

Research Coordination Network on the Digital Economy and the Environment: Survey Analysis

Introduction

The Network for the Digital Economy and the Environment (nDEE) issued a survey to all members of the Research Coordination Network (RCN) on the Digital Economy and the Environment. There were a total of 31 survey respondents. The survey responses will help us collectively chart a course for the RCN over the next two years.

For each question, we coded and counted the number of comments made by respondents that fell within a specific category or 'theme.' The total number of comments displayed does not equal the total number of RCN members because the survey response rate was less than 100%, not everyone answered every question, and/or some members provided multiple responses to the question.

There were also instances where a comment could have reasonably been coded in multiple ways (i.e. it could have been associated with multiple 'themes'). We chose not to double count these entries and instead assigned the comment to whichever theme it was most aligned. For all of the reasons above, numbers may vary. This survey is simply intended to provide a broad overview of some of the current thinking of the RCN members. Here is the [link](#) to the original survey.

Survey Question Responses

[What is your discipline/specialization?](#)

[What area\(s\) of technology do you focus on?](#)

[What are the most significant barriers to growing this emerging field of research?](#)

[What research questions do you feel are a priority for advancing the field?](#)

[What are some research projects you'd like to work on as part of the RCN?](#)

What is your discipline/specialization?

We asked RCN members to identify their respective discipline/specialization. The numbers shown in Figure 1 are the number of comments made by survey respondents that fell within the designated disciplines/specializations. The percentages are some fraction of the total number of comments. Some RCN members listed themselves as belonging to multiple disciplines/specializations.

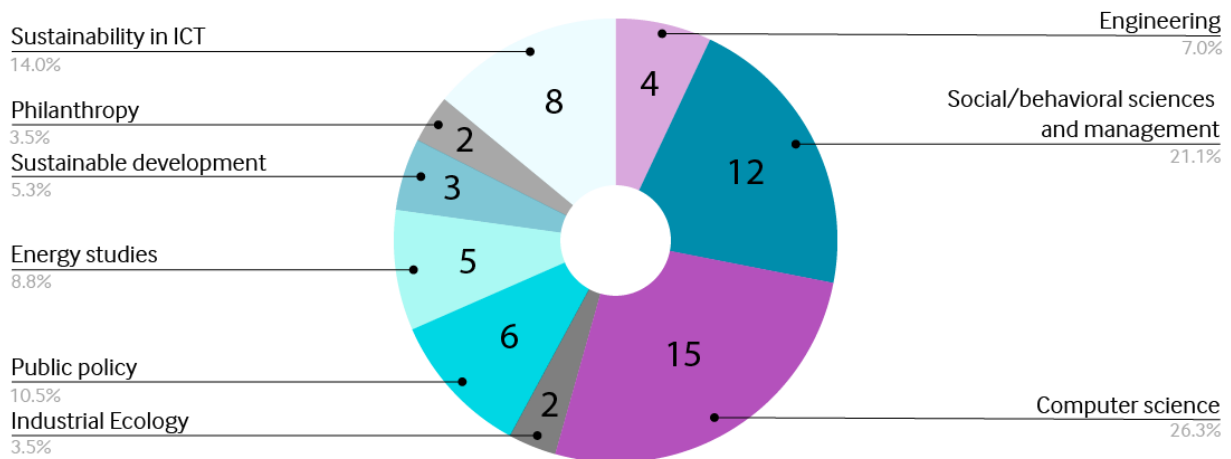


Figure 1. RCN members by discipline/specialization.

What area(s) of technology do you focus on?

We asked RCN members to identify technologies that they focus on within their research. This question was multiple choice. The values shown below represent the number of members that selected a given option. The option of “General” was provided for members who do not focus on any specific technology. See Figure 2 for survey question analysis.

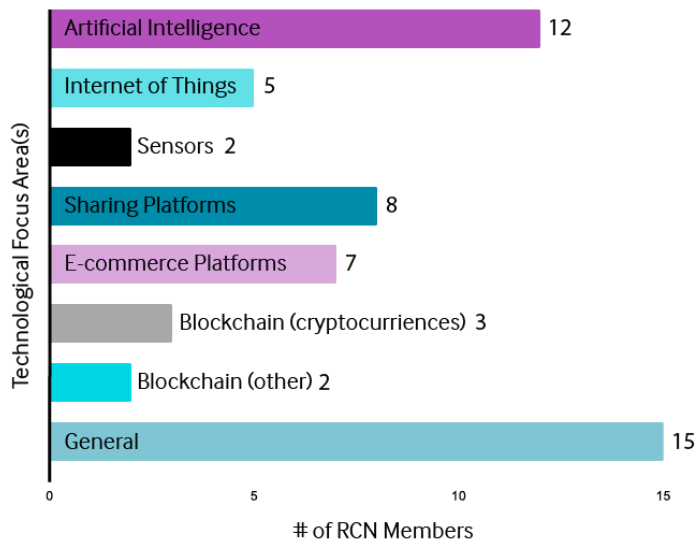


Figure 2. RCN members by technological focus area(s).

What are the most significant barriers to growing this emerging field of research?

We asked RCN members to identify the most important barriers that need to be overcome in order to grow the field. We formed the thematic categories shown below after careful review of the survey responses. See Figure 3 for the survey question analysis.

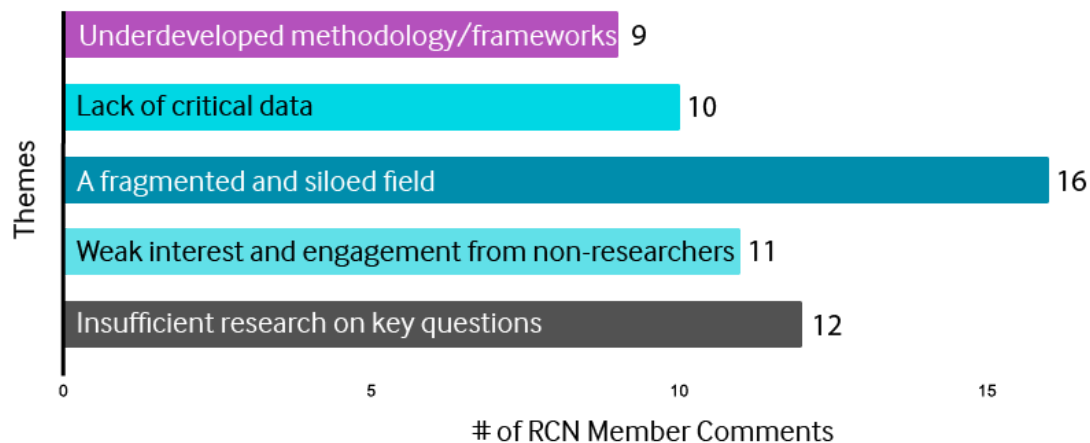


Figure 3. Thematic barriers to growing the field as identified by the RCN members.

In order to better understand the types of comments contained within the thematic categories shown above, we've listed below some (abbreviated) examples of the comments we received and how we categorized them.

Examples of responses categorized as: *"Underdeveloped methodology/frameworks."*

- Insufficient frameworks
- Lack of baselines and common standards
- Difficulty boundary setting

Examples of responses categorized as: *"Lack of critical data."*

- Lack of industry transparency
- Incomplete datasets

Examples of responses categorized as: *"A fragmented and siloed field."*

- Siloing within disciplines
- Lack of coordination between new initiatives
- Few facilitated collaborations between researchers

Examples of responses categorized as: “Weak interest and engagement from non-researchers.”

- Lack of public awareness
- Little recognition from decision-makers
- Need to engage non-academic collaborators in the work

Examples of responses categorized as: “Insufficient research on key questions.”

- Need for better modeling of impacts
- Lack of focus on broader environmental impacts
- Insufficient understanding of indirect effects

What research questions do you feel are a priority for advancing the field?

We asked RCN members to identify research questions that they feel are important to advancing the field, irrespective of whether they have the expertise to study those questions. We formed the thematic categories shown below after careful review of the survey responses and then coded the research questions to match the themes. See Figure 4 for survey question analysis.

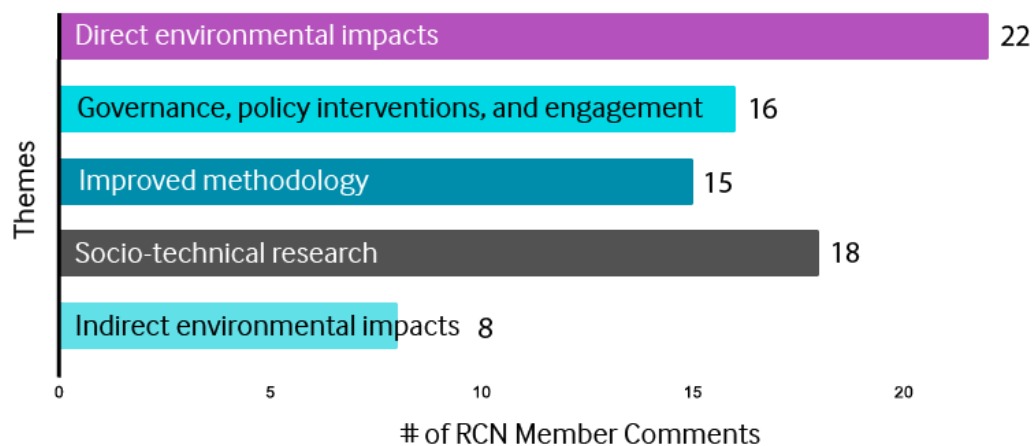


Figure 4. Thematic priority research areas identified by RCN members.

In order to better understand the types of comments contained within the thematic categories shown above, we've listed below some (abbreviated) examples of the comments we received and how we categorized them.

Examples of responses categorized as: "Direct environmental impacts."

- Direct energy consumption
- E-waste
- Resource extraction

Examples of responses categorized as: "Governance, policy interventions, and engagement."

- Regulations
- Trade
- Stakeholder engagement

Examples of responses categorized as: “Improved methodology.”

- Datasets and modeling
- Boundary setting/framing
- Methodological standardization

Examples of responses categorized as: “Socio-technical research.”

- Consumer education
- Consumer behavior

Examples of responses categorized as: “Indirect environmental impacts.”

- Rebound effects
- Substitution effects

What are some research projects you'd like to work on as part of the RCN?

We asked RCN members to articulate research projects that they would like to work on as part of the RCN. We formed the thematic categories shown below after careful review of the survey responses. See Figure 5 for survey question analysis.

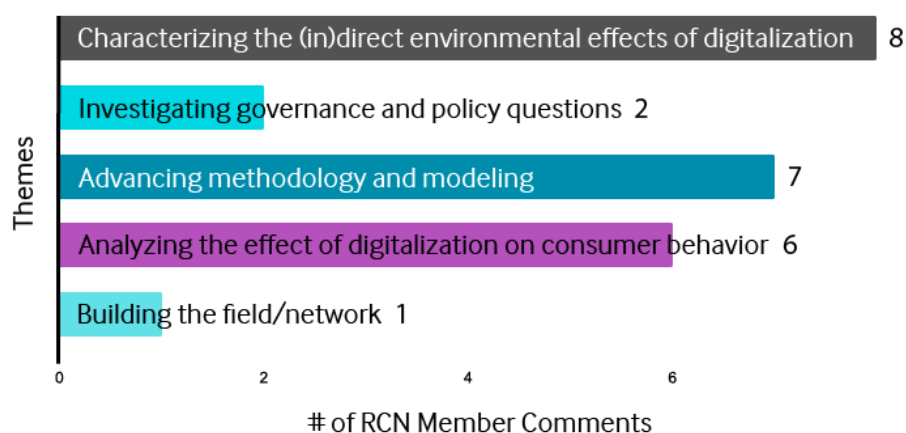


Figure 5. Thematic research project areas identified by RCN members.

In order to better understand the types of comments contained within the thematic categories shown above, we've listed below some (abbreviated) examples of the comments we received and how we categorized them.

Examples of responses categorized as: "Characterizing the (in)direct environmental effects of digitalization."

- Environmental justice implications of digitalization
- Carbon footprint of digital technologies
- Life cycle assessment of digital hardware

Examples of responses categorized as: "Investigating governance and policy questions."

- Impact of powerful actors in shaping digital technologies
- Digitalization and international trade

Examples of responses categorized as: "Advancing methodology and modeling."

- Measurement of energy use and mix at different scales

- Standardization of quantitative methodologies

Examples of responses categorized as: “Analyzing the effect of digitalization on consumer behavior.”

- Intersection of labor and environmental impacts
- Consumption patterns and behavioral interventions
- Consumer education

Examples of responses categorized as: “Building the field/network.”

- A “signature paper” to establish common interests and research questions