[ENGLISH VERSION]

Response Faculty Board on the report 'FSE is going green: travel behaviour of the staff'

The results of the survey held by the 'FSE is going green' working group 'Travel behaviour of the staff', are now available <u>on the Intranet</u>. The Faculty Board is grateful to the working group for their valuable advice and insights into the work-related travel behaviour of our staff.

The University of Groningen aims to reduce CO₂ emissions from air travel by 30% by 2026 (compared to 2019). To achieve this goal, UG-wide measures regarding work-related travel behaviour will be implemented. In this light, the recommendations in the report are valuable and the Faculty Board has therefore submitted them to the Green Office, which is taking the lead in developing University-wide measures.

In its survey, the 'Travel behaviour' working group proposes four measures, two of which are stimulating measures (monitoring CO_2 emissions and a climate contribution for air travel) and two are more restrictive measures (a CO_2 budget and a mandatory reduction). The Board does not rule out the possibility that more restrictive measures will be necessary in the long term, in order to achieve the intended reduction in CO_2 emissions. The Board would like to involve the staff in this process and hear their input on these measures; for example about what would work well and what would not. The Faculty Board will discuss this with the employees at an appropriate time.

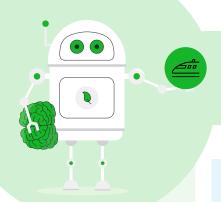
[NEDERLANDSE VERSIE]

Reactie Faculteitsbestuur op het rapport 'FSE is going green: travel behaviour of the staff'

De resultaten van de enquête van de 'FSE is going green' werkgroep 'Travel behaviour of the staff' zijn nu beschikbaar <u>op het Intranet.</u> Het Faculteitsbestuur is de werkgroep dankbaar voor hun waardevolle advies en inzichten in het zakelijk reisgedrag van onze medewerkers.

De Rijksuniversiteit Groningen heeft als doel om in 2026 de <u>CO₂-uitstoot ten gevolge van vliegreizen met 30% te verminderen</u> (ten opzichte van 2019). Om dit doel te bereiken zullen er RUG-breed maatregelen met betrekking tot zakelijk reisgedrag worden geïmplementeerd. In dit licht zijn de aanbevelingen in het rapport waardevol en het Faculteitsbestuur heeft ze daarom voorgelegd aan de Green Office, die het voortouw neemt in de ontwikkeling van universiteitsbrede maatregelen.

In haar enquête stelt de werkgroep 'Travel behaviour' vier maatregelen voor waarvan twee stimulerende maatregelen (het monitoren van CO₂-uitstoot en een klimaatbijdrage voor vliegreizen) en twee meer restrictieve maatregelen (een CO₂-budget en een verplichte reductie). Het bestuur sluit niet uit dat er op termijn ook meer restrictieve maatregelen nodig zullen zijn om de beoogde vermindering van CO₂-uitstoot te behalen. Graag wil zij de medewerkers hierbij betrekken en hun input op deze maatregelen horen; bijvoorbeeld over wat goed zou werken en wat niet. Het Faculteitsbestuur zal hierover op een gepast moment in gesprek gaan met de medewerkers.



FSE is going green:

Travel behaviour of staff



BACKGROUND

FSE aim:

To reduce travelrelated emissions, following the UG goal of 30% reduction of CO₂ emissions from air travel by 2026

Current policy:

Trips within 800km (or 9 hours) should be made by train

CURRENT POLICY

THE SURVEY

The FSE is going green *Travel behaviour of staff* working group conducted a survey amongst FSE staff to explore business travel behaviour and possible measures to reduce air travel

The survey asked about:

- Current travel behaviour
- Use of VCK booking portal
- Preference for online vs. physical meeting
- Awareness of UG policies
- Opinions on CO₂-reduction measures

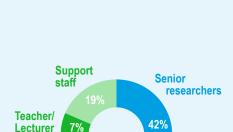
362

valid responses from 16 FSE institutes



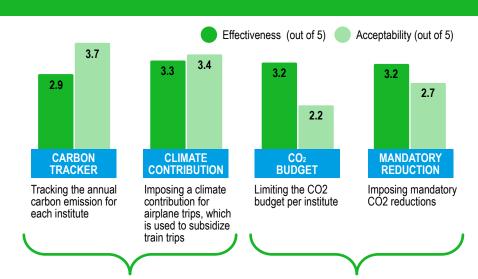
76%

made at least 1 business trip by plane in 2019 (mostly within Europe)



Junior researchers

RESULTS: EVALUATIONS OF PROPOSED MEASURES



Most acceptable measures to reduce CO2 emissions due

to reduce CO2 emissions due to business travel

Least acceptable measures:

these are perceived as restrictive measures and the working group suggests implementing them first as pilot projects and investigating staff concerns

OTHER RECOMMENDATIONS

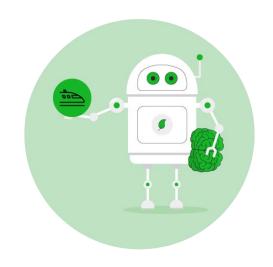
- Close loopholes in existing policies: enforce use of UG booking system
- Make policies on short-haul flight avoidance well known among staff
- Encourage and facilitate online meetings
- Address staff questions and concerns about policies, possibly through the Green Office
- Make train trips easier to book

FSE is Going Green: Travel behaviour of the staff

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- ² UG Green Office
- ³ Energy and Sustainability Research Institute Groningen (ESRIG)
- ⁴ Faculty office
- ⁵ Groningen Research Institute of Pharmacy (GRIP)
- ⁶ Van Swinderen Institute for Particle Physics and Gravity (VSI)
- ⁷ Groningen Institute for Evolutionary Life Sciences (GELIFES)





SUMMARY

In a survey among FSE staff, two policies to reduce CO₂ emission due to business travel were found to be the most acceptable: tracking the annual carbon emission for each institute, and imposing a climate contribution for airplane trips, which is used to subsidize train trips. We recommend implementing these policies after working out their practical details. In contrast, imposing mandatory CO₂ reductions and limiting the CO₂ budget per institute are perceived as restrictive measures, which we suggest implementing only as pilot projects, after investigating staff concerns. In addition to introducing new policies, we recommend closing loopholes in existing policies, making current and planned policies on short-haul flight avoidance well known among staff, to encourage and facilitate online meetings, to address staff questions and concerns about policies, and to make the booking of international train trips easier.

CONTEXT AND SCOPE

In Spring 2022, the Faculty board started the *FSE* is *Going Green* program [1], which aims to make FSE operations more environmentally sustainable by limiting resource use, waste production, and greenhouse gas emission. The working group *Travel behaviour of the staff* has looked specifically into ways to reduce greenhouse gas emissions due to business travel, in particular by airplane. The target reduction is 30% by 2026, in line with the UG sustainability goals [2]. The working group did not consider commuting and trips within the Netherlands, as these were found to be minor sources of CO₂ in a 2020 Arcadis study of the nine NWO institutes, and a 2021 study of astronomy research in the Netherlands [3]. The UG policy on parking permits addresses pollution by commuting.

APPROACH

Since 2019, policy at UG has been that trips within 500 km (or 6 hours train travel time) from Groningen cannot be taken by airplane; as of 2023, this radius is extended¹ to 800 km (or 9 hours) [4]. In November 2022, we conducted a survey among all 2889 staff employed by FSE institutes, asking about travel behaviour, use of travel agency portal, preference for

¹ Implemented after the survey was conducted.

online vs physical meetings, awareness about UG mobility policies, and their opinions on additional measures for reducing CO_2 emissions connected with UG travels. An open box was added at the end of the survey to collect staff members' comments and suggestions about the topic. The target group includes junior (45%) and senior (11%) scientific staff, teaching staff (5%), support staff (23%), and researchers on temporary contracts such as PhD students and postdocs (16%). Undergraduate students were not part of the survey, since FSE has no legal means to influence their travel behaviour. See Appendix A for the full text of the questionnaire. We received 362 valid² responses (13%) from 16 institutes and offices across FSE. The full results of the survey are in Appendix B, and the main findings are summarized below.

RESULTS ON PREFERRED POLICIES

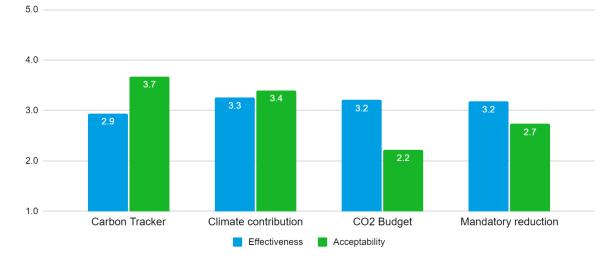
We presented respondents with four additional measures:

- 1. Launch a carbon tracker showing how much CO₂ each institute emits by traveling;
- 2. Introduce a small (e.g. 5%) climate contribution for airplane trips, which is used to sponsor train trips through first class tickets, frequent traveller cards, etc.;
- 3. Impose mandatory emission reduction targets for flights on all institutes (scaled with institute size);
- 4. Give each department a limited CO₂ budget for traveling (scaled with institute size).

We asked participants to indicate how effective (i.e., in reducing the CO₂ emission caused by staff members' flying behaviour) and acceptable (i.e., with minimal impact on their work) they found each measure. The table and figure below report these scores on a 5-point scale.

	EFFECTIVENESS		ACCEPTABILITY	
	Mean	Median	Mean	Median
Carbon tracker	3.0	3	3.7	4
Climate contribution	3.3	3	3.4	4
CO ₂ budget	3.2	3	2.2	2
Mandatory reduction	3.2	3	2.7	3

Respondents' evaluation for the proposed measures (means)



² Responses with at least the first question related to UG mobility completed are considered valid.

OTHER RESULTS

Travel behaviour: Among the staff members who indicated traveling in 2019, the majority (65%) took 1 to 5 flights. Senior researchers clearly travel the most. The most chosen destination was Europe (131 flights out of 196). Some institutes fly much more than others.

Portal use: Booking trips via VCK (UG travel agent) is done always by 24%, usually by 34%, sometimes by 21%, and never by 21% of respondents. The latter number is surprisingly high, and is especially high (41%) among support staff. This is unexpected since FSSC is supposed to refuse reimbursement of trips which are booked outside the portal.

Policy awareness: The large majority of respondents were aware of the UG mobility policy implemented in 2019 (78%) and supported it to some extent (84%). When asked about the 2023 update of the policy, about half of them were informed about it (47%) and indicated supporting it to some extent (63%). Few people indicated being strongly against these two policies (3% and 9% for the old and new updated policy respectively).

Meeting preference: Attending meetings online works in most or all cases for 18%, in ~half the cases for 43%, and in some or no cases for 40% of respondents. The type of meeting is likely to play a role, as small targeted (business / committee) meetings may be more suitable for an online setting than larger open-ended meetings such as brainstorms and conferences.

Further suggestions: Finally, the respondents came with questions and suggestions of their own. The most common remarks were: trains are often delayed or crowded; policies need to be fair toward staff with special needs; some airplane travel will always be needed. A common question is how exactly travel times and distances are calculated.

DISCUSSION

Policy acceptance: For all four proposed measures, the differences in acceptability between institutes are small, suggesting that the variation in acceptability between measures is real. Push measures (i.e., taxes or restrictions) are often perceived as less acceptable than pull measures (e.g., discounts), but they usually are more effective. Research suggests using combinations of both measures. In addition, taxes and monetary contributions are perceived to be more effective and acceptable when revenues are allocated within the same domain (e.g., climate contribution for flying going to subsidize train travel) [7, 8, 9]. We suggest implementing first the two policies that were considered to be more acceptable (i.e., carbon tracker and climate contribution). We then suggest investigating in more depth the less acceptable policies (e.g., CO₂ budget and mandatory reduction), and targeting the concerns that emerge (e.g., previous research suggests that perceived unfairness might play a substantial role) [9]. In addition, implementing the more restrictive policies as pilots might be a solution, as the acceptability of a policy tends to increase after its implementation [10].

Perceived effectiveness: The four proposed measures are seen by FSE staff as about equally effective (see Table above) to reduce CO₂ emissions. This is surprising as differing trends between effectiveness and acceptability may be expected. It may be that staff members have difficulty separating effectiveness and acceptability. The perceived effectiveness of the four measures varies considerably between institutes, which may indicate differences in travel culture. Alternatively, this variation may again indicate respondents' uncertainty as to what measures would be effective. Literature indeed suggests that people are not accurate when estimating the effectiveness of such policies [7]. For example, pricing is known to affect air travel substantially (e.g., [5]).

CAVEATS

Demographics: The distribution of respondents over staff types mostly follows the intrinsic distribution, except that senior researchers are overrepresented and junior researchers (PhDs and Postdocs) underrepresented. The response fraction varies considerably between institutes, possibly because of the way that the questionnaire was distributed (via the institute directors). Future follow-up surveys may use stratified sampling to be representative of all career stages and scientific disciplines across FSE.

Sample size: The total number of respondents is high enough to draw conclusions for FSE as a whole (e.g., [11]). Only a few institutes have enough responses for meaningful subsamples (e.g., [12]), so we interpret our survey results only in aggregate. Due to the way that the survey was introduced, the sample is of a convenience nature, rather than strictly controlled, but we nevertheless consider it useful for our purpose.

Potential bias: The responses to our survey may be biased because climate-minded staff are more likely to respond. Such bias is especially likely for the question about post-pandemic travel behaviour, where 65% claim to have flown less in 2022 than in 2019, and 85% of these claim that sustainability is a reason for this change. Adding a lottery (the chance of winning a small prize) may help against this bias in future surveys.

RECOMMENDATIONS AND FURTHER STEPS

Two policies are likely to meet with broad acceptance among FSE staff: tracking the annual carbon emission for each institute, and imposing a small climate contribution for airplane trips, which is used to sponsor train trips. More restrictive policies, such as limiting the CO₂ budget of each institute and imposing mandatory reductions in CO₂ emission, may meet with some resistance, and should only be implemented as pilot projects or after studying the concerns of FSE staff.

Before the new policies can be implemented, they need to be worked out further. In particular, the carbon tracker could use the open-source tool developed in [6], but it must be clarified where the tool gets its input data. For the contribution measure, the questionnaire suggested a 5% surcharge, but the final number may be different. The contribution could be charged through the UG travel portal, but it needs to be worked out how the funds would be redistributed.

Besides considering new policies, we recommend the following steps:

- 1. Close loopholes in existing policies. In exceptional cases, requests for bookings using a travel agency other than the internal RUG agency may be granted, but ~20% of staff never using the portal is clearly too much. The high acceptance rate of the old and new UG travel policies suggests that this behaviour is due to a lack of awareness, rather than a sign of resistance. We do, however, note that booking train trips via VCK, especially across multiple countries, is not always straightforward.
- 2. **Make policies well known.** A significant fraction (~55%) of FSE staff was unaware of the upcoming travel policy one month before its implementation, and ~20% unaware even of the one introduced in 2019. Through newsletters and messages to new staff, travel regulations should be announced more prominently. The UG travel portal can help reminding too.
- 3. **Encourage and facilitate online meetings where possible.** Short and/or targeted events such as thesis defenses, colloquia/seminars, and business/committee meetings should become online/hybrid as much as possible. Part of this policy may be establishing an online etiquette (turning cameras on, identifying with full name, etc.). Rooms with video equipment should be available to all staff.

- 4. Address questions and concerns about policies. The responses suggest that most FSE staff are willing to adopt a pro-train policy, but that they have questions about its practical implementation. For broad acceptance of policies it is important that these concerns are properly addressed.
- 5. *Make train trips easy to book from the UG portal.* Staff would be much more willing to travel by train if the booking process were smooth and convenient. This should be a requirement for the 2023 version of the UG travel portal.

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Appendix A: Questionnaire

Welcome!

This **questionnaire on travel behavior** is developed by the Mobility Working Group of FSE at the University of Groningen (UG).

The **aim** of this survey is to have an overview of FSE staff member international **travel behavior**, **acceptability** of mobility policies and **experience** with the use of the VCK portal. Your responses will be useful to discuss how our Faculty can reduce its flight-related emissions.

This survey takes **5 minutes** to complete. Your participation in this survey is **anonymous** and **voluntary**. If you decide to participate, you can stop at any time without having to provide a reason. Research data that are published, for example in university reports or scientific journals, cannot be used to identify you.

By clicking the "Yes, I consent" button below, you indicate that: "I read and understood the information above, I voluntarily participate in this survey and I give the consent to the use of my responses as data".

O Yes, I consent		
○ No		

Which institute or department are you from?
O Bernoulli
O ENTEG
○ ESRIG
GBB
O GELIFES
○ GRIP
OISEC
○ Kapteyn
○ Stratingh
O Van Swinderen
ZIAM
Other
What is your role at the university?
O Senior researcher
O Junior researcher (PhD or Post doc)
O Teacher/Lecturer
O Support staff

Have you done any business trips for the UG (review panels, conferences, EU consortium meetings, etc.) in 2019?
○ Yes
○ No
○ I wasn't' working at the UG in 2019
How many UG business trips (review panels, conferences, EU consortium meetings, etc.) have you done by plane in 2019 (before COVID)? ³
\bigcirc 0
O 1-5
O 6-10
O 11 or more
To which continent(s) did you fly the most in 2019?4
Europe
North or South America
Asia
Africa
Oceania
How many UG business trips (review panels, conferences, EU consortium meetings, etc.) outside the Netherlands did you take by <u>train</u> in 2019 (before COVID)? ³
○ o
O 1-5
O 6-10
O 11 or more

³ Question shown only to people who indicated doing business trips in 2019 ⁴ Question shown only to people who indicated taking the plane in 2019

When you need to travel for work outside the N (i.e., University of Groningen Booking Portal) or reimbursement later? ³	Netherlands, do you book your trips via the VCK Travel or do you buy them yourself and ask for
O I never use the UG Portal, I buy tickets by	myself
O I sometimes use the UG Portal	
O I usually use the UG Portal	
O I always use the UG Portal	
How is you experience with the VCK Travel?5	
Negative Positive	
Easy Difficult	
Slow Fast	

⁵ Question shown only to people who indicated using the portal

Next, we would like to know how effective and acceptable you find the following measures.

Please, indicate to what extent you think these policies are **effective** in reducing the CO2 emission caused by staff members' flying behaviors and **acceptable** for you to be implemented at the UG.

1 star = very much ineffective/unacceptable 5 stars = very much effective/acceptable

Launch a **carbon tracker** that makes it visible how much CO2 each institute emits in terms of traveling

Effective Acceptable

Install a University of Groningen "climate contribution", such as a surcharge on flight ticket prices (e.g., 5%) which goes into a fund to subsidize train travel (e.g., BAHN card, 40% NS card, interrail options)

Effective Acceptable

Each department has a limited CO2 budget for traveling (scaled with institute size)

Effective
Acceptable

Introduce mandatory emission reduction targets for flights in all institutes (scaled with institute size).
Effective Acceptable
Do you think attending a meeting online is an acceptable alternative to attendance in person?
O Yes, all the time
Yes 75% of the time
○ Yes, 50% of the time
Yes, 25% of the time
O No, never
Thank you for your responses so far! We are almost done.
We would like to know if you have changed your work trip habits now compared to before Covid. Think about this year (2022): are you taking more , less or the same amount of flights than before Covid ?
O Many more flights
O More flights
The same amount of flights
O Fewer flights
O Far fewer flights
For which reasons are you taking less flights than before? Please, select all that apply.
Sustainability
Money
Time
Covid
Comfort
Other

Were you aware of this policy? O Yes O No To what extent are you in favor or against this mobility policy? Strongly against Against O Somewhat against Neither in favor nor against Somewhat in favor O In favor Strongly in favor Did you know that a new updated mobility policy is going to be implemented in January 2023? For all of the destinations that can be reached within 9 hours by train and/or are within a distance of 800 km, UG employees must take the train." O Yes O No To what extent are you in favor or against this new updated mobility policy taking place in January 2023? O Strongly against Against O Somewhat against O Neither in favor nor against O Somewhat in favor O In favor Strongly in favor

Since a few years, a new **mobility policy** has been in place at the University of Groningen:

500 km, UG employees must take the train."

For all of the destinations that can be reached within 6 hours by train and/or are within a distance of

Thank you for your participation!

Please, write in the box below any **comment or suggestion** you might have or **any aspects** that you think were **not covered** in this survey.

If you have any question about this survey or the FSE Mobility group, contact Nils at n.elzinga@rug.nl.

Please, click the button once more to submit your response .	

Appendix B: Full results of the survey

Demographics

The majority of respondents are from Bernoulli (17%) and ENTEG (14%). Respondents indicating 'others' are from FTD, Science Linx, SSE/ENTEG; 9 of them did not indicate their institute (Fig 1). The majority of respondents are Senior researchers and Junior researchers, i.e., PhDs and Post-docs (Fig 2).

Figure 1.

Institutes

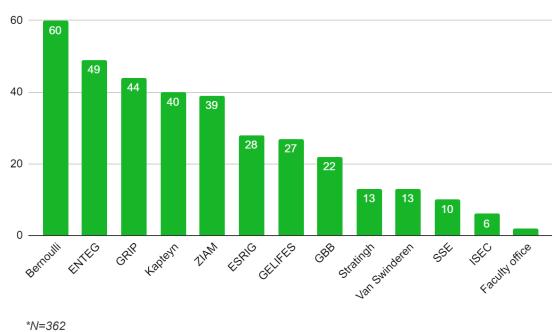
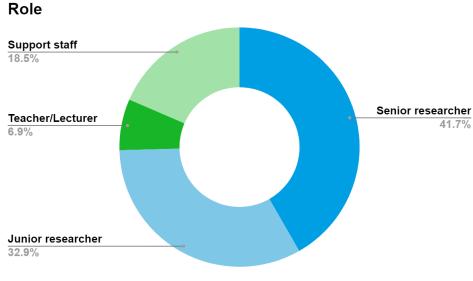


Figure 2.

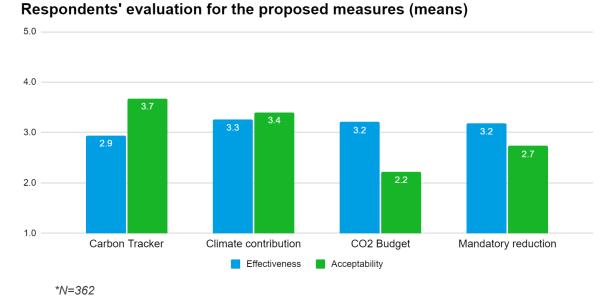


*N=362

Proposed measures

Participants were asked to indicate on a 5-point scale ⁶ how effective (i.e., in reducing the CO₂ emission caused by staff members' flying behavior) and acceptable (i.e., with minimal impact on their work) they found each measure. Respondents evaluate the effectiveness of each policy to a similar extent. The carbon tracker was evaluated as most acceptable, followed by the climate contribution and the mandatory reduction. The least acceptable measure was the CO₂ budget.

Figure 3.



⁶ Note: despite explicit instructions and a scale designed from 1 to 5, due to a bug in the survey platform one participant answered '0' when asked about acceptability for a CO2-budget policy. The score was transformed into '1'.

Business trips by plane in 2019

Ca. half of respondents indicated traveling in 2019 for business trips. The majority (65%) took between 1 to 5 flights in 2019 (Fig 4). The most chosen destination was Europe: 131 flights (Fig 5).

Figure 4.

Business trips by plane in 2019

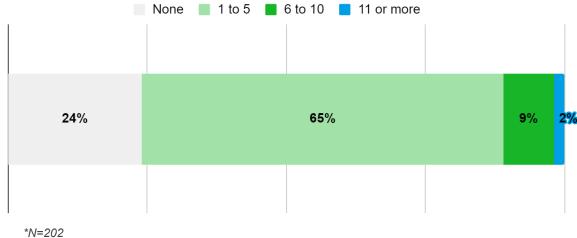
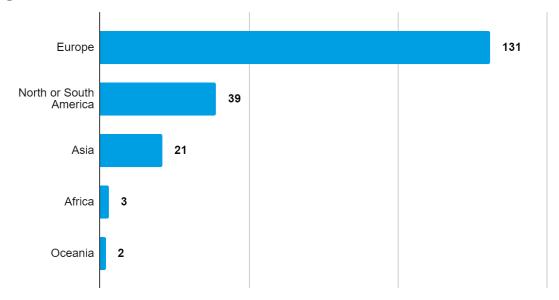


Figure 5.

Flight destinations



*N=133

VCK use

Only 23% of respondents use VCK to book travels outside the Netherlands. 22% reported never using it (Fig. 6) and this number doubles when considering support staff (42%). The use of VCK is perceived as quite positive, but not particularly fast and quite difficult (Fig 7).

Figure 6.

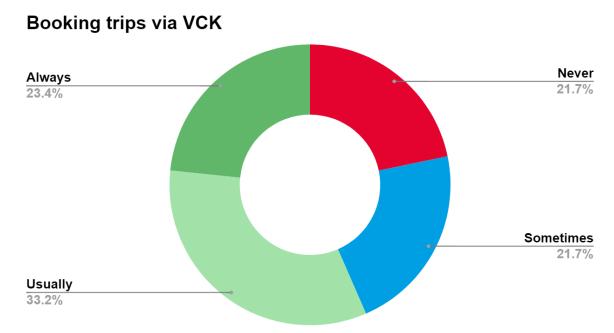
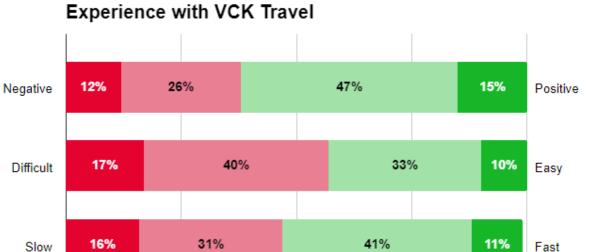


Figure 7.

*N=184

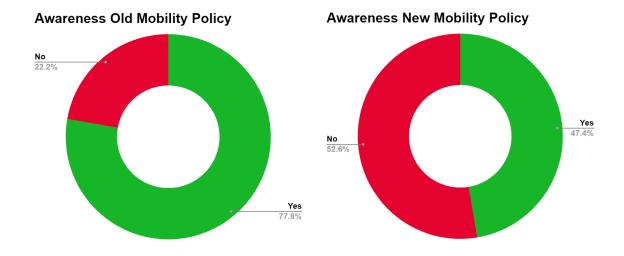


*N=184

Support for mobility policies

The large majority of respondents were aware of the UG mobility policy implemented in 2019 (78%) and the new mobility policy becoming effective in January 2023 (63%).

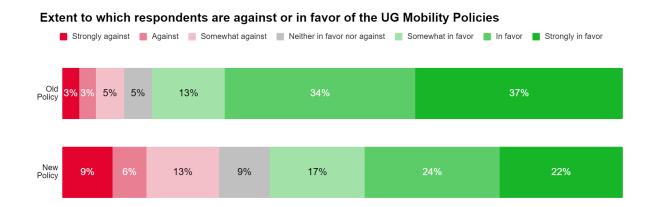
Figure 8.



*N=342

Participants were asked on a 7-point scale to indicate the extent to which they were in favor or against the two policies. The large majority of respondents were aware of the UG mobility policy implemented in 2019 (78%) and supported it to some extent (84%). When asked about the new updated version of the policy (900 km/8 h), about half of them were informed about it (47%) and indicated supporting it to some extent (63%).

Figure 9.



Meeting preferences

When asked about meeting preferences, 40% of respondents stated that online attendance is an acceptable alternative to in-person attendance about half of the time.

Figure 10.

Online meetings as an alternative

