

Barriers to and Opportunities for More Sustainable Academic Mobility

A qualitative study of INCLUDE researchers' experiences of work-related mobility

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1. Introduction

The consequences of human induced climate change are becoming more and more evident, and the imperative to change our consumption patterns to reduce greenhouse gas (GHG) emissions is becoming more pressing. Among personal activities that contribute to emissions, flying is one of the most carbon intensive (Ritchie & Roser, 2024). At the same time, the access to air travel is highly unequally distributed, and globally, 50% of the emissions related to air travel are due to the mobility patterns of the 1% richest individuals (Gössling & Humpe, 2020). Academics tend to be part of a particularly mobile group despite being highly aware of the negative environmental impact of air travel, and they have followingly been subject to criticism and allegations of hypocrisy (Higham & Font, 2020; Hopkins et al., 2019).

This qualitative study seeks to better understand barriers to and opportunities for more sustainable academic mobility practices, primarily focusing on how to limit air travel. The findings presented are based on interviews with ten researchers who are all part of *INCLUDE – Research centre for socially inclusive energy transitions*¹. As part of INCLUDE, they have been encouraged to avoid air travel when travelling for work and to choose other modes of transportation when this has been relevant. The environmental strategy that was implemented by INCLUDE in 2020 has been ambitious in terms of limiting air travel.

The report will firstly give a short overview of existing relevant literature on academic mobility and present INCLUDE's environmental strategy and the methods for data collection. Thereafter, the material from the interviews will be put forward in four parts; 1) the respondents' motivations and strategies for limiting emissions from work-related travel; 2) their efforts to negotiate their mobility practices; 3) their perceptions of INCLUDE strategies and its effects on travel practices; and 4) their suggested measures to enable more sustainable academic mobility.

The findings show that time constraints due to family or other work obligations, as well as lack of other efficient modes of transport and the complexity of planning, are the greatest barriers to avoid air travel. It is evident that being part of INCLUDE has been motivating for the researchers in terms of trying to reduce flying, while they also experienced a sense of negative social sanctioning

¹ For more information about INCLUDE, see the research center's webpage:
<https://www.sum.uio.no/english/include/>

whenever they did not have the opportunity to avoid air travel. More research is needed on the effects of similar environmental strategies elsewhere, the experiences of social sanctioning, possible positive and negative spillover effects among colleagues, and how to surpass structural barriers.

2. Academic mobility; a brief literature review

Mobility has become an inherent trait of academia, as academics travel to collect data for their research, to attend conferences, meetings, and workshops, to present their work, give lectures and exchange knowledge (Lassen, 2022). Academic mobility has become highly embedded in the identity and culture of career academics – a culture that to some extent has accepted flying as the only viable means of mobility, due to the availability and affordability of flying compared to other means (Bjørkdahl & Franco Duharte, 2022). This has been referred to as an ‘academic flyout culture’, defining flyout culture as “a pattern of assumptions that academics share about the role, symbolism and importance of flight to what it means to be a member of the academic community” (Poggioli & Hoffman, 2022, p. 232). Mobility is often perceived by academics to be important for career progression (Glover et al., 2019; Lassen, 2022) and traveling that enables networking is perceived to enhance career success (Tseng et al., 2022a).

Furthermore, Pargman et al. (2022) and Wynes et al. (2019) have observed that researchers with high emissions related to mobility often have ‘higher-than-average salaries’. Glover et al. (2019) also found that most academics belonging to a ‘hypermobile group’ have senior positions as professors or senior professors. It is though disputed to what extent high levels of mobility are important for scholarly output. While Wynes et al. (2019) found a correlation between mobility and high salaries, they also found that academic productivity in terms of published work was not affected by the amount of air travels. It is hence uncertain to what extent increased mobility actually results in increased or improved research, which is also challenging to measure. This is further complicated by the diversity of research fields and data collection methods, as well as the researchers’ degree of geographical remoteness in relation to colleagues within their field and areas where they collect data.

The possible benefits of mobility are argued to increase existing inequalities, globally and among academics, as the access to mobility – particularly air travel – is extremely unequally distributed. In 2018 only 11% of the world's population were travelling by air, with 1% of the world's population responsible for more than half of the global emission related to aviation (Gössling & Humpe, 2020). The unequal access to aviation is also present in academia, as access varies a lot among staff at the same university (Glover et al., 2019; Pargman et al., 2022; Shelley-Egan, 2020), but also among universities, as the 'hypermobile group' is generally located in the Global North (Nevins et al., 2022).

These differences make it difficult to establish the environmental effects of academic mobility on a global level. However, several case-specific contributions have been made, calculating emissions of university staff's mobility practices (eg. Arsenault et al., 2019), academic institutions (eg. Ciers et al., 2019; Stohl, 2008), sustainability workshops (eg. Caset et al., 2018), academic conferences (eg. Jäckle, 2022; Klöwer et al., 2020) and academic careers (eg. Sheller, 2022). The general tendency according to these studies is that current mobility practices in academia are highly unsustainable and contribute to a great part of the university sector's GHG emissions.

Despite increasing knowledge of the negative environmental consequences of academic mobility, a recent study found that, contrary to what one might expect, scholars within the field of sustainability tend to travel more by air than scholars within other disciplines (Whitmarsh et al., 2020). Hence, knowledge in itself is seemingly not sufficient to create behavioral change, and various studies (eg. Cats et al., 2022; Eriksson et al., 2022; Schreuer et al., 2023) have identified a knowledge-action gap among researchers in this regard. It is followingly argued that measures set to change behavior through increased knowledge are not sufficient, and that there is need for stronger measures to enforce behavioral change.

However, there is certain ambiguity among scholars on whether academia *should* reduce air travels, as some of the face-to-face interactions it enables are considered necessary (Kreil, 2021). Lassen (2022) argues that it is important to distinguish between different purposes of mobility when discussing how to reduce the carbon footprint of academia, as some face-to-face interactions are too valuable to prevent.

Followingly, some studies have sought to understand how researchers justify their mobility practices. According to Rödder and Braun's literature review on 'Academic Air Travel' (2021),

the most commonly identified justification is a perceived professional obligation to fly – which aligns with Bjørkdahl and Duharte (2022) and Poggioli and Hoffman’s (2022) arguments concerning an existing ‘flyout culture’. Early-career academics express a feeling of having to choose between professional success or aligning their actions with more sustainable mobility practices, as they perceive mobility as important to succeed career-wise (Wassénus et al., 2023). In terms of responsibility of changing current practices, agency is often not addressed or placed at institutional level (Eriksson et al., 2022), and the researchers often expect their institutions to incentivize individual consumption changes (Passalacqua, 2021; Schreuer et al., 2023). Eriksson et al. (2022) conclude that a central issue is the lack of an open discussion about carbon emissions related to academic mobility, responsibilities, and actions to limit such emissions.

The existing literature on how to reduce the GHG emissions related to academic mobility predominantly focuses on whether to travel by air or not to travel, rather than researching optional modes of transportation (Rödder & Braun, 2021). One possible explanation for this is that academic mobility is embedded in greater structures promoting air travels (Baer, 2022; Higham et al., 2022; Jess, 2023; Nevins et al., 2022), leading to increased inequalities and GHG emissions. Caset et al. (2018) have also illustrated why technological fixes to reduce the emissions of long-distance flights are not probable and will not be sufficient to reduce the carbon footprint of aviation, increasing the urgency to reduce aviation to face these challenges.

The contributions that focus on other modes of travelling are to a great extent essayistic texts by scholars wishing to highlight positive experiences related to ‘slow travelling’ (see eg. Bissell & Overend, 2015; Conti, 2021). It is though important to stress that to have the possibilities to engage in slow travel given current structures, should be considered a position of privilege. As stated by Volden and Hansen, “while flying *enable[s]* flexibility, avoiding air-travel require[s] already *having* some level of flexibility” (2022, p. 357). More sustainable modes of traveling are however not found to have the same extensive negative consequences and are thus likely to be much less studies.

Though virtual presence is being promoted as an option to reduce mobility and promote more equal access to academic conferences (see eg. Jäckle, 2022; Sahakian et al., 2021), research has shown that virtual presence thus far does not necessarily substitute, but rather compliments physical presence (Glover et al., 2019; Rödder & Braun, 2021; Tseng et al., 2022b). Calls have

followingly been made to “radically reimagine academia” (Wassénus et al., 2023) and culturally redefine academic success (Tseng et al., 2022b), to account for the tensions between expectations to be academically mobile and the unsustainable consequences of these practices (Crumley-Effinger & Torres-Olave, 2021). The COVID-19 pandemic has been recognized as a disruptive moment, creating room to reimagine how we are mobile and how mobility is defined and practiced (Adey et al., 2021; Shelley-Egan, 2020).

This research project seeks to better understand barriers to and opportunities for more sustainable academic mobility according to researchers’ experiences. The respondents are researchers within different disciplines studying socially inclusive energy transitions and should be considered environmentally conscious individuals. Clear institutional policies on mobility practices have been found important as to guide behavior and enable behavioral change among academics (Tseng et al., 2022b). As the research group with which the respondents are all connected, INCLUDE, has implemented an environmental strategy encouraging alternatives to air travel, it is interesting to see how and to what extent this has affected the researchers’ mobility patterns. There is also need for more research on how policies to make mobility practices more sustainable are experienced after implementation, as well as experiences with choosing other modes of transportation than aviation. This report will contribute to filling these research gaps. The researchers have all been based in Norway at times of their academic career. Air travel is highly embedded in Norwegian society, and flying tends to be the fastest way to travel between the biggest cities (see also Volden and Hansen 2022).

3. What does INCLUDE’s environmental strategy say?

The goal of INCLUDE’s environmental strategy that was implemented in June 2020 is to ensure that the research center and its affiliated researchers promote and implement environmentally friendly solutions. The strategy also seeks to increase consciousness of sustainable practices among the researchers, other research institutions and the society as a whole. It focuses on food consumption and mobility, as these are considered the two most relevant areas where the group can reduce their negative environmental impact related to consumption.

The part that focuses on mobility states that all researchers and administrative staff are expected to search for the most environmentally friendly option for mobility, and that possible extra economic costs by choosing sustainable options will be covered by the INCLUDE budget. The strategy also contains a checklist for considerations to be made regarding work-related mobility. First of all, staff are asked to avoid flying by using digital options and choosing ground-based travel options when applicable. The strategy also asks staff to actively reduce the amount of work-related travel. It further states that when travelling is deemed necessary, all travels within Northern Europe, including Great Britain, should primarily be done through ground-based travel. If the staff choose to fly, they are asked to explain their choice, as well as to avoid layovers and to choose companies with modern aircrafts to reduce emissions (*Miljøstrategi – Include*, 2023).

In their annual report from 2023, INCLUDE stated that by reducing air travels the group reduced their emissions with a total of 2869kg of CO₂-equivalents (Include Årsrapport 2023, n.d.). These calculations are based on data registered by the researchers within INCLUDE, on travels they have done related to their work in INCLUDE. As some travels were not registered, the report state that the number of avoided emissions is likely to be even higher. The report further states that INCLUDE's travel policy has been an inspiration for other academic institutions seeking to reduce their carbon footprint.

4. Data collection and methods

The material presented in this report has been collected through ten semi-structured interviews² with researchers (including PhD-candidates) who are part of *INCLUDE – Research centre for socially inclusive energy transitions*, led by the University of Oslo (UiO). As part of the environmental strategy encouraging alternatives to air travels, the researchers are asked to report on all travels with a duration of more than 60 minutes related to their research as part of INCLUDE, by filling out a self-reporting form. This form asks them to fill out chosen transportation modes, economic costs and time spent travelling, and to calculate their expected CO₂-emissions related to the travel. If applicable, they are asked to calculate the CO₂-emissions that were reduced by

² The interview guide (in Norwegian) can be found as an attachment.

choosing more sustainable modes of transportation than aviation. As a part of promoting ground-based travel as an option to air travel, INCLUDE organized a common train trip for the researchers in the group to attend a seminar with partners in Durham, Northern England, in September 2022, from Oslo, Norway. This common trip was organized by some of the INCLUDE researchers together with a travel agency and included several overnight stays along the way.

Participants in this study were recruited based on the self-reporting form. Except for the researchers that have been part of supervising this study or had participated in designing the self-reporting form, all the researchers who had filled out the form were invited to participate. In total 15 researchers were asked to participate, in which eleven accepted the request. Due to time limitations of the project, ten of these were chosen for interviews. Five of the researchers that were interviewed are currently PhD-candidates and will be referred to as P1-P5, while the rest are researchers holding a doctoral degree and will be referred to as S1-S5. In the interest of assuring anonymity, the respondents' gender, age, home institution etc. will not be revealed as the findings are considered interesting regardless of such personal information. Quotes have been translated into English by the author and the respondents have been given the opportunity to assess the findings and quotes referred to from their interview, before the report was published.

The interviews were conducted in June, July, and August of 2024, in Oslo, Norway, either digitally or face-to-face in a closed meeting room or office. The duration of the interviews varied from 28 to 62 minutes. The interviews were recorded using the UiO's digital recording system "diktafon" and transcribed using UiO's "autotekst" and the program f4. Thereafter the interviews were coded thematically, using the program Nvivo. As the form contains self-reporting of INCLUDE related travels only, the data from the form can be considered unreliable for determining the researchers' total mobility practices and related emissions. Participants may also engage in work-related travel that is not part of the INCLUDE projects, but which is nonetheless interesting when studying academic mobility practices. The material presented in this report under "findings" derive from these qualitative interviews, to which the data from the form served as a starting point for conversation. All respondents have been based in Norway during at least parts of their time as INCLUDE researchers, and the data primarily build on their mobility as researchers based in Norway.

As the sample of respondents was collected on a voluntary basis from a research group that is studying energy transitions, it is natural to expect the respondents to be a group that is particularly inclined to reduce their emissions. Though all researchers within INCLUDE are expected to report all relevant travel in the self-reporting form, this is not controlled nor strictly mandatory. Hence, it is possible that the researchers are more inclined to register their ground-based travels than air travels, and that researchers choosing ground-based travel are overrepresented in the self-reporting form. One cannot necessarily assume that the researchers who accepted the interview request are representative for the entire research group. Furthermore, the study should not be considered generally applicable, but the findings are interesting in that they illustrate how an ambitious environmental strategy may be perceived and affect mobility patterns of researchers part of an environmentally conscious working environment.

5. Findings

5.1 Respondent's motivations and strategies for sustainable academic mobility

All the respondents were clearly motivated to decrease their carbon footprint due to environmental concerns. Out of the ten, six respondents (P1, P3, P4, S2, S4, S5) further stated that their motivation was primarily due to personal convictions, rather than incentives from a given working environment or any institutional policy, also counting INCLUDE's travel policy. They made statements like, "So I am very committed to not flying. It has become a kind of sport [laughter]. So I do not fly." (S2), or

"When I travel, I've become very committed to reduce the CO₂-footprint [laughter]... [of] my travels. So, I avoid using transportation such as planes, [I] travel by train in Norway [...] when I have jobs [in different cities in Norway], but also in Europe." (S5)

One of the senior researchers explained how they were motivated as it felt meaningful to restrict personal mobility:

“It is not necessarily about thinking that “What I do has an impact”, but about finding *purpose* in [limiting travels]. And I do find purpose in it, when thinking about that I can at least look at my children and say, when they are adults, say that “At least I tried”. That I was aware of, even though it took some time... But that is a motivation for me. To feel like I did what I *could*.” (S2)

Two of the PhD-candidates (P1, P3) said that they choose their research topics partly based on not having to be mobile outside of the city where they live, to minimize their environmental footprint as academics.

“I thought about it a bit when I applied for the PhD. I thought about what I was interested in researching. And then I thought that I partly did not want to research [...] a geographical area that is far away [from Norway], if that meant I would have to rely on travelling. [...] So that was something I considered a bit when I started within academia.” (P3)

When talking about their mobility practices, four of the researchers (P2, P5, S2, S4) said that they saw themselves as someone not travelling much compared to other colleagues at their home institutions. They argued that this was due to their awareness of the negative environmental effects of high mobility practices. Meanwhile, only three of the respondents (P3, S2, S5) seemed to consequently choose to travel by train instead of flights, when travelling from Norway to continental Europe for academic purposes – not counting the common trip to Durham. When asked about their private mobility, four of the respondents (P1, P2, P3, S5) said that they made the same considerations when travelling privately as professionally, taking environmental concerns into consideration.

However, even though not everyone completely avoided flying, several researchers described various strategies seeking to reduce the impact of their air travels. Four respondents (P1, P2, P5, S4) said that they prioritized to attend certain conferences, meetings and courses over others, considering what would be most important for their career or field. Two of these (P1, P2) also said they prioritized staying for a longer period of time once they travelled – either for the purpose of research or to include leisure time. Four of the researchers (P4, S1, S4, S5) spoke about combining more than one purpose on the same trip, maximizing the value of the trip, as a measure to reduce their personal carbon footprint. One respondent for example said: “You need to have a good reason for choosing to [travel] and then you have to get the most out of it when you do it” (S1).

Some of the researchers also expressed a general dislike of traveling by plane; “I cannot stand planes. I do not like airports, I do not like planes. It is the negative climate sentiment about it, but also just the stress and fuss about getting somewhere the fastest way possible” (P4).

“I do not like flying. I am not scared of flying, but I never like flying. It is just something I do because I must, if I do it. It is not a good experience to fly. It is not.” (S1)

Meanwhile, half of the respondents (P3, P4, P5, S2, S5) expressed positive sentiments towards ‘slow travelling’ by train.

“But I love ‘slow travel’, and when I travel for vacation that’s often what I do, because then I do it as part of the vacation. And I think it’s really nice to sit on a train and read a book or listen to a podcast, or just relax and look outside the window and sip my coffee. I think that’s really, really nice.” (P4)

Two respondents also reflected upon train rides being relevant for their own research (P3, S5), as another positive side of travelling by train or bus instead of plane.

The purpose of the travels that the respondents did were many. Everyone had travelled for the purpose of attending INCLUDE-seminars in Norway, and several of the respondents attended the INCLUDE seminar in Durham. Three of the PhD-candidates talked about travels related to PhD-courses. Two of the researchers travelled within their home city in Norway to do fieldwork, while five travelled within Norway and one reported travelling outside of Norway to collect data. Four of the respondents had travelled outside of Norway to attend conferences (besides INCLUDE) and one to give guest lectures.

When asked about how the COVID-19 pandemic had affected academic mobility the researchers reported that the awareness of the availability, and acceptance of using, digital options to substitute in person interactions had increased (P1, P2, P3, S1, S2, S4, S5). Some said that the acceptance and availability of digital tools had given them increased flexibility (P1, S2), that it had increased the efficiency of their work (S1, S2, S3), and that they themselves and colleagues got more used to using digital tools as a substitution during the pandemic (P2, S4, S5). Only one of the researchers (P5) stated that they did not use digital communication tools to substitute in person interactions much and tried to avoid it because of their personal dislike of them. Digital tools have seemingly

helped surpass the barrier of time constraints to some extent, in situations where virtual meetings are deemed a sufficient option for physical presence.

However, two of the respondents (P3, S3) pointed to the fact that the reduction of flights that was experienced during COVID had returned to pre-COVID levels (for research confirming this see the report from the International Air Transport Association, 2024). They experienced that some colleagues were trying to make up for lost travels during the pandemic.

“People are to a certain extent trying to regain lost time to, maybe. “Now it has been two years since I was at a conference, now I have to attend twice as many this year” or something like that, I don’t know.” (P3)

The interviews suggested that the researchers were motivated to reduce their air travels, and while not everyone were able to completely avoid flying, several had implemented strategies seeking to compensate for their air travels.

5.2 Negotiating academic mobility

5.2.1 The necessity of in-person presence

Though all the respondents were motivated to limit their travels, they had a hard time defining what should be considered justifiable reasons to travel. However, aligning with Lassen’s (2022) former research, they did not believe all in person presence could be substituted by digital options. The reason most commonly stated as justifying travelling for academic purposes was data collection – either doing fieldwork (P1, P3, P4, S1, S2, S3) or interviews (P4, S2, S5), or a combination of the two.

When discussing a work trip where they chose to fly due to lack of options, P3 expressed that sometimes one would have to choose between travelling to gather data or not do a research project; “It was simply a choice between either doing the research project at all, and flying, or we don’t do it. In that context it became necessary to choose [to fly]” (P3). One of the researchers explained it by the hypothetical example, “[...] if you are going to do fieldwork as an anthropologist in the Philippines, then you have to go to the Philippines [laughter]. That is not going to change.” (S2)

Five of the researchers (P2, P4, P5, S2, S3) talked about the importance of in person presence when doing interviews for their own research, underlining the importance of the setting and non-verbal communication as parts of the data collection. One also raised the issue of themselves being more comfortable doing interviews in person than digitally possibly affecting the data collection.

“But for me it means a lot, to sit in the same room as someone and be able to read their body language. To be able to get a connection with someone in a completely different way when you sit in the same room, than when it’s on a screen. It’s something completely different. So that’s been very important for me. And it also makes me feel more comfortable. And I know that if I’m comfortable as a researcher, then my respondents are also much more comfortable sharing [information]. So, it plays an important role. So, it’s been important to me to go physically.” (P4)

On the other hand, two respondents (P1, S1) said that doing interviews digitally worked well for them and that it had given them a lot more flexibility in their work. P2 expressed that in some cases where they were dependent on gaining the trust of the respondents, it was important to be physically present with the respondents – illustrating that whether digital tools can substitute physical presence when collecting data is dependent on the nature of the given research.

Regarding the necessity of in-person meetings for the purpose of informal social interactions with other scholars, such as by attending conferences and meetings or giving guest lectures, the views of the respondents were divergent. Two of the researchers (P5, S4) stated that there was no important *scholarly output* from such interaction, besides being motivational and inspirational, making the work of academics less lonely.

“[...] I don't want to sit behind a Zoom screen all the time either. But I have yet to see or find a research project that was started and funded based on a water cooler conversation.” (S4)

Six of the respondents (P1, P4, P5, S2, S4, S5) did nonetheless say that the informal social interactions with people outside their regular sphere were important to stay motivated as a researcher. P5 stated that social interactions were their main motivation to attend seminars and conferences in the first place, and that they were not willing to attend these digitally.

“No, because you can’t attend a scientific gathering only digitally. It doesn’t work. Or it might work, but as I said earlier, I don’t travel to these places because I believe I will get a lot of theoretical input. But it’s mostly for the social [part], so then it doesn’t work with digital tools. Or, yeah... [...] I want to speak to people.”

S5 also talked about how being physically present made the work more enjoyable.

“I gave a speech at a conference [...] And then it’s very nice to be physically present, and to eat lunch and meet people and talk to people, that people approach [me] after the speech to chat. It’s like a completely different... Like I absolutely enjoy [in person conferences] the most. It works *okay* with digital speeches and digital teaching, but yeah, it’s not the same.”

However, some of the researchers also argued that the informal social interactions you get from attending academic conferences and meetings in person could have direct value for the scholarly output as well. P1 said that it could be difficult to facilitate group discussions and feedback sessions digitally, which might be valuable for the research and the PhD-education. S1 talked about the importance of informal knowledge sharing and inspiration having a positive effect on research outcomes. Three of the PhD-Candidates (P2, P3, P4) also said that mingling and building networks was easier in person, which could affect research partnerships. Similarly, S1 and S2 said that it was important to meet in person to build efficient partnerships, and S2 argued that good partnerships and cooperation would result in good research. P2 also stated that networking could connect you to many relevant external partners, that would be beneficial for your research. P3 and P5 talked about the importance of getting feedback from scholars outside their own “academic bubble”, and that they were not likely to get in touch with the same people without the informal social interactions.

5.2.2 Localizing research

Two of the researchers (S3, S4) had experience working with local researchers to collect data on their behalf during research projects, as a way of localizing the research and possibly preventing Western researchers from having to travel to remote areas to conduct research. However, their opinions on whether this could be useful were very divergent. One of the researchers (S4) talked

about two research projects where they had positive experiences using local researcher to collect data and spoke strongly in favor of localizing research.

“And when I worked in [Norwegian organization] too, we started looking at the footprints of our operations. And really the only conclusion you can reach is that you need to localize more. You just do. There’s a justice argument there in terms of empowering folks in the global south or outside the rich north. [...] ...and there’s also a resource argument, like it is just more efficient from a cost standpoint. [...] flying a Norwegian [...] off to South Africa is extremely expensive and time consuming, and there’s the climate footprint, right? [...] There is no argument against localization. There just isn’t.” (S4)

The other researcher (S3) on the other hand had poor experiences due to lack of competence among local partners, and lack of experience collecting qualitative data, which made it difficult to analyze the collected data afterwards.

“But the point is [that] [...] we tried to carry out focus-group interviews through a local university, and kind of used the resources you had, as in the competence people there had. And that was primarily people without a background within qualitative social science. [...] And now we do have a lot of data, but they are first of all in [a foreign language] [...] and it’s completely impossible to translate and transcribe a focus group discussion, because it is a lot of back and forth and many people responding. So, what do you do then? [...] This is a concrete example of the dimension you lose by not having been there yourself to follow the conversations.” (S3)

The two researchers were from different disciplines within social science, which might also have affected how they related to and used data in their research.

5.2.3 Early-career academics

Three of the PhD-candidates (P2, P4, P5) spoke about the need to attend mandatory course work as part of their education. The distances they traveled and the means of transport they used varied; however, all courses were within Scandinavia. One of the senior researchers reflected upon the feeling of an obligation to be visible and attend international conferences and meetings as early-

career academics for the purpose of work progression, when stating that they personally did not feel the need to attend many conferences.

“But again, that’s a position of relative power that I’m coming from, and I recognize that. [...] [I]f I had graduate students, it would be hard for me to be like, “Well, you shouldn’t go to that because of the carbon footprint”, knowing that they need to build their career, right?” (S4)

Similar arguments are present in the literature, as the perceived obligation to be mobile to enhance career success is often particularly experienced by early-career academics (see eg. Wassénus et al., 2023).

5.2.4 Alternative modes of transportation

The most commonly stated explanation among the respondents for choosing air travels rather than alternative modes of transportation was by far time constraints. These were time constraints due to family obligations (S1, S5), other work obligations (P2, P4, P1, S4), that time spent travelling limited their time spent working (S3), time related to the extensiveness of organizing trips by other means (P3, P4, P5, S2, S3, S5) or simply that they saw their personal leisure time as too valuable to spend on work travels (P4). One of the PhD-candidates argued that the main issue was how society values time, which did not open for slow travelling in relation to work.

“So, I wish I was part of a society where it was totally okay to take your time. But then it’s a bit like, it’s kind of wishful thinking, because for now I’m part of a society where time plays a crucial role.” (P4).

Six of the respondents (P3, P4, P5, S2, S3, S5) spoke of the complexity of organizing a trip using other modes of transport than aviation from Norway to continental Europe as a major barrier to limit air travels. As explained by P3,

“If you want to travel by train, it should be easy to do so. If you are interested and motivated to do so, you will do it anyways. But yeah, if you are not that motivated, it is easy to just “Yes, this is too hard” and then you fly...”

It was also evident that the researchers missed proper competence at institutional level on how to organize trips by other means than aviation. Four respondents (P3, P5, S2, S5) had experience cooperating with a travel agency to plan work-related trips by train to continental Europe. They were disappointed by the travel agencies' limited experience and competence related to organizing sustainable work travel. They expressed that it was much easier to organize ground-based trips by themselves, as they had more experience in doing so than the travel agencies they knew of. They were also frustrated by the fact that air travels were offered as default, and that they had to actively ask for other modes of transportation to get such offers. One of the researchers (S5) remarked that "I just call them "the air travel agency" [laughter]" when describing their experience using a travel agency for work related travels.

However, one of the respondents (P4) spoke about the importance of using travel agencies despite that it might have been easier to plan the trip independently, as a means to create a demand for sustainable travel agencies.

"But yeah, just the fact that they got [...] the travel agency to make a sustainable [offer], right? [...] I really support this because it is us as consumers that sometimes have to trigger those systems to change. Because it is when the demand is present that [the travel agencies] think that "Okay, but here we can actually make a supply, here we can offer something different" for example." (P4)

The three respondents (P3, S2, S5) with significant experience organizing train trips from Norway to continental Europe shared that the process could be quite time-consuming and demanded knowledge about different train systems within European countries. However, they seemed to find joy in spending time organizing the trips and expressed that it got a lot easier with experience. S2 and P3 said that they were further motivated by inspiring others to travel by more sustainable means, having experienced a kind of spillover effect both at an individual and institutional level following their choices to travel by train instead of flying.

"You can easily get a kind of spillover effect. You affect the ones close to you. It's a difference between that and some kind of systemic change, but at least it's something small that... Yes, that it was worth it" (P3)

One respondent that had a lot of experience slow travelling big distances in Scandinavia (P4) said that it was their idealistic side that motivated them to do so, as it was quite challenging. They also experienced that their actions did not necessarily have a spillover effect on colleagues at their home institution; “I get the impression that people are more like “Good for you, I would never do the same””.

Following the time constraints and the complexity of planning, the lack of efficient alternatives to flying in terms of available train routes (P4, S3, S4) and night train options (P5, S5) was raised as structural issues promoting air travels. Half of the respondents (P4, P5, S2, S3, S4) talked about this being an issue particularly for remotely situated researchers. Being situated in Norway, the researchers experienced limited efficient alternative modes of transportation to continental Europe. Construction work on train lines and train strikes were further mentioned as hindrances for travelling by train. Two of the researchers (S3, S4) also said that the need to travel intercontinentally made alternatives to aviation difficult.

5.3 Perceptions of INCLUDE strategies and effects

All the respondents were positive to INCLUDE’s environmental strategy in terms of it having a positive behavioral effect on the researchers in the group. Three of the researchers (P2, P3, S4) said that they believed the policy had directly influenced travel choices among colleagues, though they also said it had not affected their choices personally. Another researcher (S1) was confident that the policy definitely affected how the INCLUDE researchers choose to travel. Three of the PhD-candidates (P1, P2, P4) expressed that the travel policy was a reassurance in the sense that it gave them clear incentives to choose sustainable modes of transportation and reassurance that it was accepted to spend more money of the budget on doing so. They also expressed that this was something they missed at their home institutions, making it unclear what mobility options were accepted there. They further reflected on the lack of conversation and clear guidance from institutional and project leaders at their home institutions possibly having a negative spillover effect on themselves and colleagues, making it easier to accept existing practices to chose air travel. Half of the respondents (P2, P3, S2, S4, S5) said that the conversation about sustainable academic mobility was very present in INCLUDE, and that this could easily have a spillover effect on

colleagues and other academic institutions. Two of the respondents (S4, S5) believed strongly that leadership at institutional level would be important to enable change and incentivize researchers to rethink their mobility practices, and one of them also said that this was something that had been done well within INCLUDE.

“So here we're talking about leadership, right? That, you know, [the leader of INCLUDE] would be very vocal on that we need to be mindful of traveling. But if [the leader of INCLUDE] had not been vocal, that could easily have kind of slipped the radar, right?”

S4

Half of the respondents clearly stated (P3, P4, S1, S2, S5) that the kind of work that INCLUDE has been doing by implementing the travel policy is important to raise awareness of the issues of mobility in academia.

“So like yes, it has *a lot* to say, that INCLUDE leads the way and has such a[n environmental] strategy. That I definitely believe in, because I feel like it's often the most important means sometimes, to [lead] by being an example. And particularly when it's about bigger, like not just an individual that leads as an example, but an entire large group... Because then there might be other research centers that thinks “Oh yes, so they can do it? Like, why should we be any worse? We can also do this.” So particularly with this I am very optimistic, that these things help.” (P4)

One of the researchers (S1) expressed that the travel policy and the focus on sustainable academic mobility had been “pioneering” in terms of high ambitions and clear guidelines. They felt certain that such work was an important step to enable change within academia.

The respondents were also generally very positive towards the commonly arranged trip to Durham, in terms of the trip being a great bonding experience and a learning opportunity to gain knowledge on how to travel more sustainably. The researchers that participated on the organized train travel expressed that it was a good experience, particularly for the PhD-candidates who were early in their academic career and felt like they had much to gain from getting to know the other candidates better. As described by one of the respondents:

“There is something about travelling together as a group, it does something about the team building, or you get more connected if you have a common point of reference to talk about

after a long trip. [...] You have to run to [catch the] train, and get there, find a place to eat... It's an experience, that welds people together." (S2)

An interesting observation when discussing the Durham trip with the respondents was that the ones who were not able to join the common train trip seemed to feel ashamed not to have the flexibility to do so. Meanwhile, several of the respondents who did take part of this trip argued that all their colleagues who could not make time for such ground-based travel had very good reasons for it. By implementing such an ambitious travel policy, the group seemingly imposed a kind of negative social sanctioning on the researchers. Meanwhile, one of the respondents expressed that one of the main objectives behind developing such an ambitious policy was to raise awareness, partly by making the researchers feel a bit uncomfortable about choosing to fly:

"The point is that you start thinking. You should start to make those evaluations [whether to travel and by what means] and feel that it is a bit difficult. And I think for some it is a bit difficult. And I think that is a good thing." (S2)

The train trip to Durham seemed to have a spillover effect on some of the researchers that participated, making them more aware of alternatives to air travel. One of the PhD-candidates said that they were not aware of the possibility to travel by train between Norway and England before the trip, and that it opened their eyes for the possibility of travelling by train to continental Europe in the future.

"[...] I do believe that having travelled to England by train through INCLUDE has helped a bit to maybe make it easier next time, because you know how it is. That you like remember, "It wasn't that bad, it might sound bad, but it actually wasn't that bad", and that you can do it." (P2)

Considering filling out the self-reporting form as part of the environmental strategy, the respondents had mixed experiences. Six of the respondents explicitly agreed that the form was a good tool in the sense of increasing awareness of emission related to one's mobility practices. Nonetheless, four of the respondents felt strongly about the process being time consuming and a hassle to complete, competing with the time they got to spend on research.

"Like, within research there is one part that is the actual research, and then there are incredible amounts of administrative parts, different kinds of reporting. A lot of e-mailing

that does not really have anything to do with research. So [registering travels] is just another piece that have to compete with the time solemnly spent on research, right? And a lot of these pieces are very positive and very important, it's just that there are so many of them. And I mean I'm here... like my motivation is the actual research part. That's why I started this job. So, it's about getting enough time for that.” (S1)

Based on the respondents' experiences, INCLUDE's travel policy and measures to encourage sustainable mobility have had an effect in terms of positive spillover and knowledge sharing within the group, increased personal motivation to avoid air travels. It also seemed to have imposed a sense of accountability and increased pressure to justify their chosen modes of transportation, particularly when choosing to fly.

5.4 Respondents' suggested measures

When asked about suggested measures for making it easier to travel by sustainable modes of transportation, several of the researchers argued that options to flights needed to become more available. Considering economic incentives, the respondents mentioned that it should become cheaper to travel by other modes than flights (P2, P4), that it should be more expensive to fly (S3) and that universities should give economic incentives to choose other modes of transportation than aviation (P4). To change cost incentives was argued to demand big systemic changes.

“So yes, but the future... I mean, I hope... It depends on a big systematic change, right? It first and foremost depends on it becoming cheaper to travel environmentally friendly.” (P4)

It was also mentioned that it was necessary with a certain level of flexibility from project leaders and employers on how to spend project funding and management of one's working hours (P1, P2, S3) and that sustainability should be a more important factor in the distribution of research funding (P2, S4).

Two of the researchers (P3, S4) said that it was important to change what one is presented with as default values, and one of them (P3) particularly referred to how travel agencies present the option of flying as default on their web pages.

“I believe in these [...] ‘default values’, or what is presented as the standard. When you enter [a travel agency’s] front page – say I’m travelling to [continental Europe] – then it appears instantly “Okay, what flight do you wish to take?”. But if you maybe change the information people are presented with directly, I think that can help people to at least think “Ah okay, it’s actually possible to take the train there. [...] If everything is facilitated for you to fly, then that becomes the standard. [...] So it’s just as much about what attitudes you inherit from above, from the system. If everything is adapted for you to fly, that will become the standard” (P3)

Several of the respondents also said that the train routes that are offered should be improved. The three researchers with extensive experience travelling by train (P3, S2, S5) said that better options to reach Hamburg, Germany, from Oslo would make it a lot easier to substitute flying from Norway to continental Europe. According to them, Hamburg could be considered a transportation hub in Northern Europe, but it took at least a day to travel there from Oslo.

Considering the complexity of planning trips to continental Europe by alternative means, five of the respondents (P1, P3, P4, S2, S5) argued that it was crucial that the university developed competence at the institutional level that could help guide researchers when planning such trips.

All the respondents also discussed travel policy designs at institutional level, when asked about suggested measures. Half of them (P1, P2, P3, S1, S5) said that there was a need for policies that established clear guidance on how to make choices and prioritizations related to mobility for work related purposes, two (P2, S1) of which suggested step-by-step guidelines. Two of the researchers (S1, S3) underlined the need to clarify travels according to policies in advance, and the need to control whether employees’ actions align with these travel policies, at an institutional level.

“I believe that the simple, understandable travel recommendations – [...] guidelines in a way – they are even more important than a self-reporting system. [...] That you get the understanding [...] where everyone thinks [according to the travel policies] and believes that “The head of the department will also take a stand on whether I get to travel”. That it’s not just to say, “I travelled to Beijing, by the way”, right? Like, “Here’s is my receipt, hope it’s okay. I took the bus while I was there”. That it’s clarified according to these guidelines in advance. That people know that both the choice of traveling [in the first place] and the chosen mode of transportation must be approved, kind of.” (S1)

Three other respondents (P3, P4, S4) requested carbon budgets and guidelines on how much they could reasonably emit in relation to work travels. Two of the researchers (S2, S4) also said that it was not sufficient for travel policies to only contain incentives, but that there was a need for restrictive measures.

“Oh, well, I think for academics, you're going to have to, unfortunately, [insert] negative incentives or, like, more coercive ones. Limit how much people can travel. Give them a carbon budget instead of a financial budget” (S4)

It was clear that the respondents believed change is needed at several levels, as expressed by S5;

“I’m quite optimistic, but I believe it’s important to work at all levels, from individual to institutional, university- and societal level.” (S5)

6. Discussion of findings

A general frustration among the respondents was the complexity of choosing ground-based travel, compared to the availability of aviation. This was further enhanced by different obligations, both professionally and privately, which limited the time available to spend on travelling. As pointed out by one of the respondents, time is a highly valued resource in the Norwegian society. Considering the Norwegian context and available transportation modes, combined with expectations to be physically present for the sake of research while being time-efficient, the respondents seemingly experienced a certain ‘lock-in’ to air travel (Volden & Hansen, 2022). Hence, the respondents felt limited by existing systems and structures which made it difficult to travel sustainably, despite being motivated to do so.

The environmental strategy that the respondents of this study have been subject to is aimed at affecting individual consumption patterns but have not been sufficient to keep the researchers from flying all together. It would be interesting to study the effects of similar strategies that contain more coercive measures, rather than just encouragements and an implicit social sanctioning, to see if this might have a greater effect on individual behavior. Nonetheless, several of the barriers that

have been identified cannot be overcome solemnly at individual level, and there is followingly need to target these hindrances at a structural level to make sustainable mobility more available.

Additionally, a lack of open discussion and clear guidance on how to make prioritizations appear as drivers for air travel. Some of the PhD-respondents pointed to a lack of guidelines in their home institution as having possible negative spillover effects among colleagues, seeing that it can be easier to follow existing practices to fly if travel habits are not discussed and questioned by (institutional or project) leaders. Institutional expectations to be time and cost efficient were also described as significant drivers for air travel. These are drivers that can to a greater extent be affected by individuals engaging in conversation, but which at the same time are dependent on leadership – as argued by two respondents.

It is difficult to establish whether the researchers' actions have changed due to INCLUDE's strategy, or if the respondents of this study are particularly motivated and inclined to travel by sustainable means in the first place. The respondents did not express that the strategy in itself had changed their personal behavior directly, but some of them – particularly the PhD-candidates – did say that seeing others travel by train and/or bus made them more aware of the possibilities to do so. It was also interesting that several respondents were convinced that the strategy had directly affected mobility patterns of the group as a whole. Furthermore, being part of INCLUDE has evidently been an important motivational factor for the researchers in terms of choosing what can often be considered more complicated means of transportation than flying. The positive spillover effect due to shared motivation and shared experiences, a sense of responsibility, knowledge sharing, and support seems to have made it easier for some of the researchers to choose ground-based travel options, when time allowed them to do so.

Another important effect of the environmental strategy implemented by INCLUDE is the feeling the researchers had of someone holding them accountable for their actions. During the interviews, a feeling of shame and bad consciousness appeared to be present among most respondents when talking about instances where they had not been able to avoid flying. The self-reporting form probably played an important role in increasing their sense of responsibility for personal actions, but the presence of the conversation among colleagues and the leader of the group has also been central. At the same time the researchers spoke highly of their INCLUDE-colleagues' efforts to

travel sustainably and they were very understanding of specific situations that made it difficult for some to avoid flying, such as family obligations, general time constraints and remoteness.

7. Conclusion

This study has sought to increase the understanding of barriers to and opportunities for more sustainable academic mobility, by studying the experiences of ten researchers part of INCLUDE. As a research group, INCLUDE has implemented an environmental strategy encouraging the researchers to avoid air travel. According to these researchers' experiences, the greatest barriers to limit work-related air travels were time constraints due to other obligations, lack of viable alternatives to aviation, and the complexity of planning and carrying out ground-based travel. When asked about barriers to sustainable academic mobility, the respondents mostly discussed barrier to avoid flying rather than barriers to avoid travelling altogether, as some work-related travel was deemed unavoidable. With the status quo, the researchers experienced that they must be personally motivated to engage in ground-based travel, as current structures and societal expectations of efficiency rather promote air travel.

In the Norwegian context, upgrades to the train system that would make it easier and more efficient to reach continental Europe is seemingly a central opportunity to increase the availability of alternatives to flying. Economic incentives making ground-based travel more appealing than flying was also argued to be an important measure to reduce air travel in general. At institutional level the respondents' highlighted the responsibility of the University to communicate clear guidelines and expectations regarding sustainable mobility, as well as improved competence on how to organize ground-based travel for work. It was also evident that the respondents expected INCLUDE's environmental strategy to have had a positive effect on the group's total mobility patterns, and similar, though more coercive, strategies were encouraged at other institutions as well.

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9. Appendix: Interview guide (in Norwegian)

Seksjon	Eksempel på spørsmål som stilles
Introduksjon	- Fortell om deg selv og din hverdag. - Hvilken rolle spiller reising i ditt arbeidsliv?
Reisevaner	- Hvor ofte reiser du i jobbsammenheng, og av hvilke grunner? - Hvilke transportformer bruker du vanligvis på disse turene? Hvorfor velger du disse?
Reiseopplevelser	- Hvilke erfaringer har du med reising i jobbsammenheng? Hva har vært din opplevelse ved bruk av ulike transportmidler, både med tanke på planlegging og gjennomføring av reise? - Hvilken rolle spiller reisebyråtenester i din planlegging og gjennomføring av reise, og hvordan har deres tilbud påvirket dine reiser? - Hvis loggført reiser i reiseregistreringsskjema tidligere: utdyp rundt disse reisene det som er loggført. - Hvordan påvirker Include sine incentiver til bærekraftig mobilitet (f. eks. økonomisk støtte til lengre togreiser) dine reisevaner/valg, tror du? Hvordan påvirker det normer for jobbreiser?
Bærekraftig mobilitet	- Hvor stor vekt legger du på bærekraft når du planlegger jobbrelaterte reiser? - Hvordan skiller dette seg eventuelt fra private reiser? - Hvilke opplevelser har du hatt ved bruk av bærekraftige reiseformer (som tog, buss, bildeling, osv.)? - Har du noen gang valgt å delta digitalt for å unngå reise? Hva er din erfaring med digital deltakelse? - Normendringer før/etter COVID?
Kartlegging	- Hva tenker du om loggføring av reiseaktivitet og utslipp? - I hvilken grad har du loggført reisene dine? - I hvilke tilfeller har du eventuelt valgt å (ikke) loggføre reisene?

	• I hvilken grad har loggføring gjort deg mer bevisst på reisevirksomheten?
Refleksjoner rundt tiltak	• I hvilken grad ser du på mobilitet som en nødvendighet innenfor akademia? (Eksempler/spesifikke tilfeller) • Hva er dine personlige meninger rundt mobilitet i akademia? • Hvilke tanker har du om bærekraftig mobilitet i akademia i framtiden? • Har du forslag til tiltak som kan bidra til mer bærekraftig reisep praksis i akademia?
Avslutning	• Noe annet du ønsker å ta opp relatert til jobbreiser og bærekraftig mobilitet?