myself someone interested in environmental issues.
- I am a person who supports sustainable development.
- I am a person who supports renewable energies.
- I see myself as someone with environmental awareness.
- I consider myself "eco-friendly."

Scale

1 Strongly disagree; 2 Quite disagree; 3 Slightly disagree; 4 Neither disagree nor agree; 5 Slightly agree; 6 Quite agree; 7 Strongly agree

Questionnaire 6 — Negative emotions (Depression, PHQ-9)**Instruction:**

Over the past 2 weeks, how often have you experienced the following problems?

Items (1–9)

1. Little interest or pleasure in doing things
2. Feeling down, depressed, or hopeless



3. Trouble falling or staying asleep, or sleeping too much
4. Feeling tired or having little energy
5. Poor appetite or overeating
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down
7. Trouble concentrating, for example, while reading the newspaper or watching television
8. Moving or speaking so slowly that other people could have noticed. Or the opposite — being so fidgety or restless that you have been moving around more than usual
9. Thoughts that you would be better off dead or thoughts of hurting yourself in some way

Scale

0 Never; 1 Several days; 2 More than half the days; 3 Nearly every day

Questionnaire 7 — Anxiety (GAD-7)

Instruction:

Over the past 2 weeks, how often have you experienced the following problems?

Items (1–7)

1. Feeling nervous, anxious, or on edge
2. Not being able to stop or control worrying
3. Worrying too much about different things
4. Trouble relaxing
5. Being so restless that it is hard to sit still
6. Becoming easily annoyed or irritable
7. Feeling afraid, as if something awful might happen

Scale

0 Never; 1 Several days; 2 More than half the days; 3 Nearly every day

Questionnaire 8 — Motivation to act (Sense of self-efficacy)

Items

- I believe that I myself can help stop climate change and environmental crises.
- I believe that collectively, we, as workshop facilitators, can do something to fight climate change and environmental crises.

Scale

Strongly disagree; Disagree; Neither agree nor disagree; Agree; Strongly agree

Questionnaire 9 — Attitudes toward climate change

Items

- I believe climate change is real.
- Climate change is NOT happening.
- I do NOT believe climate change is real.



- Human activities are a major cause of climate change.
- Climate change is mostly caused by human activity.
- The main causes of climate change are human activities.
- Overall, climate change will bring more negative than positive consequences to the world.
- Climate change will bring serious negative consequences.
- The consequences of climate change will be very serious.
- My geographical area will be affected by climate change.
- The area where I live will experience the consequences of climate change.
- Climate change will also affect the place where I live.
- It will take a long time before the consequences of climate change are felt.
- The consequences of climate change will only be felt in the distant future.
- Climate change will only happen in the long term.

Scale

Strongly disagree; Disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Agree; Strongly agree

Questionnaire 10 — Emotions related to climate change

Items

- How much does climate change worry you?
- Worry
- When you think about climate change and everything it means to you, to what extent do you feel the following emotions?
- Hope
- Fear
- Outrage
- Guilt

Scale

Not at all; A little; Moderately; A lot; Extremely

Questionnaire 11 — Social norms (people around me)

Items

- Most of the people important to me (family, friends, colleagues) try to act against climate change.
- Most of the people important to me (family, friends, colleagues) think it is important for me to act.

Scale

Disagreement: Strongly disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Strongly agree

Item

- To what extent do most of the people important to you (family, friends, colleagues) make efforts to fight climate change?

Scale (Perceived effort)

None; Little; Moderate; Quite a lot; A great deal

Questionnaire 12 — Moral sense of action

Items

- My opinion about climate change and environmental issues is part of my fundamental moral convictions and beliefs.
- I feel morally obliged to act on climate change and environmental issues.
- Climate change and environmental issues are closely linked to my sense of right and wrong.
- I believe that acting on climate change and environmental issues is a moral imperative.

Scale

Strongly disagree; Disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Agree; Strongly agree

Questionnaire 13 — Experiences of climate change

Items

- I have been directly affected by climate change.
- I know someone who has been directly affected by climate change.
- I have observed a change, due to climate change, in a place that is important to me.
-

Scale

Never; Rarely; Sometimes; Quite often; Often; Almost always

Questionnaire 14 — Sociodemographic information

Items

- Gender: Male; Female; Neither; I prefer not to answer
- Age: 18–100 years
- Family status: Married; Divorced/separated; Civil partnership; Single; Widowed
- Number of children in household: specify
- Main employment status: Civil servant; Permanent contract; Fixed-term contract; Other
- Occupational status: Farmer; Artisan/trader/business owner; Executive/professional; Intermediate profession; Employee; Worker
- Net monthly household income: ≤1000 €; 1001–1500 €; 1501–2000 €; 2001–3000 €; 3001–4000 €; >4000 €; Prefer not to answer
- Education level: None; Vocational diploma (BEP/CAP); High school diploma (Bac); 2-year higher education (Bac+2); 3-year higher education (Bac+3); Master's degree (Bac+5); Doctorate (>Bac+5); Prefer not to answer
- Size of municipality: Rural communities; 2,000–19,999; 20,000–99,999; ≥100,000 inhabitants
- Political orientation: scale 1 (Far left) to 7 (Far right); Prefer not to answer

Final block — Additional consents



Items

- Would you agree to participate in a videoconference interview as part of this study? (Yes/No)
- Would you agree to be recontacted for a future scientific study on these topics? (Yes/No)

Study description

- 1 In the face of the climate emergency and multiple environmental crises, new forms of citizen engagement are developing on a large scale. Demonstrations, awareness campaigns, and the facilitation of workshops are multiplying in order to inform the public, draw the attention of decision-makers, and encourage more sustainable lifestyles (Bagchi et al., 2024). These initiatives, often grouped under the term activism, contribute to the transformation of social norms while providing individuals with levers for action that may strengthen their sense of efficacy and belonging, and at the same time help to alleviate eco-anxiety (Hamann et al., 2025, Thomas-Walters et al., 2025).

Among these initiatives, the facilitation of environmental awareness workshops occupies a distinctive place. These workshops rely on collective intelligence, the transmission of knowledge, and the mobilization of local groups around diverse themes such as climate change, biodiversity, oceans, soils, carbon accounting, digital technologies, and food systems. In France, more than 150 workshop formats currently exist, facilitated by thousands of volunteers and professionals engaged in their dissemination. La Fresque du Climat offers a particularly striking example: it now gathers more than 90,000 facilitators, illustrating the vitality and reach of such initiatives.

Although several exploratory studies have examined workshop facilitator communities, they remain largely descriptive, often focusing on a single format (e.g., La Fresque du Climat), without considering the diversity of other workshops. Moreover, few studies investigate in depth the psychosocial determinants of engagement or the effects of such engagement on pro-environmental behaviors and on psychological well-being, particularly in relation to eco-anxiety.

This cross-sectional and exploratory study aims to address these gaps.

Objectives

Primary objective – Psychosocial determinants of engagement

To identify the psychosocial factors underlying engagement in the facilitation of environmental awareness workshops. In particular, we will examine: sociodemographic characteristics, perceived personal and collective efficacy, sense of belonging to an engaged community, ecological identity, climate-related attitudes and beliefs.

Secondary objective – Behavioral and psychological effects of engagement

To assess the relationships between the degree of engagement in facilitation (e.g., number of workshops facilitated, number of future facilitators trained, frequency and

duration of facilitation) and pro-environmental behaviors (mitigation actions, adaptation behaviors, collective activism), psychological outcomes, with particular attention to eco-anxiety, as well as positive emotions (e.g., hope, empowerment) and negative feelings (e.g., helplessness).

Population

The study will target facilitators of environmental awareness workshops in France. Given the exploratory nature of the study and the large number of potential participants (estimated in the several thousands), no a priori power calculation has been conducted. The aim is to collect the largest possible dataset through existing networks (La Fresque du Climat, partner workshops, and associated collectives).

Study design

2 **Type:** Cross-sectional, mixed-methods, exploratory study

Population: Facilitators of workshops or serious games dedicated to sustainability in France, aged 18 and above

Data collection: Online survey + semi-structured interviews

Recruitment: Through national mailing lists and social media channels

Estimated Sample Size: We aim to recruit ≥ 500 survey participants. Because partial completion is expected, we will apply the following inclusion criteria: participants must have completed at least 90% of the questionnaire to be included in the quantitative analyses. For individual scales, participants will be retained if they responded to at least 80% of the items within that scale; missing responses below this threshold will be imputed by the mean of the remaining items on the same scale. Sensitivity analyses will be conducted to ensure that results are robust to different missing-data handling strategies (e.g., listwise deletion vs. imputation) ; 30 interviewees

Official Title: **Determinants and consequences of climate commitment among facilitators of environmental awareness workshops: A Mixed-Methods Exploratory Study**

Actual Study Start Date: October 1, 2025

Estimated Primary Completion Date: January 1, 2026

Estimated Study Completion Date: June 1, 2026

Inclusion Criteria

3 Age ≥ 18

Facilitators of workshops or serious games dedicated to sustainability

French-speaking

Quantitative Component

4 Participants will complete a 20-minute online questionnaire via LimeSurvey. Variables include:

Engagement indicators:

- Total number of workshops facilitated
- Number of trainings delivered for future facilitators
- Duration and recency of engagement
- Frequency of workshop / serious games facilitation
- Type of workshop or serious game dedicated to sustainability animated
- Are facilitators paid to lead workshops or serious games?

Pro-environmental behavior (12 items): Based on ADEME and academic sources (e.g., (Van Valkengoed et al., 2021))

- Mitigation (item 1 to 4)
- Adaptation (item 5 to 8)
- Collective action behaviors (item 9 to 12)

Eco-anxiety (13 items): Assessed via the French validated version of the Hogg Eco-Anxiety Scale (Mathé et al., 2025)

- Affective Symptoms (items 1, 2, 3, 4)
- Rumination (items 5, 6, 7)
- Behavioural Symptoms (items 8, 9, 10)
- Anxiety About Personal Impact (items 11, 12, 13)

Climate change experiences (3 items): Assessed via the questionnaire used in (Dablander, 2025)

Climate emotions (5 emotions - fear, anger, hope, guilt, worry): Assessed via the questionnaire used in (Böhm et al., 2023)

Attitudes related to climate change (15 items): (Van Valkengoed et al., 2021)

Psychosocial measures:

- Ecological identity (5 items) (Lalot et al., 2019)
- Self-efficacy (2 items) (Ojala, 2023)
- Sense of community (25 items) (Richard et al., 2023)
- Anxiety (7 items) (GAD 7)
- Depression (9 items) (PHQ 9)
- Moral convictions (4 items) (Furlong & and Vignoles, 2021)
- Social norms (3 items) (Furlong & and Vignoles, 2021)

Sociodemographic data:

- Age
- Gender
- Income
- Education
- Occupation
- Family status
- Urbanicity
- Political orientation

Qualitative Component

- 5 A purposive subsample of 30 participants will be selected for 45-minute semi-structured interviews.

Topics will include:

- Motivations for becoming a facilitator
- Identity and sense of purpose
- Emotional experiences linked to climate activism
- Perceived changes in lifestyle and environmental behaviors
- Interaction with the facilitator community
- Management of emotional strain (e.g., eco-anxiety, burnout)
- Interviews will be recorded, transcribed, and thematically analyzed. Audio files will be deleted post-transcription.

Data Management & Ethics

- 6 All data will be pseudonymized and stored securely.
Only the principal investigator and research coordinator will have access.
Data will be archived on the Open Science Framework.
Participants will give informed consent online prior to accessing the questionnaire or interviews.

Ethical approval will be sought from the University of Rennes 2.

Analysis Plan

7 General specifications

- All analyses will be conducted in **R** (latest stable version).
- **Regression models**
 - Multiple linear regression will be used for all continuous dependent variables.
 - If a dependent variable shows a non-normal or count-like distribution, appropriate **generalized linear models (GLM)** will be applied (logistic, Poisson, negative binomial).
- **Categorical predictors** (dummy coding) with the following **reference categories**:
 - Gender: **Male** (reference)
 - Marital status: **Married** (reference)
 - Main employment status: **Permanent contract (CDI)** (reference)
 - Occupational category: **Employees** (reference)
 - Household income: **Median class (€2001–3000)** (reference)
 - Educational level: **High school diploma (Baccalauréat)** (reference)
 - Urbanicity (size of municipality): **Rural communities** (reference)
 - Paid for facilitation: **No** (reference)
 - Average facilitation frequency: **1 to 3 times per year** (reference)
- **Standardization**
 - Unless otherwise noted, continuous predictors will be **z-scored**.
 - Interaction terms will be constructed from **mean-centered variables**.
- **Interactions and planned follow-up tests**
 - For significant interactions, we will conduct **simple slopes analyses** (at ± 1 SD of the moderator)
 - We will apply the **Johnson–Neyman technique** to identify regions of significance.
 - Any additional probing will be reported as **exploratory**.
- **Multiple testing control**
 - Benjamini–Hochberg **False Discovery Rate (FDR)** will be applied within families of analyses (i.e., within each objective).

- **Significance threshold**
- Two-tailed tests, $\alpha = .05$.

8 **Objective 1 – Identifying the psychosocial determinants of facilitation engagement**

Dependent variables (continuous, two separate models):

1. Total number of workshops facilitated
2. Cumulative duration of facilitation (months)

Independent variables of interest (SIMCA framework):

- **Identity:** Sense of community, ecological identity, attitudes
- **Perceived injustice:** climate emotions
- **Efficacy:** individual and collective efficacy
- **Moral convictions**

Control variables:

- Standardized pro-environmental behaviors (mitigation, adaptation, collective)
- Sociodemographic covariates: age, gender, education, employment status, political orientation, urbanicity
- **Diversity of engagement:** number of different workshop types facilitated (continuous)

Reported outputs:

Standardized coefficients (β), 95% CI, raw and FDR-adjusted p-values, R^2 /adjusted R^2 , AIC/BIC for model comparisons.

9 **Objective 2 – Assessing the effects of facilitation engagement on pro-environmental behaviors**

Dependent variables (continuous, three separate models):

Mitigation behaviors

- Multiple items assessing individual mitigation practices (e.g., reducing carbon footprint, sustainable mobility, dietary changes, limiting air travel).
- Responses are measured on **Likert-type scales** (frequency from 1 = never to 5 = as often as possible).
- Internal consistency of the items will be evaluated (**Cronbach's alpha or Omega coefficient**, and inter-item correlations).
- If reliability is acceptable ($\alpha \geq .70$), items will be **averaged into a composite index**, standardized, and used as a continuous dependent variable.
- If reliability is low, items will be **analyzed separately** or grouped into sub-dimensions identified through **exploratory factor analysis**.

Adaptation behaviors

- Four binary items (0 = No, 1 = Yes) assessing preparedness for climate-related risks (e.g., emergency kit, monitoring weather forecasts).
- A composite score (range 0–4) will be created by **summing the items** (or averaging to obtain a 0–1 scale).
- Internal consistency of the four items will be evaluated (Cronbach's alpha).
- If reliability is acceptable ($\alpha \geq .70$), the items will be **combined into a single index** and treated as a continuous dependent variable in linear regression.
- If reliability is low, items will either be **analyzed separately using logistic regression** or **recoded into a dichotomous indicator** (0 = no adaptation behavior, 1 = at least one adaptation behavior).

Collective behaviors

- Four binary items (0 = No, 1 = Yes) capturing civic and activist engagement (e.g., environmental association membership, participation in civil disobedience, product boycott, climate communication).
- A composite score (range 0–4) will be created by **summing the items** (or averaging to obtain a 0–1 scale).
- Reliability of the four items will be checked (Cronbach's alpha).
- If acceptable reliability is confirmed, the composite index will be used as a **continuous dependent variable**.
- If internal consistency is low, items will either be **analyzed separately using logistic regression** or **recoded into a dichotomous indicator** (0 = no adaptation behavior, 1 = at least one adaptation behavior).

Independent variables of interest:

- Engagement indicators: **number of workshops, cumulative duration**

Control variables:

- Psychosocial factors: efficacy (individual, collective), sense of community, ecological identity, moral convictions, social norms, climate attitudes, eco-anxiety
- Experience of climate events
- Sociodemographic covariates: age, gender, education, income, employment status, political orientation, urbanicity

Modeling:

- Multiple linear regression
- If dependent variables are non-normal or count-like: **GLM** (Poisson or negative binomial) with overdispersion checks

10

Objective 3 – Evaluating the effects of facilitation engagement on climate eco-anxiety
Dependent variables (continuous, four separate models):

Eco-anxiety will be measured using the **Hogg Eco-Anxiety Scale (HEAS-13; Hogg et al., 2021)**, which comprises 13 self-reported items divided into four validated subscales:

1. **Affective Symptoms**
2. **Rumination**
3. **Behavioural Symptoms**
4. **Anxiety About Personal Impact**

Each subscale has demonstrated excellent internal reliability and discriminant validity across samples, confirming that eco-anxiety is a multidimensional construct. The authors explicitly recommend that:

"We recommend that researchers calculate a mean score for each dimension of eco-anxiety, with higher scores indicating a greater average of frequency." (Hogg et al., 2021, p. 17)

This recommendation is based on their evidence that the four-factor structure provides a substantially better fit than a one-factor model, and that the subscales show distinct correlates (e.g., affective and behavioural symptoms relate more strongly to stress and depression, while rumination and personal impact anxiety relate more strongly to climate change beliefs and engagement).

Analytical approach:

- Following these recommendations, we will compute and analyse each subscale score separately as continuous dependent variables in multiple regression models.
- This will allow us to determine whether facilitation engagement is differentially associated with specific facets of eco-anxiety (e.g., greater engagement predicting increased rumination but not necessarily affective symptoms).
- If one or more subscales demonstrate inadequate reliability in our sample ($\alpha < .70$), we may also compute an exploratory global eco-anxiety score (mean across all 13 items).

Control variables:

- Psychosocial resources: self-efficacy, sense of community, ecological identity, social norms
- Emotional responses to climate change
- Psychological state: general anxiety (GAD-7-total score), depression (PHQ-9-total score)
- Exposure to climate-related events
- Sociodemographic covariates (same as objective 2)

11 Assumptions

For linear regression models, we assume:

- Predictors measured without error.
- Errors normally distributed (or multivariate normal when multiple predictors).
- Homoscedasticity of residuals.
- Independence of errors (no autocorrelation).
- No multicollinearity among predictors ($VIF < 5$).
- Linear relationship between predictors and outcome.
- If assumptions are violated, we will apply robust standard errors (HC3) and/or appropriate transformations, or switch to GLMs/robust estimation. All deviations will be transparently reported.

12 **Reporting (applies to all objectives)**

- Unstandardized and standardized coefficients (β)
- Raw and FDR-adjusted p-values
- 95% confidence intervals
- Model fit indices: R^2 / adjusted R^2 , AIC/BIC for model comparisons
- Diagnostics of assumptions (residual QQ-plots, Breusch–Pagan/White tests for homoscedasticity, VIF values)
- Potential outliers and influential observations will be systematically assessed in all regression models. Diagnostics will rely on standard influence statistics (e.g., studentized residuals, Cook's distance, leverage values) and/or automated functions (e.g., `check_outliers()` from the performance R package). The presence, number, and location of such cases will be reported transparently. Their influence on model estimates will be evaluated by comparing results with and without these observations. If any cases are excluded, the rationale will be explicitly documented.

13 **Qualitative data:**

Thematic analysis to identify patterns in motivational narratives and perceived impacts

Expected Outputs and Dissemination

- 14 Open access dataset and analysis scripts on OSF
Peer-reviewed publication and presentations at environmental psychology conferences
Recommendations to enhance facilitator support and impact tracking

Contact and Location

- 15 **Location:** France

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