Freie Universität Berlin

UNIVERSITY ALLIANCE FOR SUSTAINABILITY

EXPLORING ACADEMIA'S CARBON FOOTPRINT

UAS MOBILITY SURVEY

Rita Bitar Deeb
Ana María Isidoro Losada

University Alliance for Sustainability

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Executive Summary

The Freie Universität Berlin (FUB) was the first university in Germany to declare a state of climate emergency in December 2019, including a commitment to achieve carbon neutrality by 2025. This decision highlights the universities' commitment to embed sustainability systematically and climate protection in their institutions and international networks. In the last years, the university has made great progress in both quantifying and reducing many greenhouse gas (GHG) emissions. One of the areas in which there is still potential for reducing CO_2 emissions is that of academic business, research and study-related air travel. The goal of this report is to provide insights into University Alliance for Sustainability (UAS)-participants habits and attitudes about flying, travelling, carbon offsets and virtual communication as a key step to create and implement emissions reduction strategies.

- Most of the respondents (20) travelled between once and twice in the last two years (Jan. 2018 - Dec. 2019), followed by fourteen who travelled between five and nine times in the same period. Eight respondents indicated that they flew more than ten times. Six stated that they had not flown at all in the last two years for professional/academic reasons.

- Broken down by universities, three of the eight frequent flyers (>10) belonged to the FUB, two to the UBC and one to HUJI, PKU, and SPbU.

- Out of the group of frequent flyers (>10), professors travelled the most, followed by senior researchers, heads of department and postdocs. Students, on the other hand, flew less (1-2 times), some of them even indicated that they had not flown at all.

- The most recurrent destination during the years 2018/2019 was Europe, followed by Asia and North America.

- The majority of the participants of the FUB and the UBC were in favor of reducing their average number of air trips. In contrast, most participants from HUJI, PKU and SPbU stated that they would like to fly more often.

- When analyzing according to the status groups, a thing that stands out is that all respondents in the management/administrative-group would like to fly less. Also PostDocs showed a slight tendency to want to travel less.

- The most cited reason to reduce their air travel was environmental or climate-related concerns. Other reasons were related to time and costs. The main motives in favor of increasing the number of flights consisted in networking and maintaining or initiating new

cooperations. It was also mentioned that (more) air travel is considered necessary for carrying out research and fieldwork.

- Environmental concerns, followed by money and time were mentioned as very important aspects when choosing a means of transport. The factor time (length of trip) and money were ranked as important, followed by aspects of comfort and personal concerns (family obligations, health issues).

- Most respondents indicated the use of the train as a very likely alternative to flights, followed by the option of the use of virtual conferencing and communication technology. For most respondents, the most unlikely alternative to flying was the use of the car, followed by the bus.

- The HUJI participants emphasized that there are no alternatives to air travel when it comes to attending a conference, meeting or workshop outside their country.

- For a distance of up to 1000 km, most participants said they chose the train as the most common means of transport, followed by airplane. For distances of either up to 800 km or up to 500 km, it was stated that travel by car, bus or train was most appropriate.

- In general – and in particular for the participants from the FUB, and thus the European area – it is noteworthy that the vast majority of respondents indicated that they considered a distance of either up to 800 km or up to 500 km as reasonable distance for using ground transport. Given the very well developed rail and bus network within Europe, the relatively low willingness to travel up to 1000 km or even 1500 km is particularly interesting. This is particularly noticeable because most of the FUB participants indicated that they would be willing to travel by train between 6-8 hours and more than 9 hours.

- Possible incentives to opt for alternatives rather than air travel were university guidelines making alternatives mandatory for certain trips, cheaper train/car sharing, followed by better conditions for virtual communication/conferencing.

- Networking possibilities and field research are the strongest individual motivators for travelling.

- Almost ninety percent of all respondents confirmed that they think about the impact of their flights on climate change and pollution. Differentiated by gender, it can be observed that without exception all women stated that they are quite concerned about the ecological and environmental effects of their flight behavior; while almost ten percent (5) of the men stated that they are not concerned.

- Most respondents manifested a willingness to pay 26-50 euros per flight for carbon offset schemes.

- Neither universities nor (inter)national grants/ funding agencies reimburse the purchase of offsets: The current rules and regulations at universities do not provide for carbon compensation payments to be claimed as part of the reimbursement of travel expenses.

- The "lack of informal exchange", followed by "technical problems" and "less committed people" were mentioned as central aspects that hinder the greater use of video conferencing systems ('discouraging' and 'very discouraging'). The aspect "lack of informal exchange" stands out as the most clearly demotivating factor, as twenty-one respondents classified this aspect as "very discouraging". This unambiguous statement also corresponds with the findings that most respondents consider the aspects of academic networking to be clearly very important when travelling.

- Overall, psychological factors seem to have a major influence on the use or non-use of virtual communication systems. The impression that videoconferencing offers less/no opportunities for informal exchange has a very demotivating effect. Furthermore, many respondents find the fact that people are less engaged and that there are cultural barriers very discouraging.

- All respondents reported that during the rise of COVID-19, their use of videoconferencing technology for studying and/or business related activities has increased.

Zusammenfassung

Die Freie Universität Berlin (FUB) hat im Dezember 2019 als erste Universität in der Bundesrepublik den Klima-Notstand ausgerufen und sich unter anderem verpflichtet, bis 2025 klimaneutral zu werden. Mit dieser Entscheidung unterstreicht die Freie Universität ihr Engagement, Nachhaltigkeit und Klimaschutz systematisch im Rahmen ihrer Institutionen sowie den internationalen Netzwerken zu verankern. In den letzten Jahren hat die FUB große Fortschritte sowohl bei der Quantifizierung als auch bei der Reduzierung vieler Treibhausgasemissionen erzielt. Eines der Gebiete, in denen noch Potenzial zur Reduzierung der CO_2-Emissionen besteht, ist der akademische dienst-, forschungs- und studienbezogene Flugreiseverkehr. Das Ziel dieses Berichts ist es, Einblicke in die Einstellungen der University Alliance for Sustainability (UAS)-Teilnehmer*innen zu den Themenfeldern Fliegen und Reisen, CO_2-Kompensationen sowie zur virtuellen Kommunikation zu erhalten, um daraus in einem nächsten Schritt Strategien zur Entwicklung und Umsetzung von Maßnahmen zur Reduzierung von CO_2-Emissionen ableiten und entwickeln zu können.

- Die meisten Befragten (20) gaben an, in den letzten zwei Jahren (Jan. 2018 - Dez. 2019) ein- bis zweimal gereist zu sein. Vierzehn Befragte reisten während des entsprechenden Zeitraums zwischen fünf und neun Mal. Acht Befragte gaben an, dass sie mehr als zehn Mal geflogen sind. Sechs hingegen gaben an, dass sie in den letzten zwei Jahren aus beruflichen/akademischen Gründen überhaupt nicht geflogen seien.
- Nach Universitäten aufgeschlüsselt, gehörten drei der acht Vielflieger (>10) der FUB, zwei der UBC und einer HUJI, PKU und PSbU an.
- Von der Gruppe der Vielflieger (>10) reisten die Professoren am meisten, gefolgt von Senior Researchers, Head of Departments und Postdocs. Die Studierenden hingegen flogen durchschnittlich zwischen 1-2 Mal, einige von ihnen gaben sogar an, überhaupt nicht geflogen zu sein.
- Das häufigste Reiseziel in den Jahren 2018/2019 war Europa, gefolgt von Asien und Nordamerika.
- Die Mehrheit der Teilnehmer*innen der FUB und der UBC gab an, dass sie ihre durchschnittliche Flugreisehäufigkeit reduzieren wollen würde. Im Gegensatz dazu gaben die meisten Teilnehmer*innen der HUJI, PKU und SPbU an, dass sie gerne öfter fliegen würden.

- Bei der Auswertung nach den Statusgruppen fällt auf, dass alle Befragten in der Management-/Verwaltungsgruppe weniger fliegen möchten. Auch PostDocs zeigten eine leichte Tendenz, weniger reisen zu wollen.

- Der meistgenannte Grund, weswegen Teilnehmer*innen, die Häufigkeit ihrer Flugreisen reduzieren wollen würden, waren ökologische oder klimabedingte Bedenken. Weitere wichtige Aspekte waren Zeit und Kosten.

- Zu den Hauptgründen für eine Steigerung der Flugreisen zählten Reiseanlässe wie die Vernetzung und Aufrechterhaltung bzw. Initiierung neuer Kooperationen. Des Weiteren wurden (mehr) Flugreisen für die Durchführung von Forschung und Feldarbeit als notwendig erachtet.

- Umweltbelange, gefolgt von Geld und Zeit, wurden als besonders wichtige Aspekte bei der Wahl des Transportmittels genannt. Der Faktor Zeit (Länge der Reise) und Geld wurden als wichtig eingestuft, gefolgt von Aspekten des Komforts und persönlichen Anliegen (familiäre Verpflichtungen, Gesundheitsfragen).

- Die meisten Befragten gaben die Nutzung des Zuges als sehr wahrscheinliche Alternative zu Flugreisen an, gefolgt von der Möglichkeit des Einsatzes virtueller Konferenz- und Kommunikationstechnologie. Für die meisten Befragten war die Nutzung des Autos die unwahrscheinlichste Alternative zum Fliegen, gefolgt von der Nutzung des Busses als Transportmittel.

- Die Teilnehmer*innen der HUJI betonten, dass es keine Alternativen zu Flugreisen gibt, wenn es darum geht, bspw. an einer Konferenz, einer Besprechung oder einem Workshop außerhalb ihres Landes teilzunehmen.

- Für Entfernungen von bis zu 1000 km gaben die meisten Teilnehmer*innen an, dass sie den Zug als das gebräuchlichste Transportmittel wählten, gefolgt vom Flugzeug. Für Entfernungen von entweder bis zu 800 km oder bis zu 500 km wurde angegeben, dass eine Anreise mit dem Auto, Bus oder Zug am angemessensten sei.

- Generell - und insbesondere für die Teilnehmer*innen der FUB und damit aus dem europäischen Raum - ist anzumerken, dass die überwiegende Mehrheit der Befragten angab, dass sie eine Entfernung von bis zu 800 km bzw. bis zu 500 km als angemessene Entfernung für die Nutzung von Auto, Bus oder Zug erachten. Angesichts des sehr gut ausgebauten Bahn- und Busnetzes innerhalb Europas ist die relativ geringe Bereitschaft, bis zu 1000 km oder sogar 1500 km zu fahren, besonders auffällig. Insbesondere wenn man berücksichtigt, dass die meisten FUB-Teilnehmer*innen angaben, dass sie bereit wären, zwischen 6-8 Stunden bzw. mehr als 9 Stunden mit dem Zug zu reisen.

- Zu den meist gewählten Anreizen, die dazu beitragen könnten, andere Beförderungsmittel zu nutzen als das Flugzeug, zählten verpflichtende Universitätsrichtlinien, billigere Zugreisen sowie Auto-Sharing, gefolgt von besseren Bedingungen für virtuelle Kommunikation/Konferenzen.

- Bei der Frage nach den zentralen individuellen Reisegründe/-anlässen zählten Vernetzungsmöglichkeiten und Feldforschung zu den am häufigsten genannten Aspekten.

- Fast neunzig Prozent aller Befragten gaben an, dass sie sich beim Reisen Gedanken über die Klima- und Umweltauswirkungen ihrer Flüge machen. Differenziert nach Geschlechtern zeigt sich, dass alle Frauen ausnahmslos angaben, dass sie über die ökologischen und umweltbedingten Auswirkungen ihres Flugverhaltens besorgt zeigen, während fast zehn Prozent (5) der Männer angaben, dass sie darüber nicht nachdenken.

- Die meisten Befragten gaben an, dass sie bereit wären zwischen 26 und 50 Euro pro Flug für CO_2-Kompensationsprogramme zu zahlen.

- Weder Universitäten noch (inter-)nationale Fördergeldgeber erstatten den Kauf von Kompensationen: Die derzeitigen Regelungen und Vorschriften an den Universitäten sehen nicht vor, dass Kompensationszahlungen als Teil der Reisekostenerstattung geltend gemacht werden können.

- Als zentrale Aspekte, welche einer stärkeren Nutzung von Videokonferenzsystemen als hemmend entgegenwirken, wurden insbesondere der "Mangel an informellem Austausch" genannt, gefolgt von "technischen Problemen" und "weniger engagierten Personen". Der Aspekt "Mangel an informellem Austausch" sticht am deutlichsten als demotivierender Faktor hervor. Dies korrespondiert auch mit dem Ergebnis, dass die meisten Befragten die akademische Vernetzung bei Reisen als besonders relevant einordnen.

- Insgesamt scheinen psychologische Faktoren einen großen Einfluss auf die Nutzung oder Nichtnutzung von virtuellen Kommunikationssystemen zu nehmen. Der Eindruck, dass Videokonferenzen weniger/keine Möglichkeiten zum informellen Austausch bieten, wirkt sehr demotivierend. Darüber hinaus empfinden viele Befragte die Tatsache, dass die Menschen weniger engagiert sind und dass es kulturelle Barrieren gibt, als sehr entmutigend.

- Alle Befragten bestätigten, dass während der COVID-19-Pandemie die Nutzung der dienst- oder studienbezogenen virtuellen Kommunikationstechnologien zugenommen hat.

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Rita Bitar Deep and Ana María Isidoro Losada
Institution: Freie Universität Berlin

Introduction

The University Alliance for Sustainability (UAS) mobility survey is one of three modules of a research project commissioned by the Unit for Sustainability and Energy Management at the Freie Universität Berlin (FUB). The aim of the research project is to provide a preliminary evaluation of business travel policies based on a) a systematic compilation of best practices, b) the execution and analysis of individual interviews, and c) a small sample survey. This project is part of a broader initiative that seeks to develop a climate friendly and more effective travel policy for the UAS. The travel guidelines are going to apply to all staff and guests associated with the UAS, and are aimed to prioritize decarbonization and sustainability activities while building a strong international network. These guidelines can also contribute to inform UAS partner universities and inspire a broader academic community to take appropriate steps in a similar direction.

This report presents the survey results. The objective was to gain a better understanding of business or study related travel patterns, motivations, attitudes and habits. The questionnaire was developed in close exchange with the Unit for Sustainability and Energy Management. It was designed and managed using the SurveyMonkey online survey tool. The questionnaire included 47 questions and was developed to investigate the importance and influence of environmental attitudes on academic air travel behavior, among other aspects. Accordingly, it examined existing and potential air travel behavior; attitudes towards air travel, including the willingness to adapt behavior to reduce environmental impact, for example by virtual communication technologies. The questionnaire focusses on four main cluster (see Figure 1):
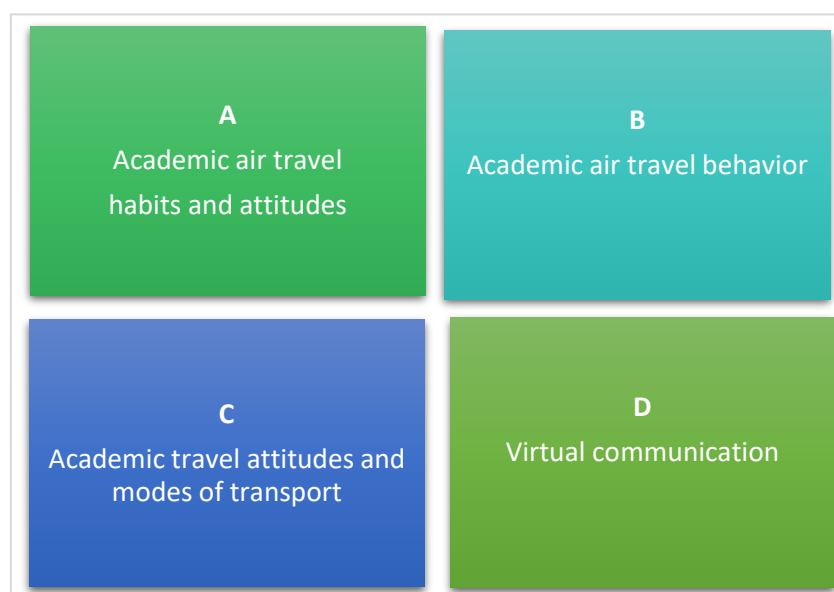
Figure 1: Main survey cluster

In view of the completely new situation in the professional and scientific/academia world caused by the corona pandemic, specific questions were included at the end of the survey on the influence and changes in behavior caused by COVID19. The aim was to take into account the increased work intensity in the home office and to understand to what extent lectures, studies and research are more dependent on virtual technologies and media and how this is dealt with.

The invitation to take part in the survey was e-mailed on Mai 19, 2020 to 228 UAS members and participants. The e-mail delivery failed for 11 addresses. Of the remaining 217 participants contacted, 82 were members of the "Freie Universität Berlin – FUB", 29 of the "Hebrew University of Jerusalem – HUJI", 41 of the "Peking University – PKU", 32 of the "St. Petersburg State University – SpbU" and 33 of the "University of British Columbia – UBC". After a reminder and a field phase of one week until June 5, 2020, 69 participants took part in the survey. This corresponds to a participation rate of 31.8 percent.

As some participants (21) answered the survey only partially, the results show different samples sizes for each cluster, so we can consider the survey as a whole as not representative. The total number of answers to each question is indicated by n=x. If the information is broken down by the categories e.g. "universities" or "status group", the reference number (n=x) is the total number of the respective category.

1. Survey results

In this report, we first describe the overall findings, then analyze the different aspects focusing on status and university. Where necessary, individual details of the overall result of the survey had to be checked against the individually completed questionnaire in order to contextualize and classify the respective answers. The FUB shows the highest number of survey participants (39), followed by the UBC with 12 and the HUJI with eight participants (see Figure 2). For two variables it should be noted that the sample size is small (=5). This applies to the number of participants from Peking University and St. Petersburg State University.

Of the total number of participants per university who started the survey, 27 participants from the FUB, seven from the UBC, six from HUJI, four PKU and four from SPbU filled in the questionnaire until the end. This means that almost 70 percent of the participants answered the survey completely.

The number of respective respondents depended on the degree of participation of the members of the individual universities. Participation was voluntary.
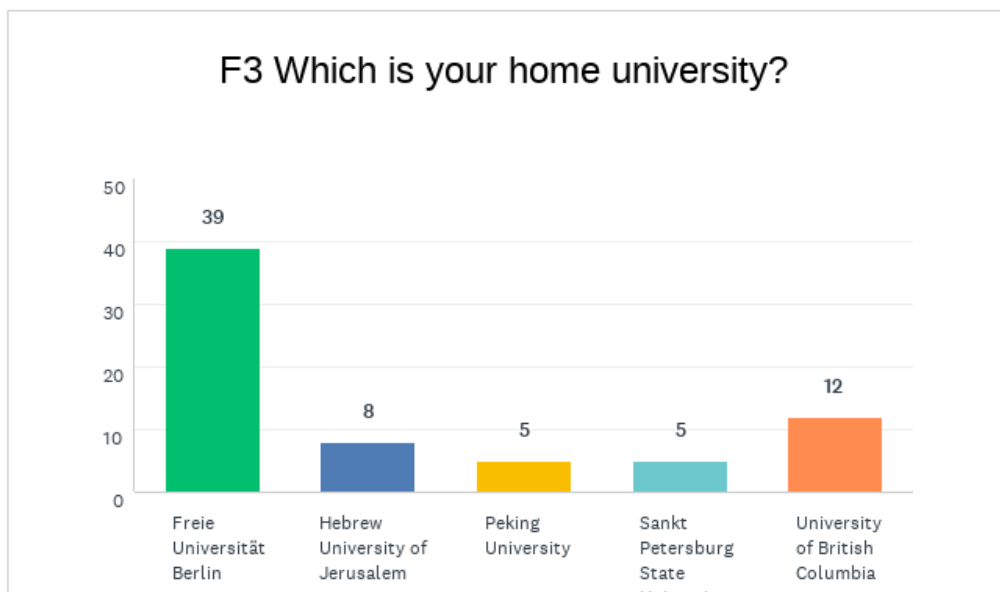
Figure 2: Breakdown of respondents by university

The majority (37) of the participants belonged to a social science faculty. Members of natural science faculties as well as management and administration came next with 12 and 13 participants each (see Figure 3). One participant each belonged to the technical sciences, medicine and educational sciences. Another participant stated that she had graduated from the Graduate School of East Asian Studies and the School of Business and Economic/FUB and another stated that she had left the FUB in 2017.
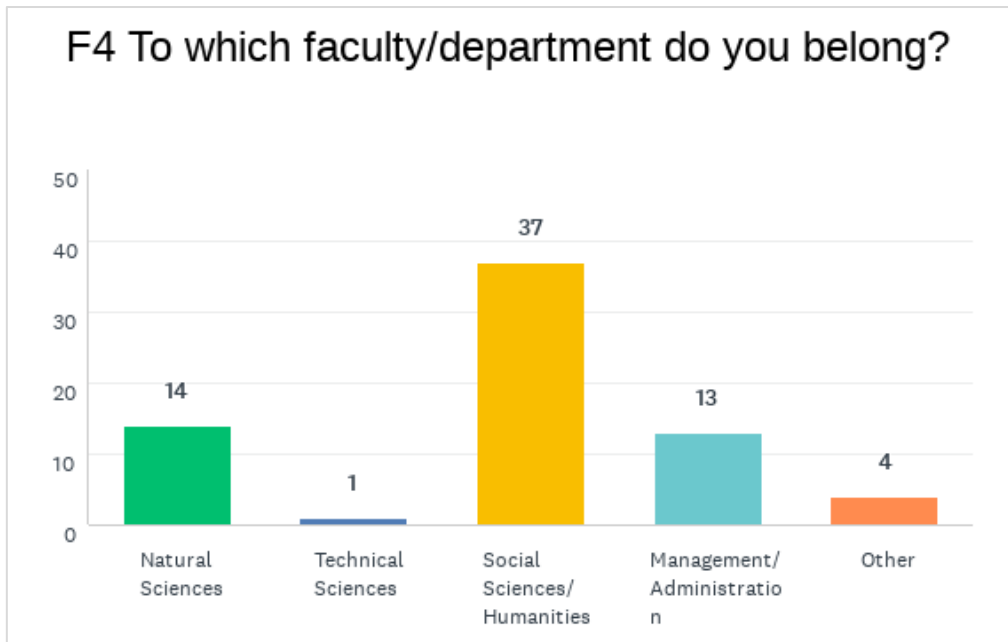
Figure 3: Breakdown of participants by faculty/department

The category status groups is divided into the following variables: "Executive level" (President, Vice-President, Chancellor, etc.), "Management/ administrative staff", "Head of department/ Dean", "Full Professor", "Senior Researcher", "Post-doctoral Researcher", "PhD Student" and "Student". In this category, the sample size from two variables is either zero (see 'Executive level') or very small (2) as for the variable 'Head of department/Dean" (see Figure 4).
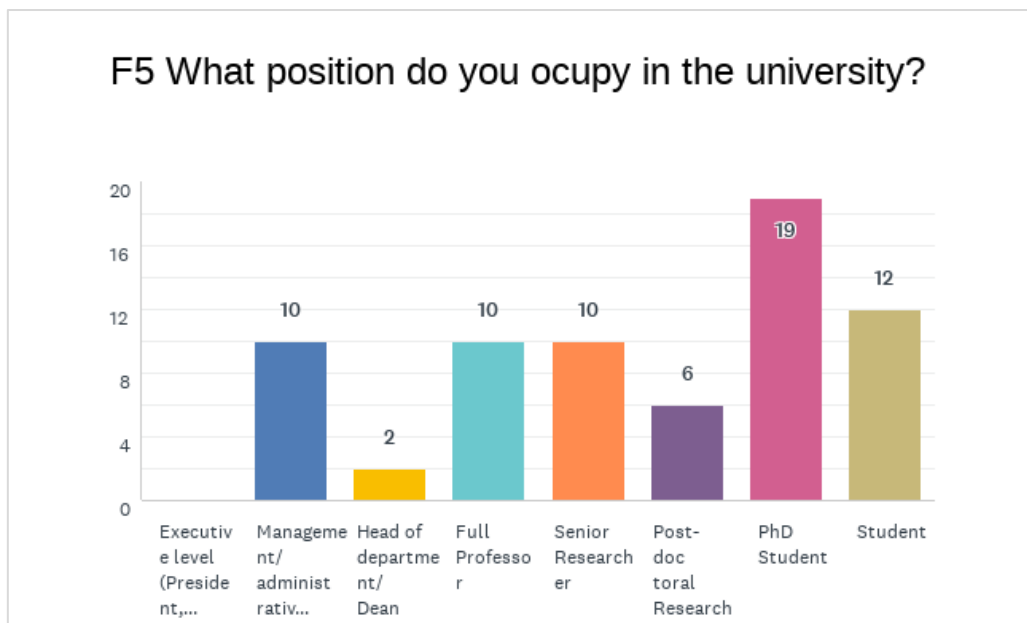
Figure 4: Breakdown of participants by status groups

Overall, the share of women participants (37) was slightly higher than that of men (32). While more men than women participated in the survey at all partner universities, the proportion of women

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(28) at the FUB was significantly higher (see Figure 5). However, a closer look reveals that all FUB participants (12) who abandoned the survey were women, a larger proportion of whom belonged to the student and PhD status group.
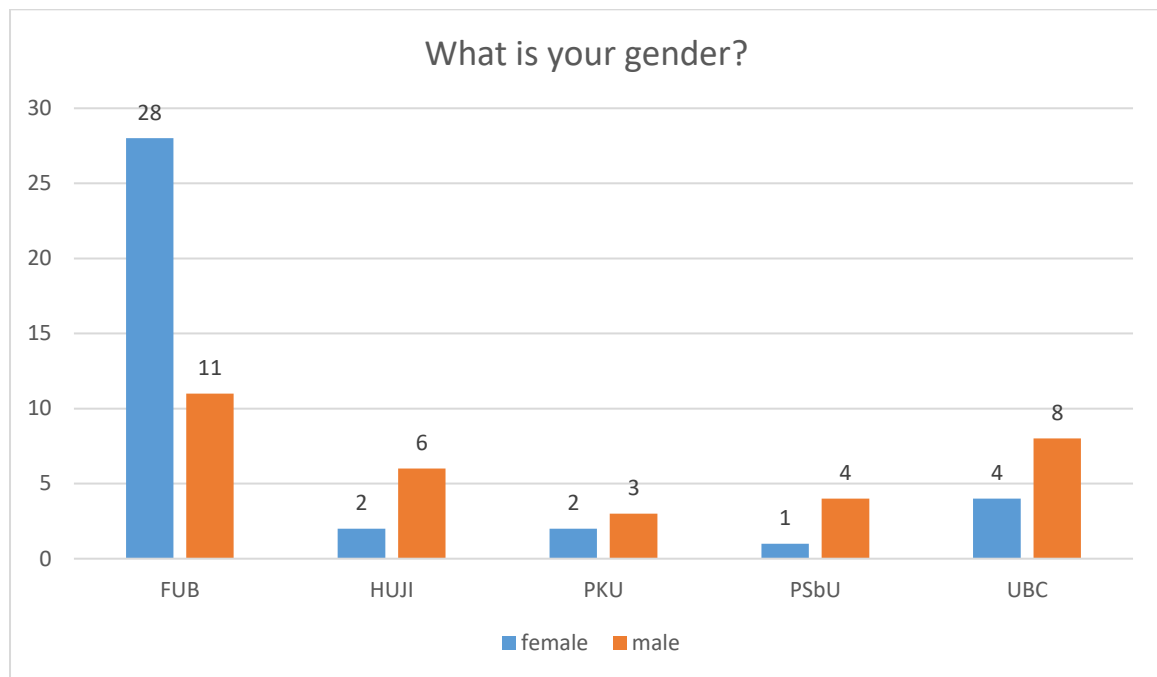
Figure 5: Ratio men women of participants

1.1. Academic air travel habits and attitudes

In this first part of the analysis, the focus is on aspects such as travel frequency, habits and attitudes as well as the frequency, organization and main reasons or occasions for academic air travel. This information, and in particular the evaluation of the thematically bundled core statements and opinions, offers a preliminary picture of the connection/interrelation between academic air travel and professional and study-related personal reasons for travel in the academic sector.

1.1.1. Frequency and destination

When asked about their flight behavior in the last two years (Jan. 2018 - Dec. 2019), *most of the respondents* (*20*; n=54) revealed that they travelled between *once and twice*, followed by 14 who travelled between five and nine times. *Eight* respondents indicated that they took a plane *more than ten times* (see Figure 6). Broken down by universities, three belonged to the FUB, two to the UBC and one each to HUJI, PKU, and PSbU. *Six* stated that they *had not flown at all* in the last two years for professional/academic reasons.
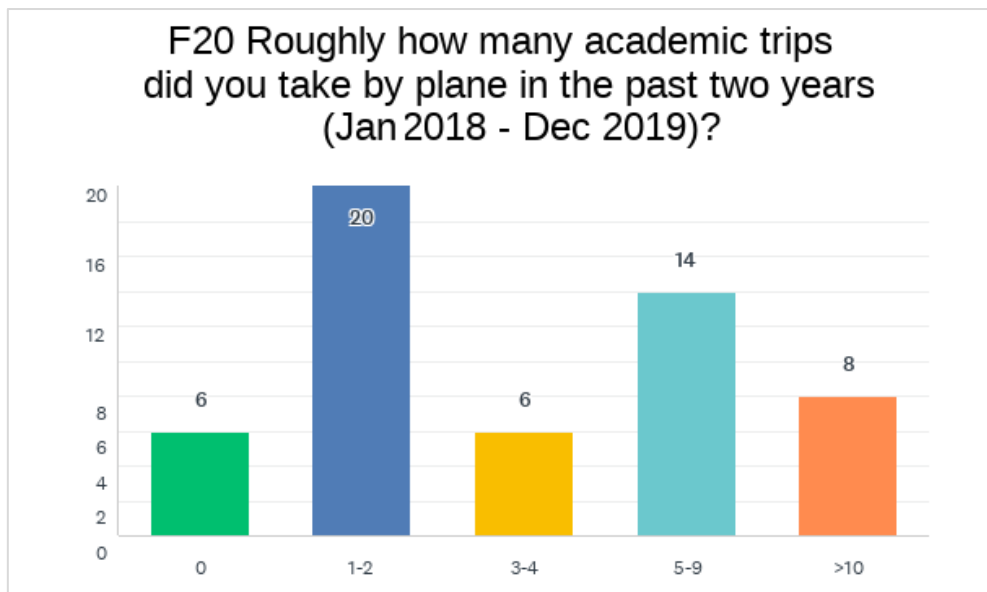
Figure 6: Number of work/study related air trips between January 2018 and December 2019

In the group of *frequent flyers* (>10), professors travelled at most: four *full professors* (n= 8) reported having flown more than ten times, followed by senior researchers (2 x >10) and heads of department and postdocs (1 x >10 each). *Students* (n=10), on the other hand, *flew the least*, three stated that they had not flown at all, and seven indicated that they had flown between once and twice during the respective travel period.

Fifty respondents to this question (n=55) said that they had flown in *economy class*. During the selected period, *four respondents* chose to fly in *business class* (two respondents on one or two flights, and two respondents on three to four flights). Concerning the status of the respondents that booked business class, two were heads of department, while the other two were one professor and one PhD student. Two respondents were participants from the PKU, one from the FUB and another from SPbU. Within the group of management/administrative staff (n=7) three indicated that they had not flown at all, two stated to have flown once to twice, and two other stated having flown between five and nine times. When looking at the mentioned destinations during the years 2018/2019, the *most frequent* work-/study related destination was *Europe* (30, n=54). Followed by Asia (10) and North America (8) (see Figure 7 and Figure 8).

F22 Which continent is your most frequent flight destination?
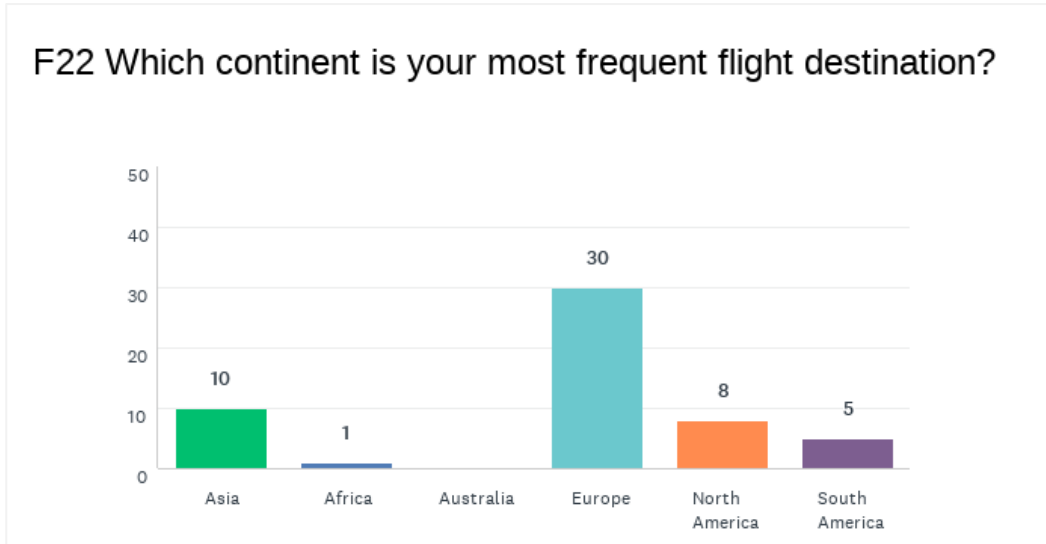
Figure 7: Most frequent destination

In terms of individual universities, *FUB respondents* (n=29) travelled most frequently to destinations within Europe (11), followed by Asia (7). All *HUJI* (n=7) and all *PKU respondents* (n=4) stated that their main destination is Europe. Three *SPbU respondents* (n=4) travelled most frequently to Europe. One respondent indicated that his/her most frequent destination is Asia. Also, *UBC respondents* (n=10) travelled most frequently to Europe (5), followed by North America and Asia (3 and 2, resp.) (see Figure 8).

Most frequent flight destinations
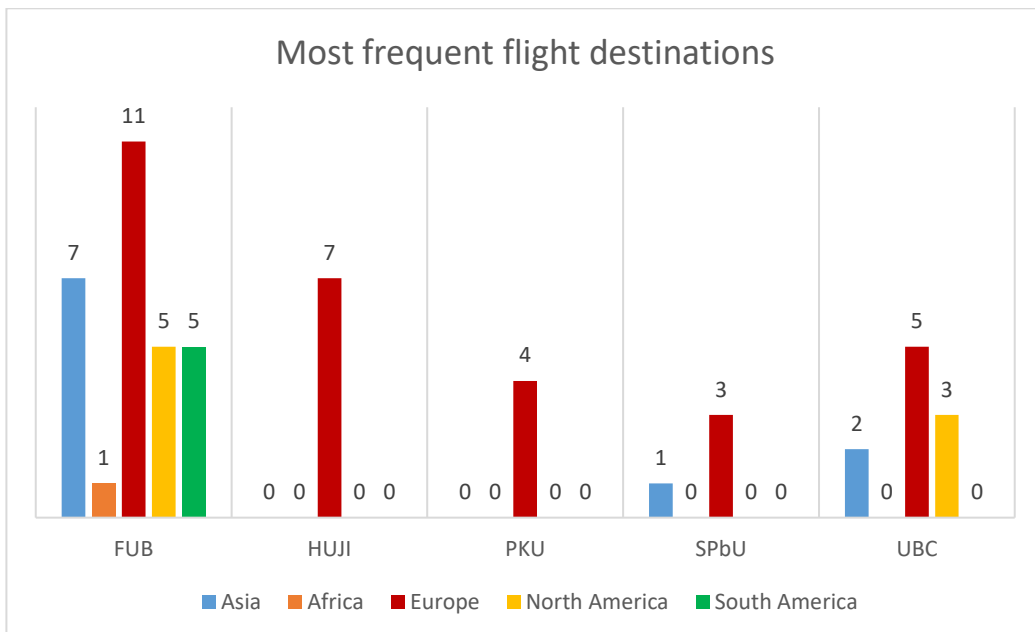
Figure 8: Most frequent flight destination grouped by universities

When asked about their air travel behavior in the period from *January to December 2019*, *17 respondents* (n=61) stated that they had *not flown at all in the last 12 months* for study or work reasons.

Most (25) travelled *once or twice*, however, *three* of the respondents stated having flown *more than ten times* (see Figure 9).
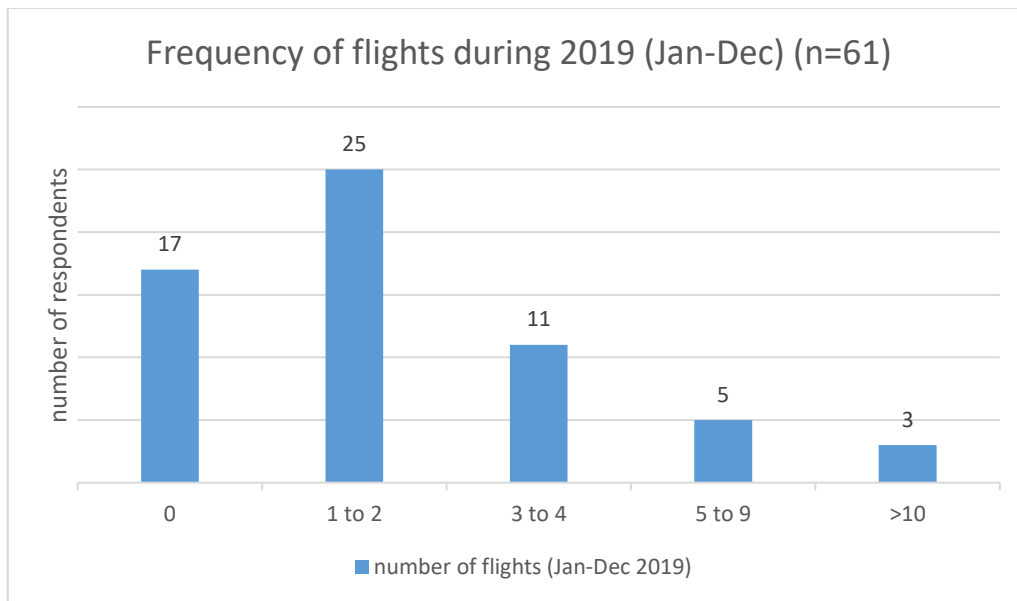
Figure 9: How often have you flown abroad for academic reasons in the last year (Jan-Dec 2019)?

During the period *January to December 2019*, respondents in the status group *PhD* travelled *least* by air: *six* respondents (n=19, 1 skipped) stated they *had not undertaken any air travel*. The status group with the *most frequent flights* are *full professors* (n=10, 1 skipped) (see Figure 10).
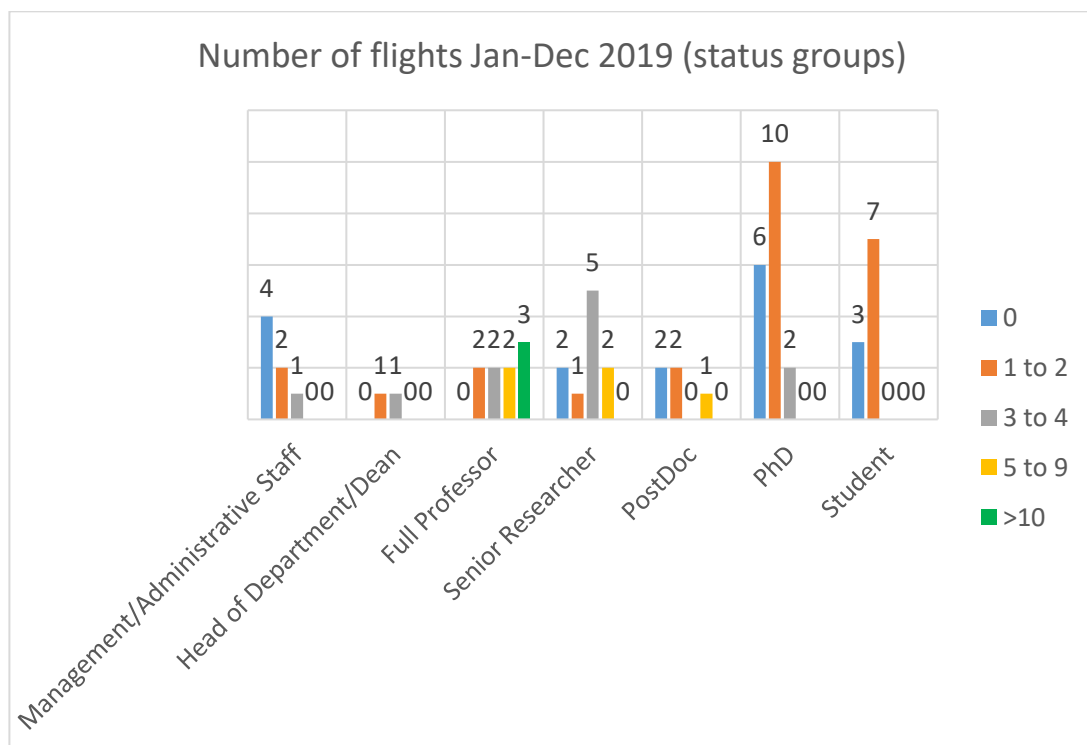
Figure 10: Number of flights for the period January to December 2019 broken down by status group

Broken down by universities, the following picture emerges (see Figure 11):

14 FUB respondents (n=33) said they *had not flown* in 2019, while 14 respondents said they had taken one or two flights in 2019. *One person* said that he or she had taken *more than ten flights*. Of the remaining four participants, two flew 3-4 times and the other two flew 5-9 times.

Four of those surveyed at the *HUJI* (n=7) said they had taken one or two flights in 2019. Of the remaining three participants, two of them flew 3-4 times, and *one* respondent flew *5-9 times*.

Two respondents (n=5) of those surveyed from the *PKU* said they *had not taken a flight*, and another two respondents said they had taken three or four flights in 2019. *One person* stated to have completed more than *ten flights*.

Two respondents (n=5) from the *SPbU* indicated they had taken one or two flights, while two others had flown 3-4 times in 2019. *One participant* informed of *more than ten flights* during this same period.

One respondent from the *UBC* (n=11) indicated *not having flown* during the year 2019. Five of those surveyed at the UBC said they had taken one or two flights in 2019. Of the remaining five participants, three flew 3-4 times, and the other *two* flew *5-9 times*.
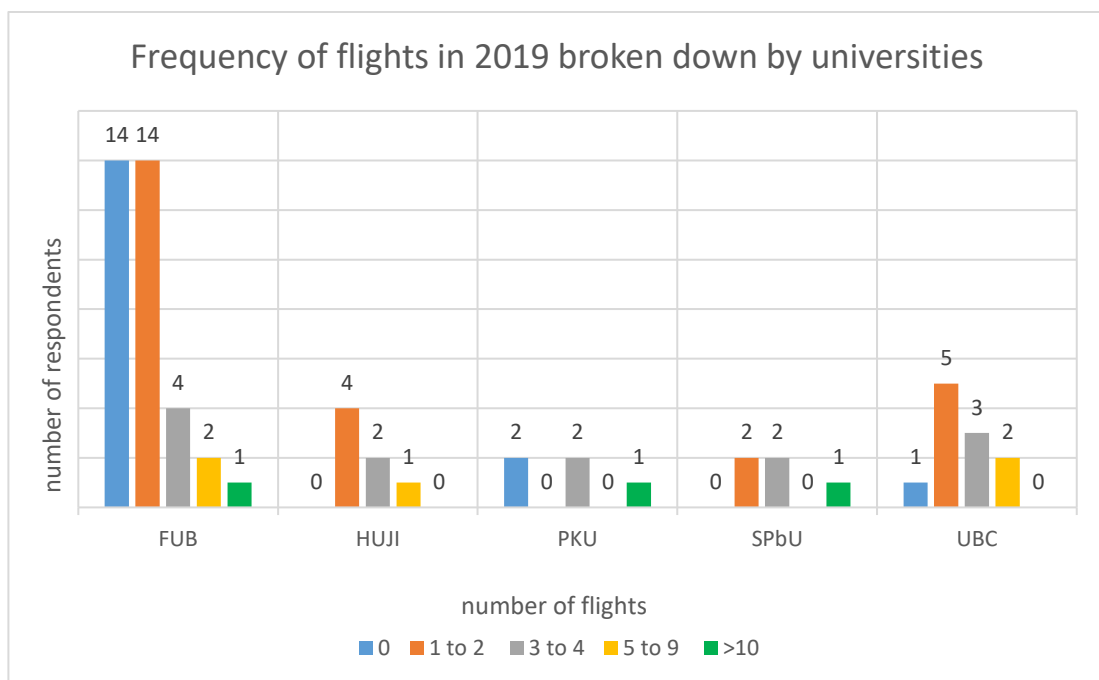
Figure 11: Breakdown of the number of work/academy related flights per person completed in 2019, differentiated by universities.

When asked about their preference to increase or decrease their number of work/academic related flights, approximately *63 percent* (35) of the respondents (n=55) to this question claimed that they would rather *decrease their number of flights* (see Figure 12). One responded:

"*Neither - I would prefer to leave the frequency as it is. Slight preference for increase.*"
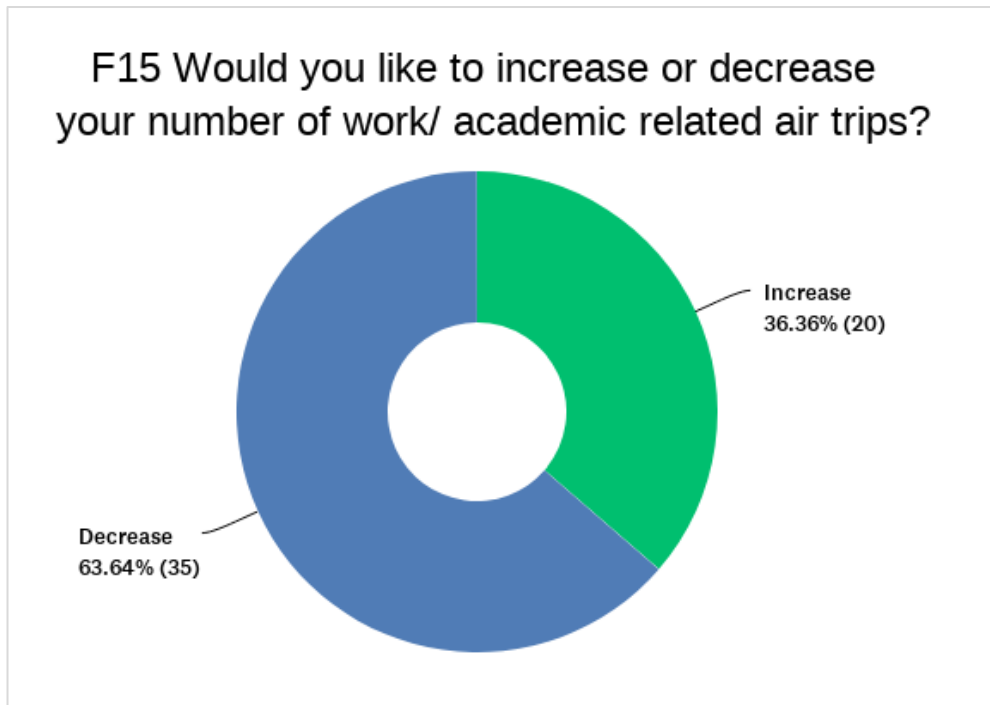
Figure 12: Ratio of respondents who would like to increase or decrease the number of flights

It is noticeable that the *majority* of participants from the *FUB* and *UBC* were in favor of *reducing their air travel*. Most participants from *HUJI, PKU and SPbU*, however, explained that they would like to *fly more often* (see Figure 13).
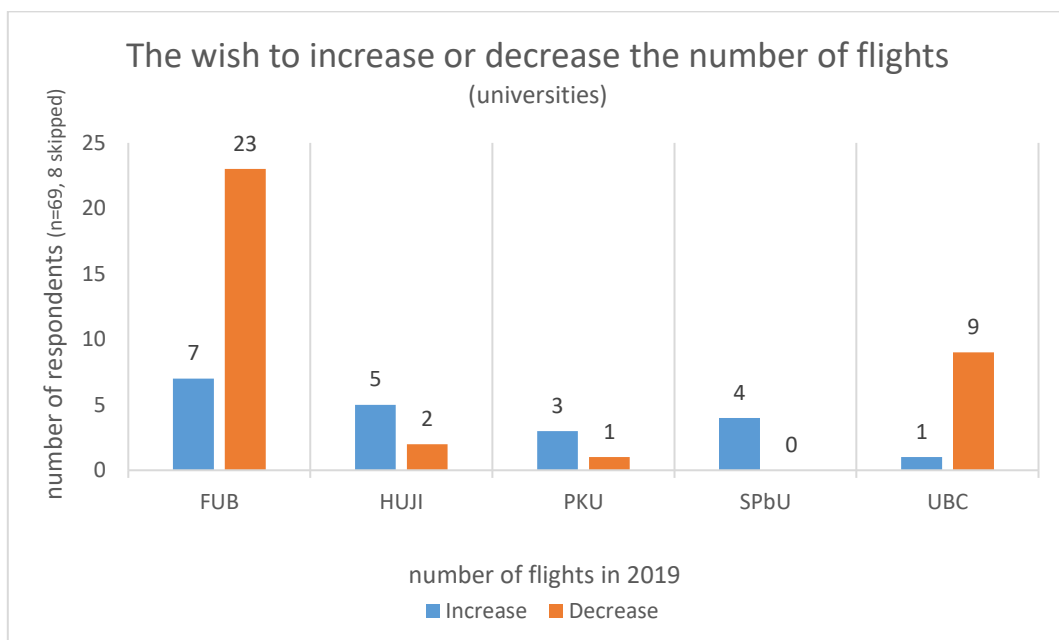
Figure 13: The wish to increase or decrease the number of flights, broken down by universities

When looking by status groups, it stands out is that all respondents in the "*Management/ administrative staff*"-group would like to *fly less* (n=7). Also, the "*PostDocs*" showed a slight tendency to want to travel *less*: four of the five respondents (n=5) said that they would like to fly less (see Figure 14).

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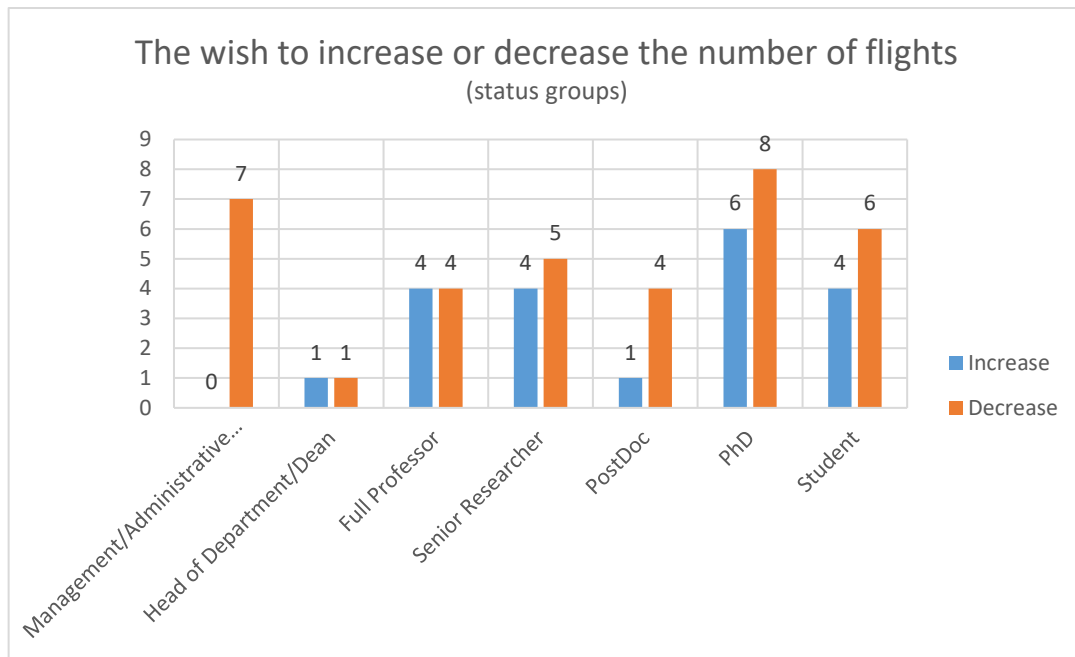
Figure 14: The wish to increase or decrease the number of flights, broken down by status groups

In response to the open question of "why" they want to increase or reduce their air travel, most respondents (21; n=45) cited *environmental* or *climate-related reasons for reducing* their flight frequency. Other reasons (6 mentions) related to *time* and *costs* (see *Figure 15*Fehler! Verweisquelle konnte nicht gefunden werden.). Two respondents indicated that the implementation of virtual formats could replace some air travel:

> *"Some of the meetings can be organized online"*

> *"(…) some travelling could be substituted by video conferences, but I always make good use of my trips and combine several purposes (research, teaching, field visits)"*

Whereas another respondent noted in this context that while "[*air travel] creates additional work, it is partly inevitable. Virtual meetings are not always possible and efficient."*

> *"Trying to shift to fewer but longer fieldwork trips"*

> *"I have always tried to combine several conferences, visiting professorships and research collaborations on one flight by travelling by train, ferry and bicycle once I arrive in a distant place. I would like to do this even more."*

> *"I feel not all conferences etc. I attend are very useful. I would decrease my attendance of lesser conferences, and thus reduce my number of flights."*

The main reasons in favor of *increasing* the number of flights consisted in the *necessity to networking* and to maintain or *initiate new cooperation*. It was also mentioned that (more) air travel is considered necessary for carrying out research and fieldwork (see Table 1).

Thirty-five respondents (n=55) claimed that the decision to fly was in most cases made on their own initiative, followed by sixteen who stated that they just accepted an invitation. One respondent pointed out that most of the air travel was "both"; own initiative and invitation. Two other respondents

stated that their trips were the result of "planning or expectation of the superior", and that flights were often the result of "project management", respectively. Moreover, another reported that most of the flights were the result of "joint European projects".

According to forty-nine respondents, travel arrangements are normally organized by themselves. A small number (8 and 7, respectively) pointed out that administrative staff or external hosts were the responsible of organizing their air travels. Only three respondents affirmed that travel arrangements were made by the university's central travel management[1].

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[1] This question was a multiple-choice question, so that the participants could give several answers.

Table 1: Reason and aspects why the respondents wish to decrease or increase their number of flights

Decrease Environment/ climate	Decrease Other aspects/ reasons	Increase Networking/ conferences	Increase Research
• "Reduce GHGs and set an example" • "I am trying to take alternative transportation if within Europe because I am aware of the emissions from air travel and would like to reduce my carbon footprint (so not necessarily trying to reduce overall trips, only air trips whenever possible.)" • "Pollution" • "Planetary boundaries" • "Climate protection" • "Environmental considerations" • "Air pollution/ecological footprint" • "Save the environment, environmental bads are unproportionally distributed, travelling instead of using digital means thus harms the disadvantaged in the world the most." • "To have less impact on the environment" • "Reduce Greenhouse Gas Emissions" • "Considering the impact air travel has on the environment, I need to reduce my trips." • "Carbon impact" • "Decrease my carbon emission" • "Cause less impact on the environment" • "Emissions" • "I want to reduce my footprint out of conviction; While I love my work and consider it very relevant, I don't think I can legitimize the CO2 emissions of a flight to a conference - my work does not have enough impact; I am strongly davpn convinced that almost all scientists need to be more modest about their own effectiveness" • "Due to ecological reasons" • "Decrease co2 emissions" • "Environmental reasons" • "To minimize emissions, air travel should also be minimized and done very strategically. However I travel by air very infrequently, and I think this level is close to being OK." • "I want to lessen my carbon footprint in face of global climate change. I have always tried to combine several conferences, visiting professorships and research collaborations on one flight by travelling by train, ferry and bicycle once I arrive in a distant place. I would like to do this even more."	• "Time" • "No need" • "Wastefule" • "Stressful" • "Family obligations" • "Health reasons" • "To reduce costs" • "Costs" • "To reduce costs" • "Time and money" • "Time, inconvenience" • "I will retire this year" • "Trying to shift to fewer but longer fieldwork trips" • "I feel not all conferences etc. I attend are very useful. I would decrease my attendance of lesser conferences, and thus reduce my number of flights." • "Some of the meetings can be organized online" • "It creates additional work, but it is partly inevitable. Virtual meeting are not always possible and efficient."	• "Some more cooperation would be good" • "To foster relationships with research partners and participants As a source of inspiration" • "Strengthen the communication" • "It is important to be in contact with colleagues and complete research." • "Face-to-face interaction helps to promote and expand cooperation; some travelling could be substituted by video conferences but I always make good use of my trips and combine several purposes (research, teaching, field visits)" • "New contacts and cases" • "I wish to create more professional contacts" • "Good for the cooperation with partners" • "Research connections"	• "Because it will help me with my research" • "It enormously improves my academic skills and exposes me to important aspects in my field" • "More Research" • "Covid-19 demonstrated to me that only so much can be done by zoom etc. Research relies on personal ties to a much larger degree than thought of .." • "The aim to develop field research and educational programs with international participation"

1.1.2. Choice of mode of transport

Respondents (n=51) were asked to rank seven factors in order of importance ("not important", "important", "very important") when choosing a means of transportation. *Twenty-two* respondents considered *environmental concerns* as *very important* factor when choosing a means of transportation, followed by *money* (16) and *time (length of the journey)* (14).

Thirty-three participants considered the factor *time (length of trip)* and thirty-two that *money* as *important*, followed by aspects of comfort (28) and personal concerns (family obligations, health issues) (27) (see Figure 15). The aspect of *comfort* was rated by twenty respondents as *not important*, followed by the aspect of *being able to work while travelling* (18) and *flight schedule* (15). Interestingly, the aspect of *personal concerns* *(family responsibilities, health issues, etc.)* showed a split between two extremes, "not important" (12) and "very important" (12), respectively.
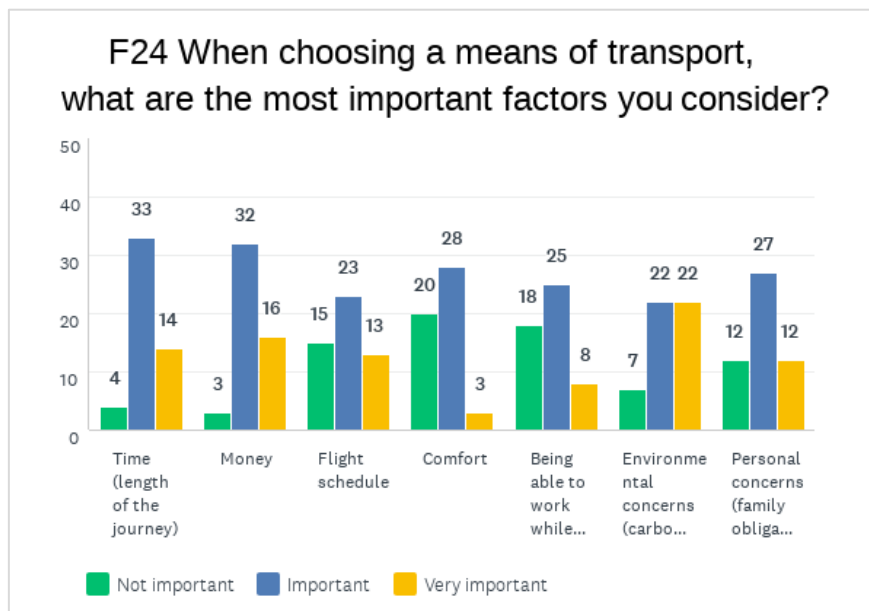
Figure 15: Factors that influence the choice of transport

When asked how likely they would rate the use of alternatives to flying, 25 respondents (n=51) said that the use of the *train* as an alternative was *very likely*, followed by the option of the use of *virtual conferencing and communication technology* (19). For most respondents, the *most unlikely* alternative to flying was the use of the *car* (37), followed by the *bus* (31), and the ferry/boat (24) (see Figure 16). One UBC respondent added the "bicycle" as an alternative means of transport to the given list. Additional comments on this question pointed out that for academics/members of the HUJI, partner-university in Israel, there is no alternative means of transport to a flight when it comes to attending a conference, meeting, workshop etc. outside the country.

"Living in Israel does not really make train, bus and car (or boat) a real alternative"

"As I live in Israel, most of conferences require flight"

"Israel only has flight connections to Europe/USA etc. Using alternative transportation is no option."

"The only way to leave the country I am living in is by air"

F25 How likely would it be for you to use the following alternatives to flying?
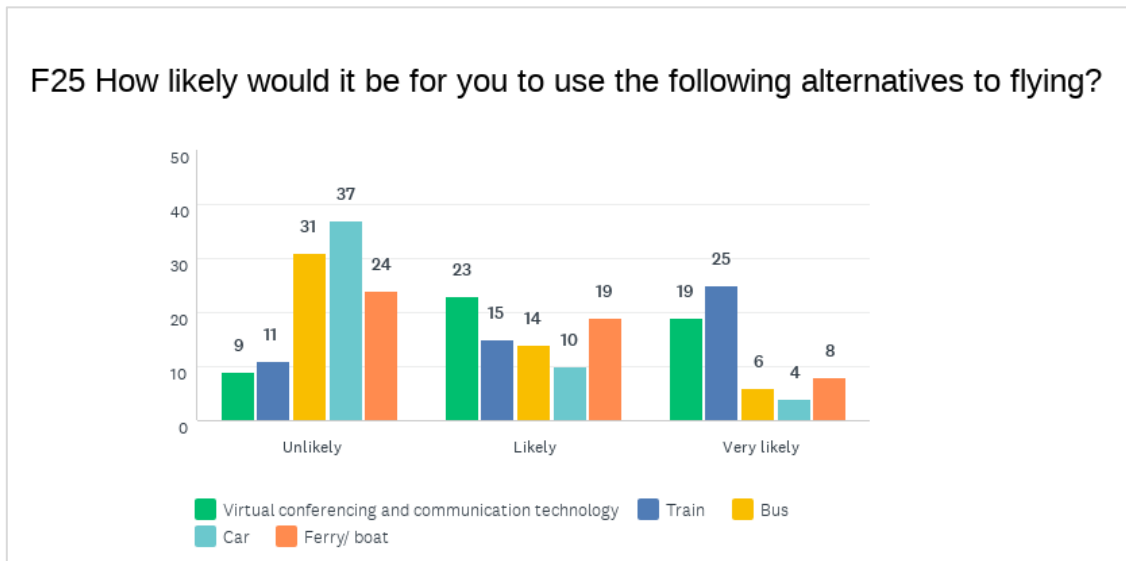
Figure 16: Use of alternatives to flying

1.1.2.1. Choice of mode of transport within a 1000 km radius

For a distance of up to *1000 km*, thirty-six respondents (n=51) said they chose the *train* as the most common means of transport. Twenty-five respondents used air travel for the corresponding distance. Both, the bus and car, were each used by 10 respondents to travel within a radius of 1000 km. A negligible proportion of respondents (2) stated that the use of car sharing for the indicated distances (see Figure 17).

F26 Which form of transport do you usually use to move within a 1000Km radius of the area where you live and work?
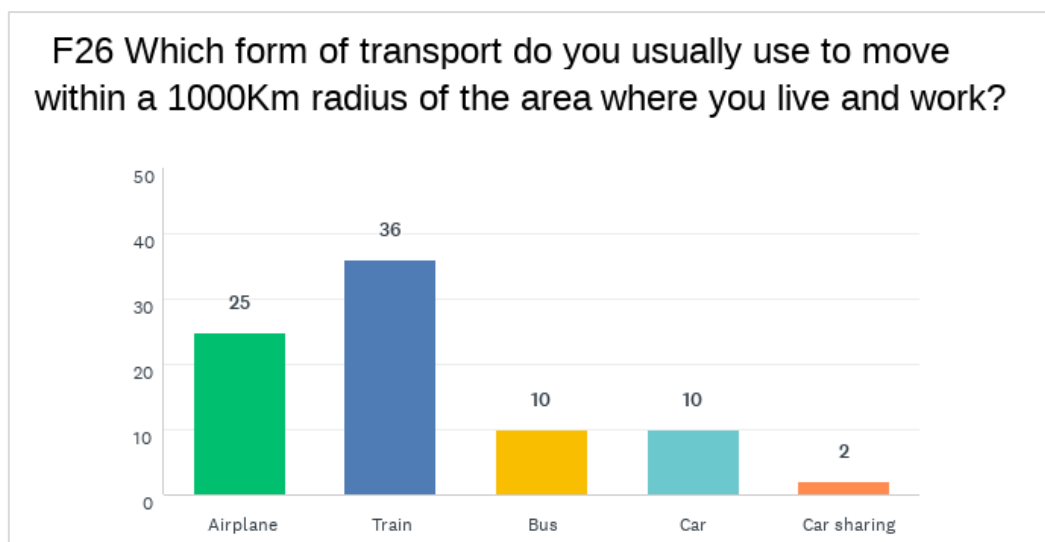
Figure 17: Mode of transport within a 1000 km radius[2]

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[2] This question was a multiple-choice question, so that the participants could give several answers.

In order to get a statement about whether there are regional differences in the choice of the means of transport for a distance of up to 1000 km, it is useful to distinguish the answers according to the universities (see Figure 18). It turned out that almost seventy percent (25) of those who said they most usually use the train (36) for distance travel of 1000 km were respondents from the FUB. The second most common means of transport for distances of up to 1000 km among the FUB respondents (11) was the plane.

At both the UBC and the SPbU, most respondents (seven and three, respectively) usually use the plane as a means of transport within the distance in question. Among the HUJI respondents, the most differentiated picture emerged when choosing the means of transport for distances of up to 1000 km: Four participants in each group stated that they used either train, car or bus. Four respondents chose between either the plane or car sharing, two in each mode of transportation. Among the PKU respondents, usually more used the train (3), followed by the plane (2).
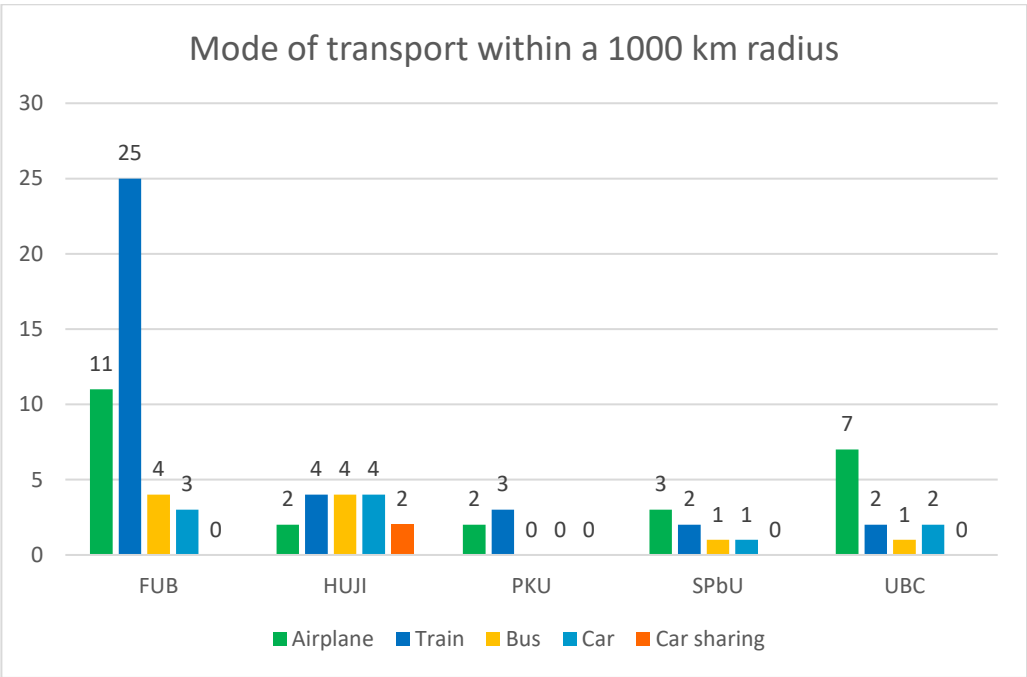
Figure 18: Mode of transport within a 1000 km radius broken down by universities

In order to learn more about the willingness and possibilities of using *ground transport*, participants were asked what they would consider a reasonable distance (km) within their own region to travel by ground transport (car, bus or train) rather than by air. As many as *nine* and *eleven* participants stated that they considered a distance of *up to 1500 km* and *up to 1000km* respectively, to be acceptable. *Most* (26) indicated a distance of either *up to 800 km* (14) or *up to 500 km* (12) as reasonable (see Figure 19).
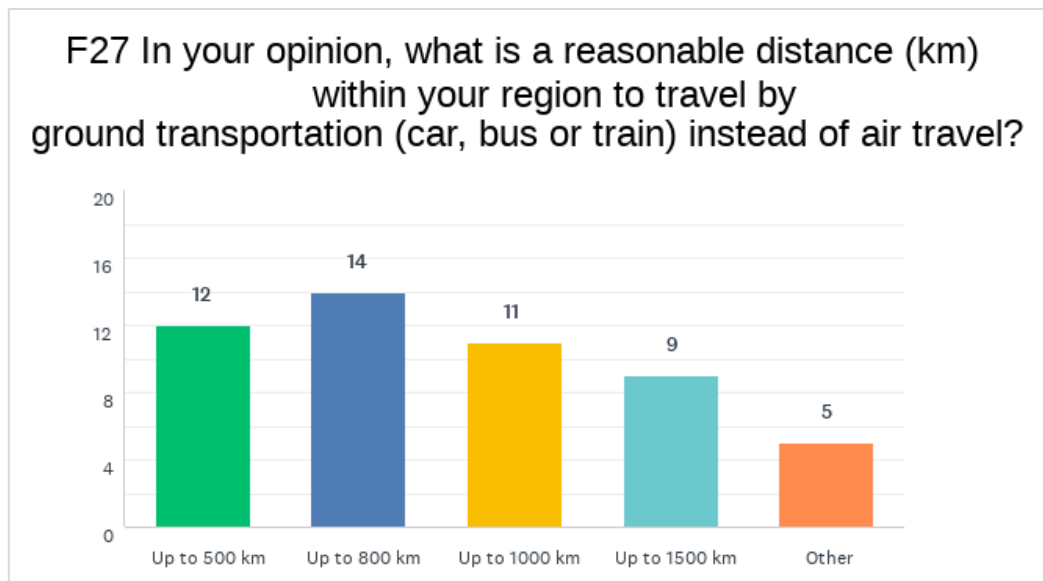
Figure 19: Reasonable distance (km) to travel by ground transport (within the respective region)

Most (3) of the *UBC* respondents (n=9) stated that a distance of *up to 800 km* was reasonable, closely followed by the option of up to 500km (2). *Two* other respondents from the UBC even limited the reasonable distance for them to as much as *300 km*, while another explained that there is "*no real alternative in the Canadian context*". The *outliner* in the UBC sample was a person who stated that *up to 1500 km* was a reasonable distance to travel by ground transport.

Three respondents at the *HUJI* (n=6) indicated that they would consider *up to 1000 km* or *up to 1500 km* (2 and 1, respectively) a reasonable distance in their region (see Figure 20).

It is striking that *half (2) of the PKU respondents* (n=4) stated that they would consider a distance of *up to 1500 km* to be acceptable to travel by ground transportation instead of air travel. This is a high percentage compared to respondents from other universities. It could be explained by the fact that, for example, the Beijing-Shanghai high-speed railway, which connects the Bohai economic fringe and the Yangtze River delta, covers a distance of about 1300 km. The corresponding journey time is 4 hours and 48 minutes from Beijing South to Shanghai Hongqiao, with a stop in Nanjing South (see Figure 20). In addition, the *maximum door-to-door travel time* that PKU respondents were willing to spend on train travel was *2-5 hours* (2) and less than 2 hours (1). This ratio in the answers could again be related to the fast train, as the distances in the country are too long to be covered by regular trains in a reasonable time. Nevertheless, there was also a PKU respondent who said he was willing to accept up to 9 hours for door-to-door travel (see Figure 21).

For the *SPbU no trend* for a reasonable distance to travel by ground transport could be determined. Each of the four participants in the SPbU decided on one of the four options (see Figure 20).
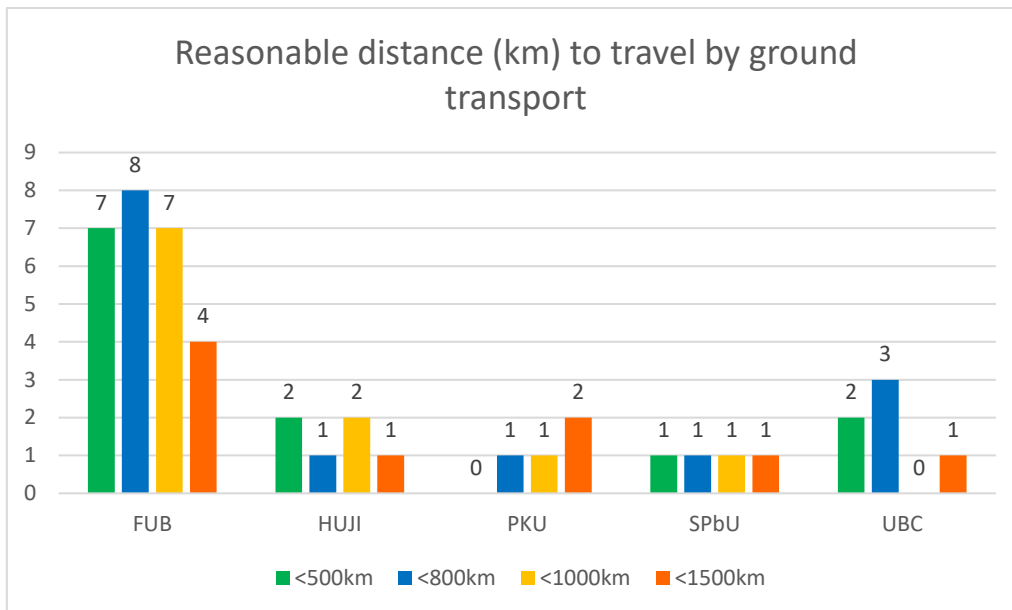
Figure 20: Reasonable distance (km) to travel by ground transport (within the respective region) broken down by universities

For the participants in the *FUB* (n=28), and thus the European area, it is noteworthy that the *vast majority* (15) of respondents indicated that they considered a distance of either *up to 800 km* (8) or *up to 500 km* (7) as reasonable. One participant at the FUB pointed out that the answer was rather dependent on the connection. However, a total of *four* FUB participants stated that a distance of *up to 1500 km* was appropriate, and another person stated *no restriction as long as there is a bus/train connection*. Given the very well developed rail and bus network within Europe, the relatively low willingness to travel up to 1000 km or even 1500 km is a particularly eye-catching detail. This is particularly noticeable because as *most* (26) of the *FUB participants* indicated to the question "*What is the maximum time (hours/hour) you are prepared to travel by train from door to door?*" that they would be willing to travel by train between *6-8 hours* (14) and *more than 9 hours* (12) (see Figure 21).

The *maximum travel time* that would be accepted for train travel was lowest among the *UBC* respondents (n=9). Five said they would be willing to spend a maximum of *2-5 hours* (see Figure 21). Of the *SPbU* participants, *one* indicated his maximum travel time he would spend on train journeys was *less than 2 hours*. The maximum door-to-door travel time that would be accepted for train travel was *6-8 hours* for *three participants,* and *more than 9 hours* for also other three participants of the *HUJI* (see Figure 21).

Overall, when looking at all responses (n=51), most (22) people stated that the maximum amount of time of a door-to-door journey they were willing to travel with train was *6-8 hours*. This data was closely followed by eighteen who said they were willing to travel *more than 9 hours* (see Appendix Figure 2 and Appendix Figure 3).
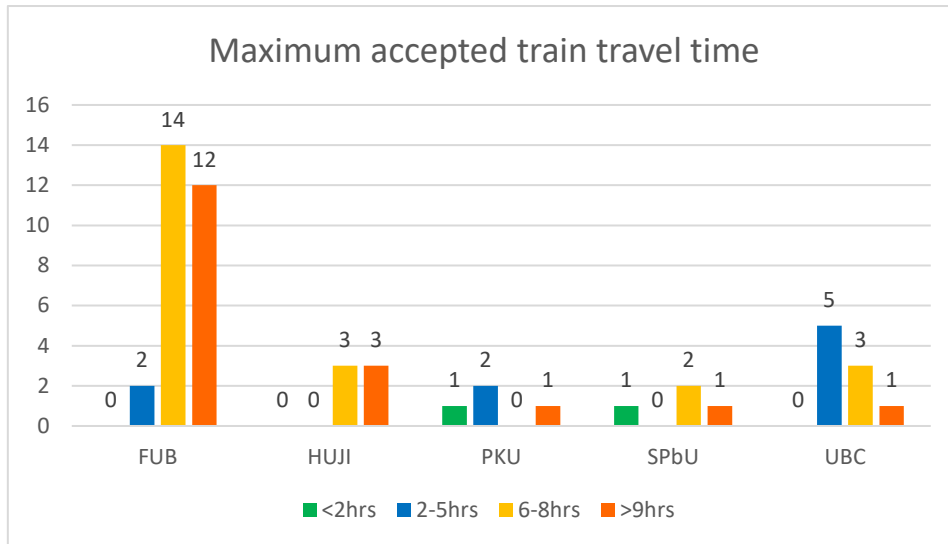
Figure 21: Maximum travel time that would be accepted for train travel broken down by universities

1.1.2.2. Incentives to opt for alternatives to flying

When asked what could be an *incentive* to opt for alternatives rather than air travel, the most frequent selected "very likely" option (23 [n=51]) was "*university guidelines making alternatives mandatory for certain trips*" (see Figure 22 and Appendix Figure 4). The second selected "very likely" option was *cheaper train/ car sharing* (22), followed by better conditions for virtual communication/conferencing (20) and, lastly, first class tickets, with 15 respondents choosing this as their "very likely" option.
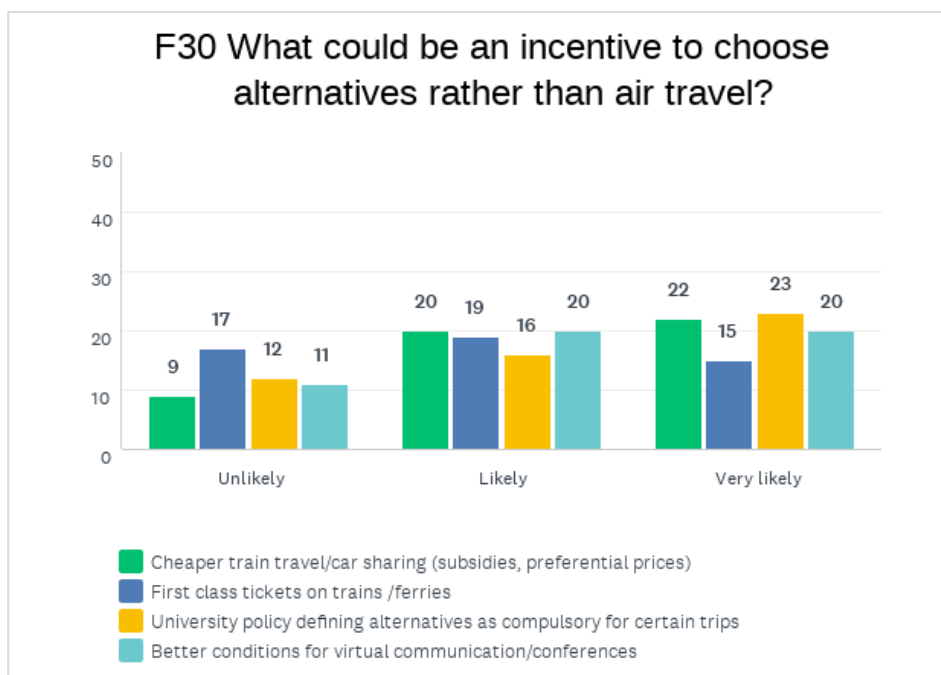
Figure 22: Incentives to opt for alternatives to flying

When differentiating the answers according to the universities, *sixteen FUB* respondents (n=39) stated that they considered "cheaper train tickets/car sharing" as a very likely incentive. This was followed directly by the option "university guidelines that make alternatives mandatory for certain journeys" which 15 of the participants said it was a very likely option. In an additional comment it was pointed out that "sponsored 'Bahncard' for employees" could be a further incentive. And another participant commented in this regard:

> *"time saving ground transportation. FUB does not even allow to reserve a sit on a train. Sometimes you cannot work in the train because it is too crowded."*

At *UBC*, most respondents (7 [n=9]) to this question stated that they considered the option "*better conditions for virtual communication/conferences*", followed by "university guidelines that make alternatives mandatory for certain journeys" (5) as a *very likely incentive* (see Figure 23).

However, *none* of the participants from *HUJI, PKU or SPbU* universities opted for "*better conditions for virtual communication/conferences*" as their very likely option.

One HUJI respondent considered all three options "cheaper train tickets/car sharing", "first class train/ferry tickets" and "university guidelines making alternatives mandatory for certain journeys" as very likely incentives to choose alternatives rather than air travel. At the same time, this responding person pointed out that:

> *"Nevertheless, you should understand that these alternatives are in fact impossible for those coming from Israel unless travelling to a conference in Jordan and Egypt which happens once in a blue moon."*
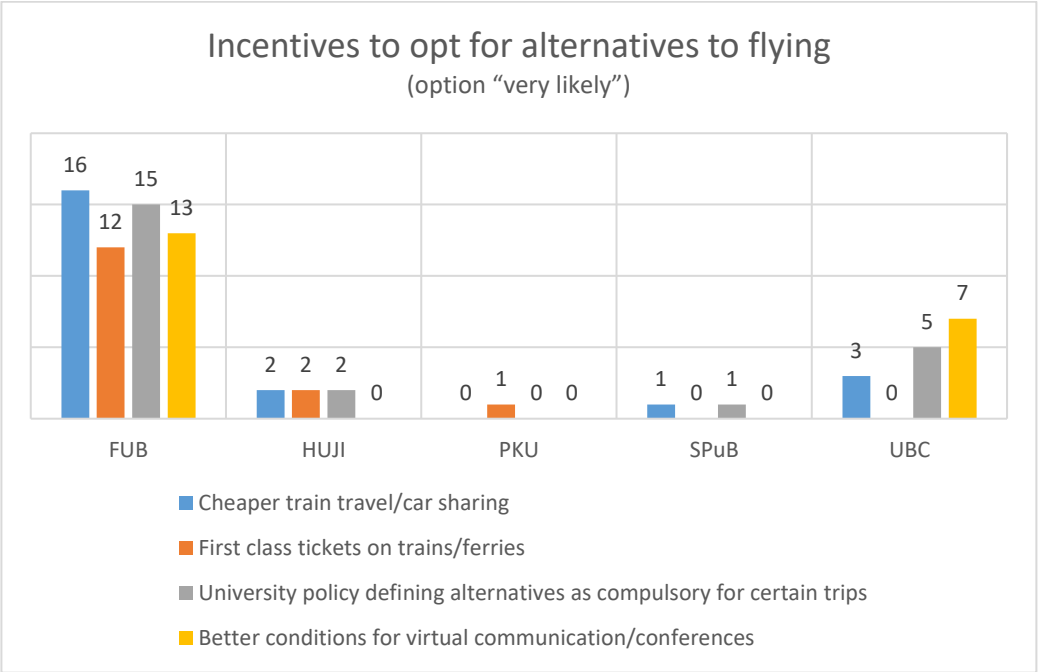
Figure 23: Incentives to opt for alternatives to flying, option "very likely"

1.2. Motivations, decisions and impacts of academic air travel

The aim of the second part of this survey was to get a feedback of the extent to which institutional and personal aspects could influence the performance of the academia's community in relation to business or study travel. In general, this part of the survey aims at establishing any likely conflicting agenda between academic careers, personal life, climate protection, and travelling decisions. This section also explored the relationship between academic life, health, and other aspects related to family or social dynamics.

By understanding more in detail the motivations for which the academia community – by status group – chooses to travel, this set of questions tried to identify any link with specific attitude toward carbon offsetting, climate impact, and the willingness to accept virtual communication technologies and change behavior.

1.2.1. Reasons and purposes

Aspects concerning academic *networking* are very important when travelling (see Figure 24): 49 of the participants (n=51) consider this an "***important***" or "***very important***" motive, and; on the opposite, only a small minority thinks that it is not important (2). Opinions on the relevance ("important" and "very important") of "field research" and "institutional needs" for the decision to travel are somewhat more balanced (34 and 29). Whereby in the category "very important" it becomes very clear that the aspect of "field research" (18) is far much more important than "institutional needs" (7).

The *lowest* importance was given to the "***fundraising opportunities***" motive (35).
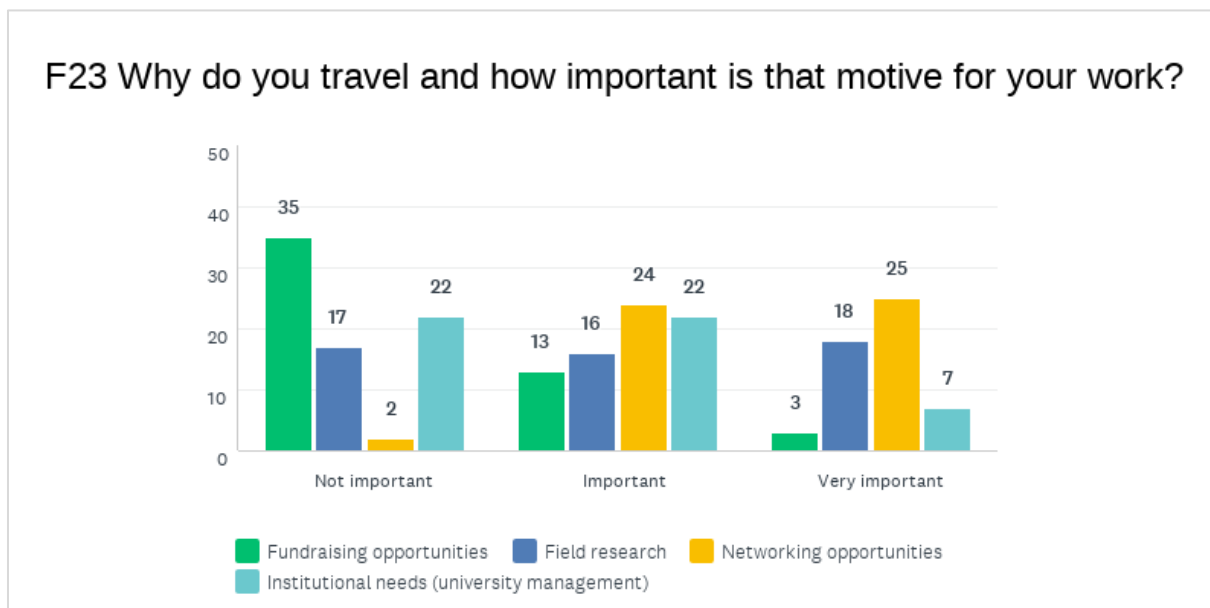
Figure 24: Motives to travel – sorted by importance

Additional comments by respondents of the status group "students" and "PhD" from the FUB addressed the importance of travel, especially for young academics, and emphasized that stays abroad (for internship and work experience), communication, and exchange with international scholars are important for a career.

> *"presentation of research and feedback, starting career, "getting into the bubble"; 1-2 additional flights were made between 2018 and 2019 for internships and work experience, important for international relations scholars"* (FUB – student)
>
> *"Communication with partners; presenting results"* (FUB – PhD)
>
> *"international experience for a better career"* (FUB – PhD)

When asked about the *purpose of their work/academy related flights*, respondents (n=9) on the topic of "*management*" indicated "*development or strengthening of partnerships*" as the most frequent purpose (4), followed by "*project management*" (3) (see Figure 25). Aspects such as "*board meetings*" and "*job shadowing*" were chosen as the *never* or *less frequent* purpose of travel (5 and 5 respectively).
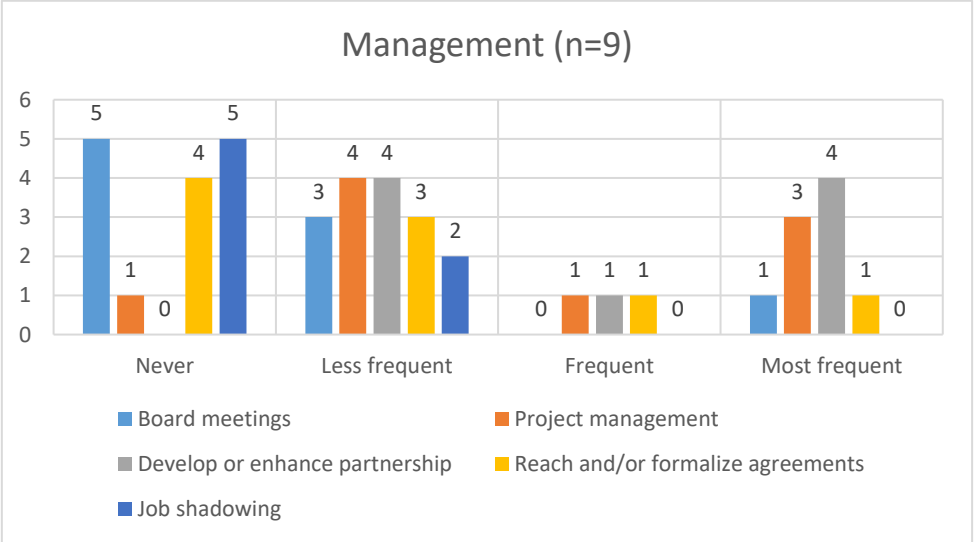
Figure 25: Most frequent purpose of work/academic related flights - Management

When asked about the *purpose of their work/academy related flights*, respondents (n=51) on the topic of "conferences" indicated "*participants*" and "*invited speakers*" as the *most frequent* (13 and 12, respectively) and *frequent* (20 and 17, respectively) purpose (see Figure 26). Aspects such as "*keynote speaker*" and "*organizer/host*" were assessed with *never* (28 and 18, respectively).
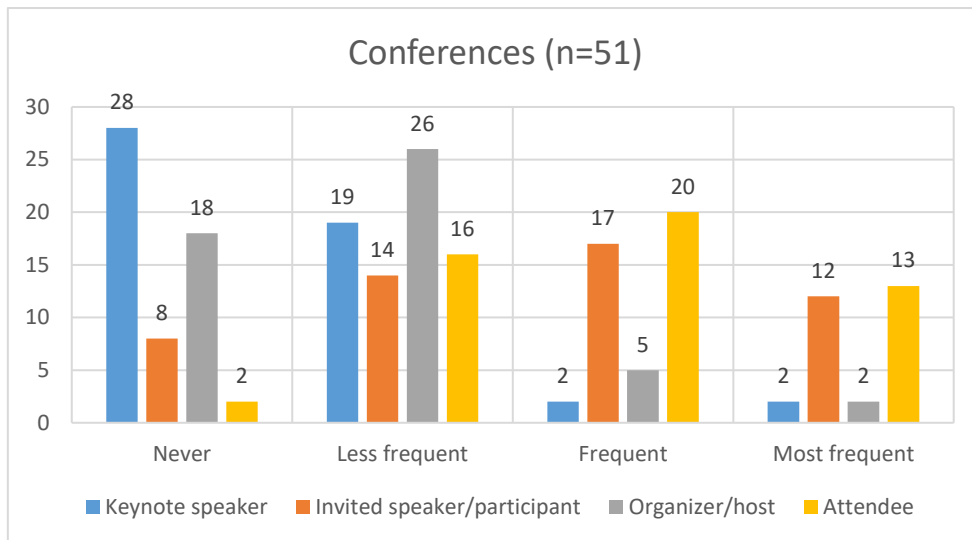
Figure 26: Most frequent purpose of work/academic related flights – Conferences

On the topic of "research", most respondents (n=42) indicated "*field research*" and "*workshops*" as the *most frequent* (9 and 8, resp.) purpose (see Figure 27). It is noticeable that "*research*" in the category "*frequently*" clearly *stands out* (22), followed by "*workshops*" in second place (14). The aspects "*teaching*" and "*fellowship*" were assessed with never (18 and 12, respectively).
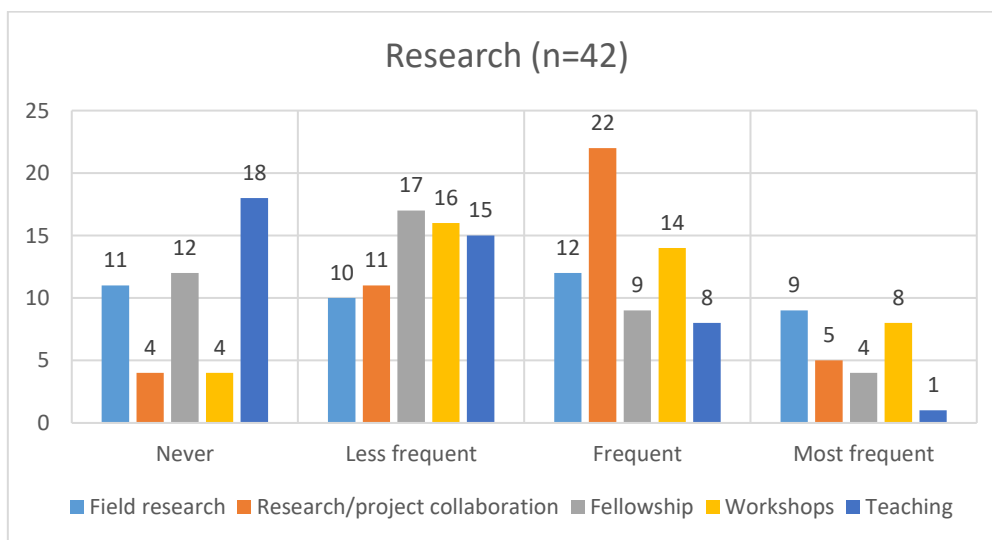
Figure 27: Most frequent purpose of work/academic related flights – Research

On the topic of "studies" most respondents (n=10, 59 skipped) indicated "*participate in student research project*" and "*internship*" as the *most frequent* (4 and 3, resp.) purpose (see Figure 28). Under the category "*never*" as a purpose, aspects such as "*summer/winter schools*" and "*internships*" (7 and 6, resp.) were the *most common ones*, directly followed by the aspect "gaining credits".
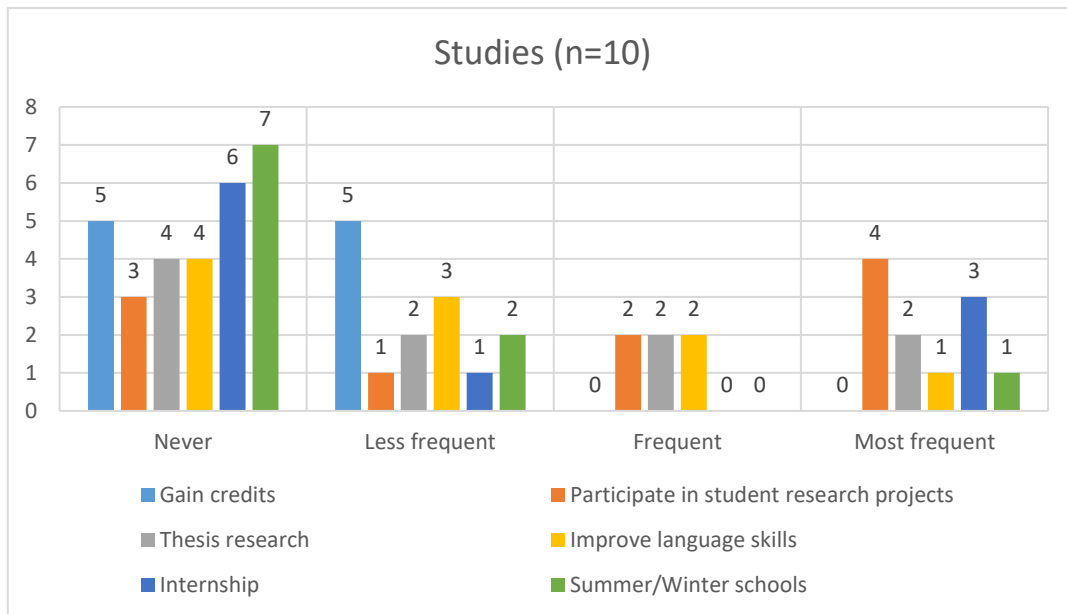
Figure 28: Most frequent purpose of work/academic related flights – Studies

In another question whereby the participants (n=51) had to choose among different general statements to give reasons for their flying the answers *"I appreciate the opportunity to visit other parts of the world and to get to know other cultures and scientific structures as part of my work/research/studies"* (26) and *"there is no alternative way to get to certain destinations"* (25), the most frequent answer was "*always applies*" (see Figure 29).

Under the category "*never applies*", the aspect "*it allows me to take advantage of my frequent flyer program*" was mentioned *most often* (38), followed by "*it is too much hassle to use or search for alternative modes of transport*" (32).
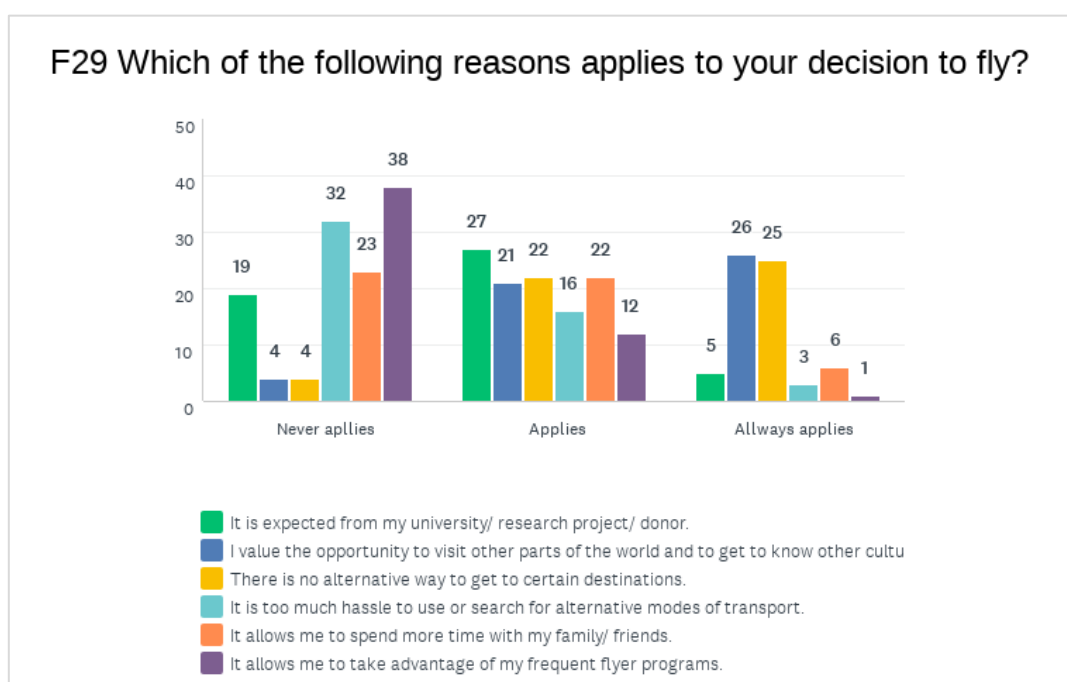
Figure 29: Reasons that apply to the decision to fly

1.3. Carbon offsets

We wanted to get a first impression of the extent to which respondents are aware of carbon offsets, whether they think about the impact of their trip on climate change and pollution, how much they would be willing to pay per flight for carbon offsets if they were reimbursed, and what the main barriers to buying carbon offsets are.

When asked whether they think about the impact of their flights on climate change and pollution, approximately *ninety percent* (46, n=52) answered "*yes*". Differentiated by gender, all women stated that they are quite concerned about the ecological and environmental effects of their flight behavior; while almost ten percent (5) of the men state that they are not concerned (see Figure 30, Appendix Figure 6 and Appendix Figure 7).
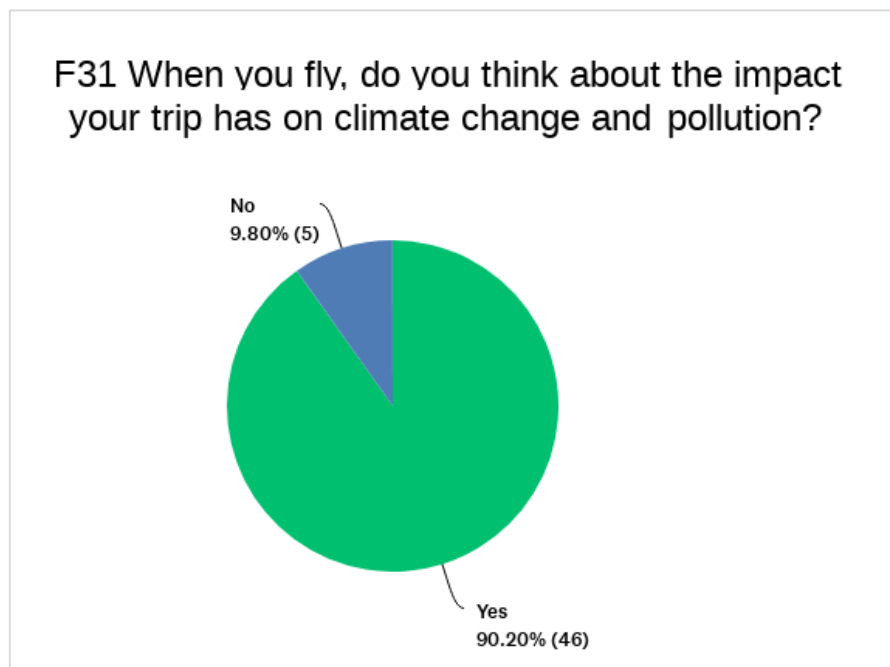
Figure 30: When you fly, do you think about the impact your trip has on climate change and pollution?

The acceptable price per person for offsets varies depending on whether the person is taking a short, medium-, or long-haul flight, but also "flight altitude, aircraft type, the number of seats on board and how many of them are occupied all play a very important role in the calculation of emissions" (http://www.atmosfair.de). None of the UAS partner universities has an official carbon offset policy for academic business/study air travel. However, the UBC recommends in its sustainable purchasing guide among other things to consider purchasing carbon offsets.[3]

Twenty-one respondents (n=51) declared their willingness to pay *26-50 euros* per flight for carbon offsets (see **Figure 31**). Interestingly, *fourteen* participants (seven each option) declared that they were

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[3] See https://finance.ubc.ca/procure-pay/sustainable-purchasing-guide/business-travel

willing either to pay *more than 100 euros or between 51 and 100 euros* per flight. *Five* indicated to pay *nothing at all* for carbon offsets.
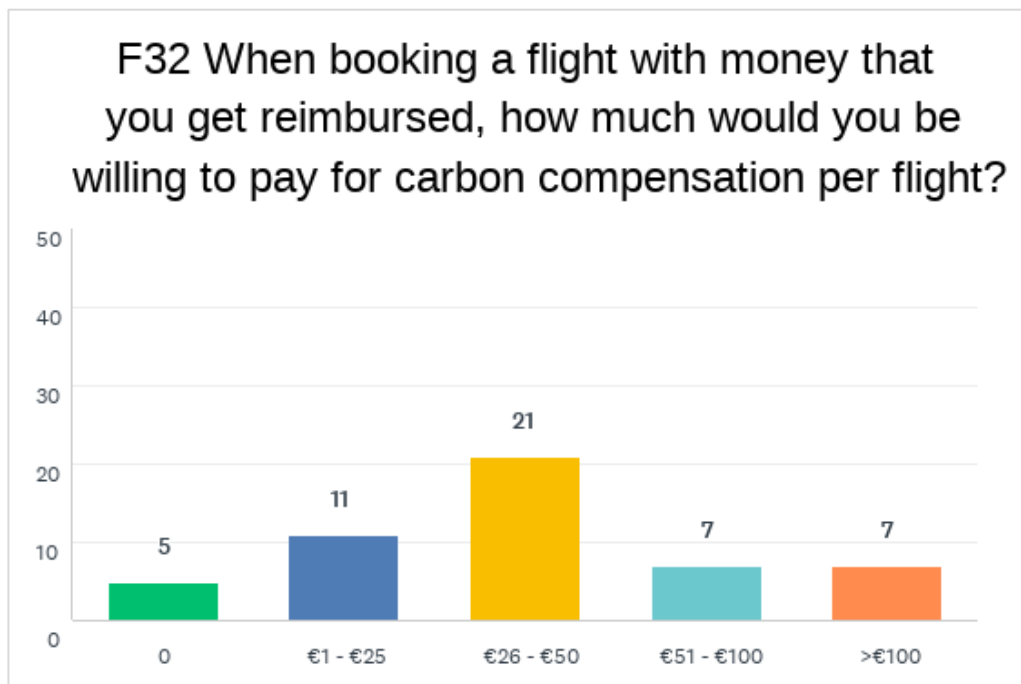
Figure 31: Willingness to pay for carbon compensation (with reimbursement)

Half of the *FUB respondents* (14, n=28) said they would be willing to spend between *26 and 100 euros*. The largest proportion stated that they would contribute between 26 and 50 euros, one person said to be willing to spend between 51 and 100 euros. It is noticeable that *six* of the seven people who stated to be willing to spend *more than 100 euros in total were respondents from the FUB*. This can may be correlated to the fact that, according to a representative survey by the Federal Environment Agency, the importance and awareness of issues of environmental and climate protection in Germany has continued to grow and increase in 2019 and that there is a great willingness to act in a climate-friendly direction.[4] Another interviewee was among the respondents from the HUJI (see Figure 32). Among the UBC respondents (n=9), the number of those who said they were willing to spend between 26 and 50 euros (5) and those who said they would spend between 51 and 100 euros (4) was roughly equal. The SPbU responses are homogeneous: all four stated that they would be willing to spend up to 25 euros.

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[4] See https://www.umweltbundesamt.de/daten/private-haushalte-konsum/umweltbewusstsein-umweltverhalten#klimabewusster-konsum
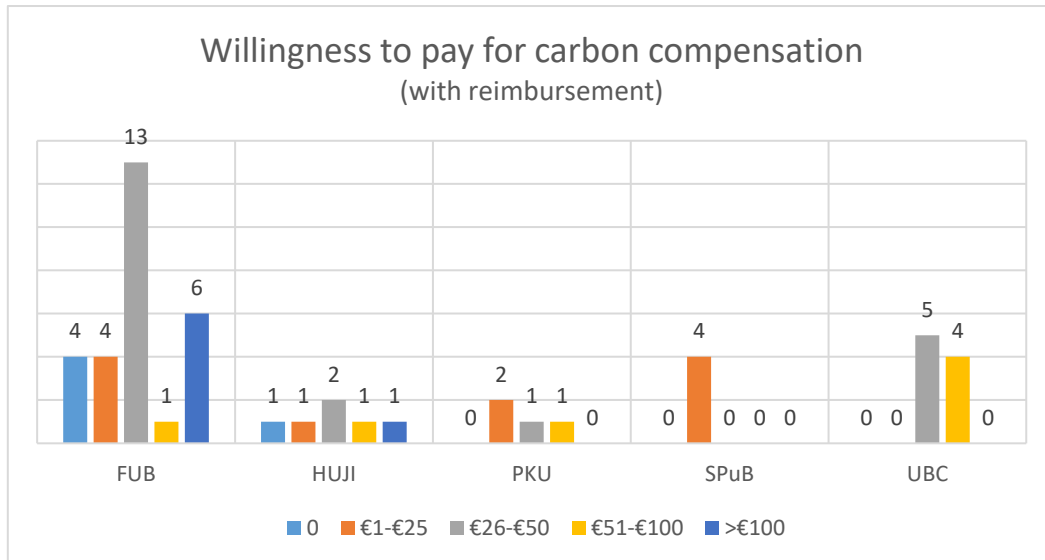
Figure 32: How much would you be willing to pay for carbon offsetting per flight? (reimbursement of expenses) - broken down by universities

It was possible to provide multiple answers to the question "*What are barriers to purchasing carbon offsets?*". Twenty-seven respondents (n=51) indicated that the **lack of a budget** for offsets at their universities was a **barrier to purchasing carbon offsets**. One respondent concluded that

"if the flight is paid for, and it is part of the work, also the compensation should be paid for"

Many respondents (16) mentioned that neither the university nor (inter)national grants reimburse the purchase of compensation, which is a major obstacle for those who want to offset their carbon emissions, but have no financial incentive to do so (see Figure 33). The current regulations and prescriptions at the universities actually do not provide that compensation payments can be claimed as part of the reimbursement of travel expenses:

"it is not a current policy which is recognized by the administration"
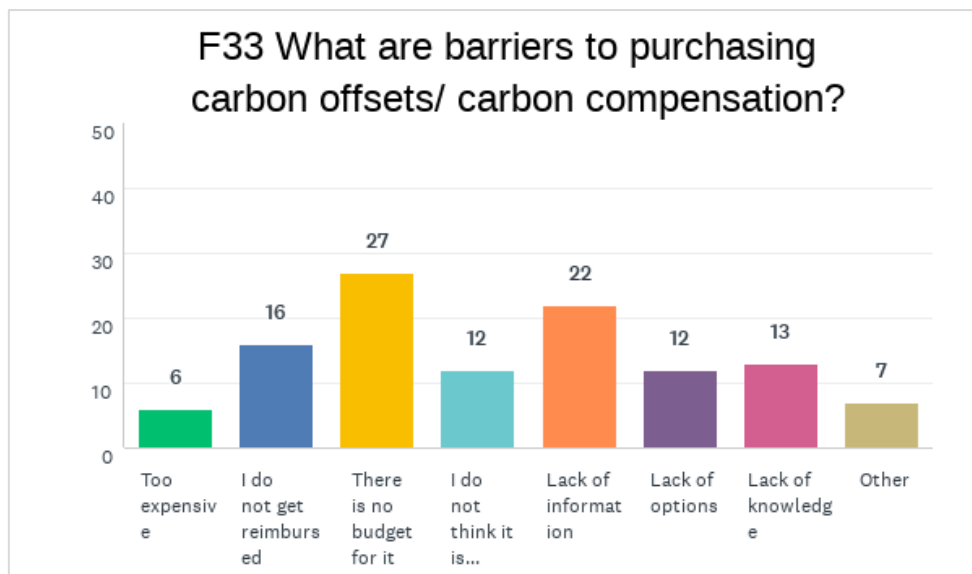
Figure 33: What are barriers to purchasing carbon offsets?

Twenty-two also indicated that the *lack of information* represented a barrier to purchasing carbon offsets. After all, twelve questioned the effectiveness of offsets and/or compensation projects in general. More than half of these respondents (7) were participants of FUB (see Table 2 and Figure 34).

Table 2: What are barriers to purchasing carbon offsets?

RESPONSE OPTIONS	REPONSES	
Too expensive	11.76%	6
I do not get reimbursed	31.37%	16
There is no budget for it	52.94%	27
I do not think it is effective	23.53%	12
Lack of information	43.14%	22
Lack of options	23.53%	12
Lack of knowledge	25.49%	13
Other	13.73%	7
Total respondents: 51		

In this context, four respondents expressed their concern that it was not clear and transparent how the compensation payments were used and indirectly questioned the validity of offsetting:

"It is unclear how is the money spent"

"Lack of knowledge what happens with this money and who profits from this"

"I see most of compensation projects very critical, but I would support a socially fair compensation"

"I am concerned about transparency. In addition, I feel that it is neoliberal cooptation of the environmental discourse by airline companies."

A single respondent stated that there are no barriers for him and that he generally pays offsets:

"I pay for it, so there is no barrier for me"

"These options do not apply to me"
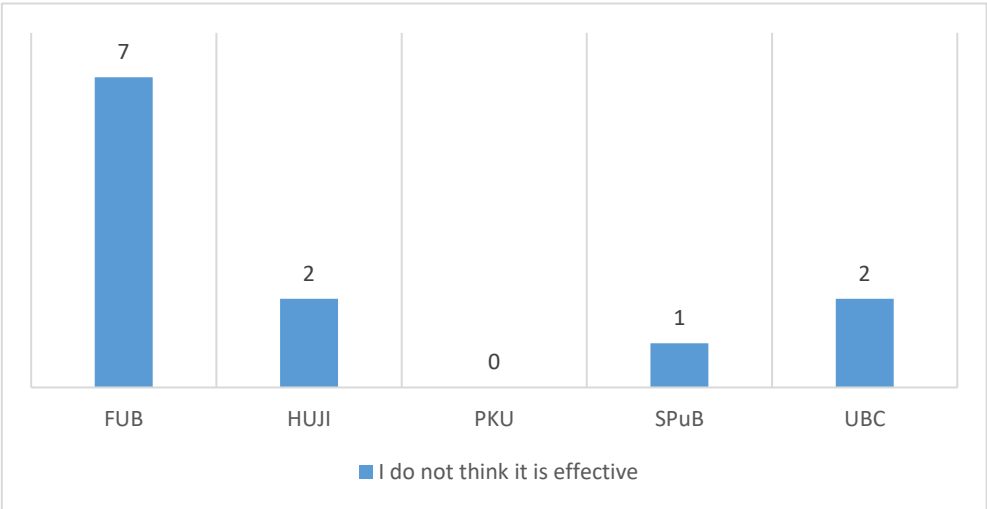
Figure 34: What are barriers to purchasing carbon offsets? Answer option focusing on "I do not think it is effective".

1.4. Virtual communication

The following sections provide an overview of the use of virtual communication tools as a possible alternative to travel. Survey participants were asked questions regarding their use of video conference and other tools and the importance of factors encouraging or discouraging them to use this alternative to travel.

1.4.1. Most frequent used tools

The vast majority of the respondents (45, n=49) indicated "*email*" as the "very frequent" used virtual communication tool, followed by "*instant-messaging/texting*" (28). Other "very frequent" used technologies were "video conference calls" (21) as well as "voice calls" (20) and, with a slightly lower number of users, "video chat - bilateral" (16) (see Figure 35). The highest number of responses in the categories "very frequent" and "frequent" was given to communication technology "email" with 49 respondents and "voice calls" with 46 respondents (see Appendix Figure 8).
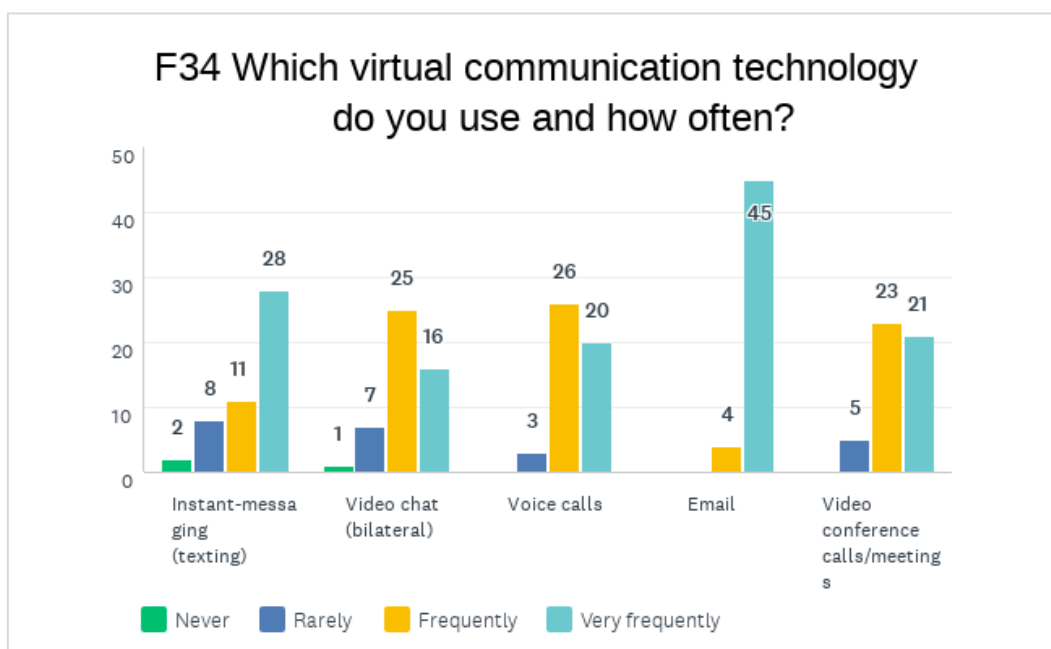
Figure 35: Most frequently used virtual communication technology

1.4.2. Setting and purpose of virtual communication technologies

The "very frequent" *setting* for virtual communication is either at *home* (28) or at the *office* (22). The same number of respondents (20) indicated that they use the "office" respectively the workplace "at home" "frequent" for virtual communication. Thirty-two respondents stated that they never used the university's specific video conference rooms as a setting for virtual communication (see Figure 36). These tendencies remain similar across all partner universities.

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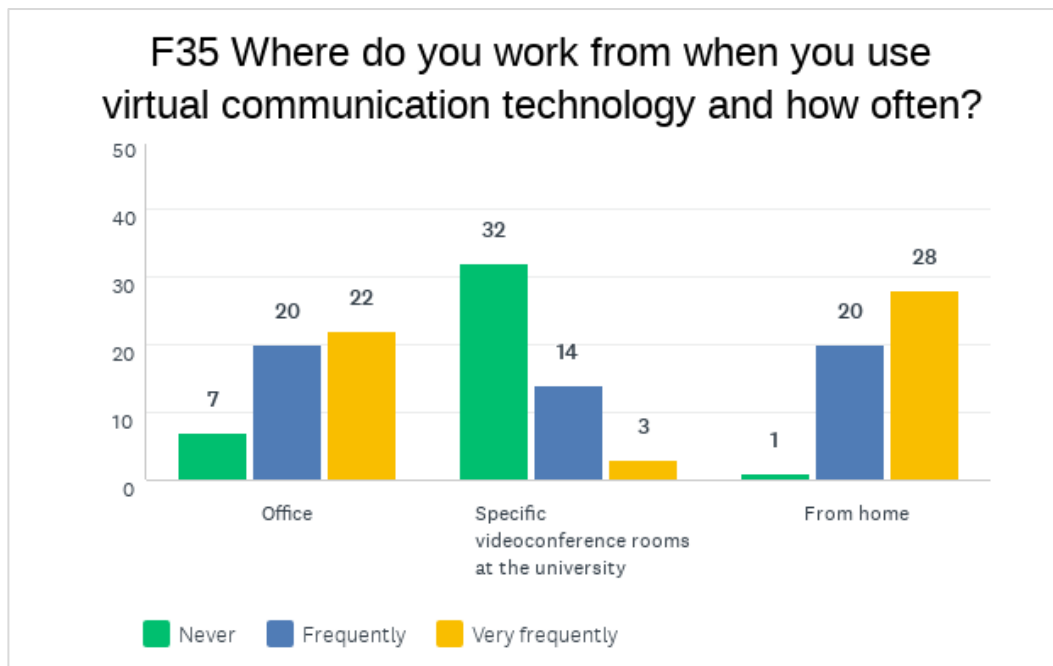
Figure 36: Frequency and setting of virtual communication

Virtual communication technologies are *most frequently* used for "*meetings (administration/ management)*". A total of forty respondents stated that this was either the "most frequent" (18) or "frequent" (22) purpose. The aspect of "*capacity building*" was also mentioned as "most frequent" reason (8) for using virtual communication technologies. In addition, "research" and "workshops/seminars" are among the "frequent" (24 each) reasons for using virtual communication technologies. The "*defense of theses*" and the "*paper review*" were among the most frequently mentioned activities that were *never* carried out (29 and 21, resp.) using virtual communication technologies. The use of virtual communication technologies was reported as rare or never for theses (43), paper reviews (35), conferences (33) and capacity (30) (see Figure 37).

One respondent added in this context that

> "*there is a significant negative effect in terms of quality in these virtual activities*".

Another pointed out that

> "*all changed due to Covid, and it may go back to 'normal'*"
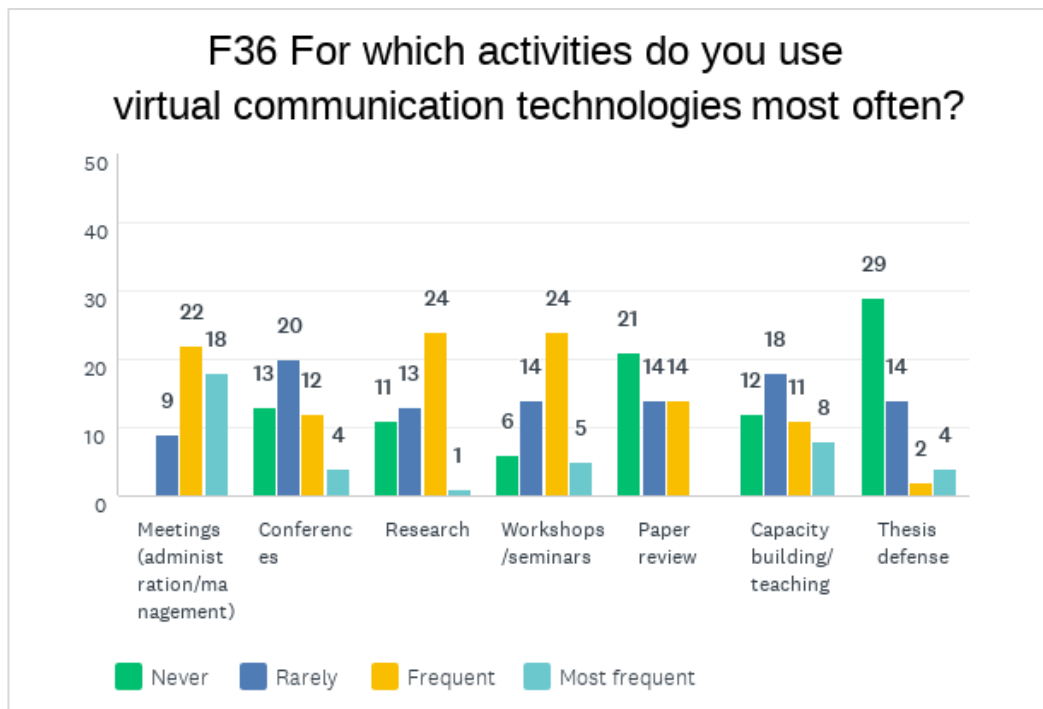
Figure 37: Use of virtual communication technologies

1.4.3. Attitudes towards virtual communication technologies and applications (n=49)

The *vast majority* of respondents (40) confirmed that they have *experience with virtual conferences* and events. However, as many as *nine persons* stated that they *had no experience* with these formats. Broken down into status groups, three Students, two PhDs, two Full professors, one Head of department and one Manager/administrative staff were among those who had not yet participated in virtual events (see Appendix Figure 11).

When asked how they rate *the videoconferencing facilities available at their university*, the *majority* said it was "*satisfactory*" (27), thirteen respondents said it was "good" and four even said that the existing installation was "excellent (see Figure 38).
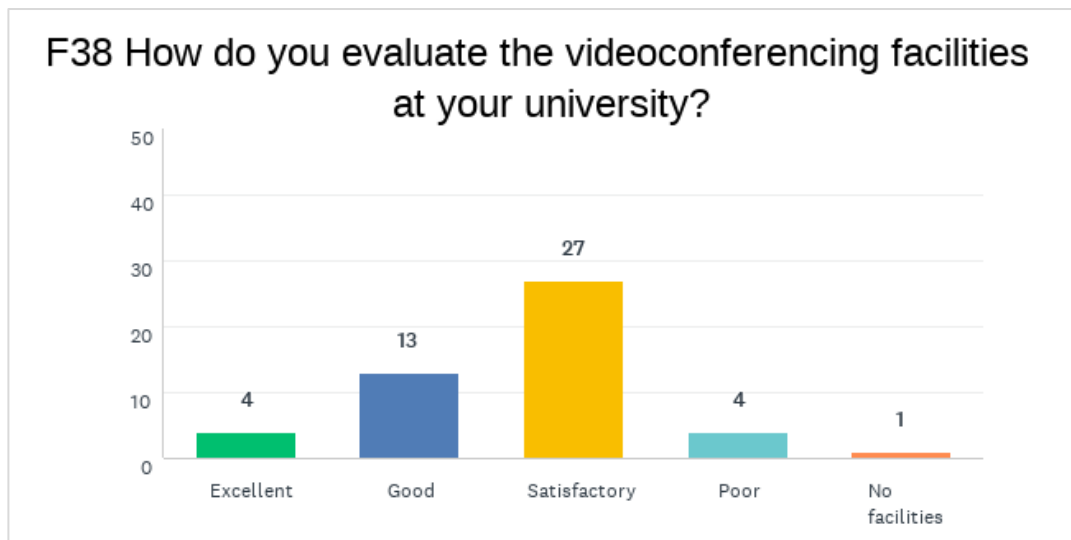
Figure 38: Evaluation of the videoconferencing facilities at the universities

The fact that four respondents from the FUB stated that they were "poor" or, according to one respondent, even "not-available", indicates that there is *not enough information and promotion about the four central rooms with high-quality video and audio equipment currently available at the Freie Universität Berlin* (see Appendix Figure 12). In addition, there are video conferencing systems at various faculties, which enable audio and video transmission as well as the possibility to send or receive video data from a PC and to record entire conferences with a storage medium, while being very simple and intuitive to use. For example, at the Department of Political and Social Sciences, the system has AES encryption, so that corresponding conferences and interactions remain confidential. In fact, one respondent from the FUB also stated that offering "*information*" would increase the motivation to use the videoconferencing facilities (question 39, category "other"). However, the limited awareness of the available conference rooms is not specific to a particular status group. The general tendency seems to be that the information and conditions for access to and use of conferencing tools at the respective universities are not yet sufficiently made known or easy to access. Thirty-seven respondents stated that easy access would certainly motivate them to use the respective video conferencing facilities, while thirty-five said that they would consider more qualitative services and IT support as motivating (see Figure 39). Financial support for the use of videoconferencing facilities was seen as an incentive by only 13 respondents. A senior researcher of the FUB pointed out under the category "other" that *"alumni and members of the ERG[5] may use the conference tools"*. One student stated that she would find it motivating "*using a programme which allows to walk through the university building, entering seminar rooms and approaching to people. Creating a digital space*".

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[5] Ernst-Reuter-Gesellschaft, See https://www.fu-berlin.de/sites/erg/index.html

"We have great facilities but imagine all of us would turn towards virtual work..."

In despite of the current existent facilities, this statement shows that some members are not willing to rely or switch totally or partially to a virtual setting. It can represent a certain level of fear and skepticism toward the uncertain outcomes of working virtually.
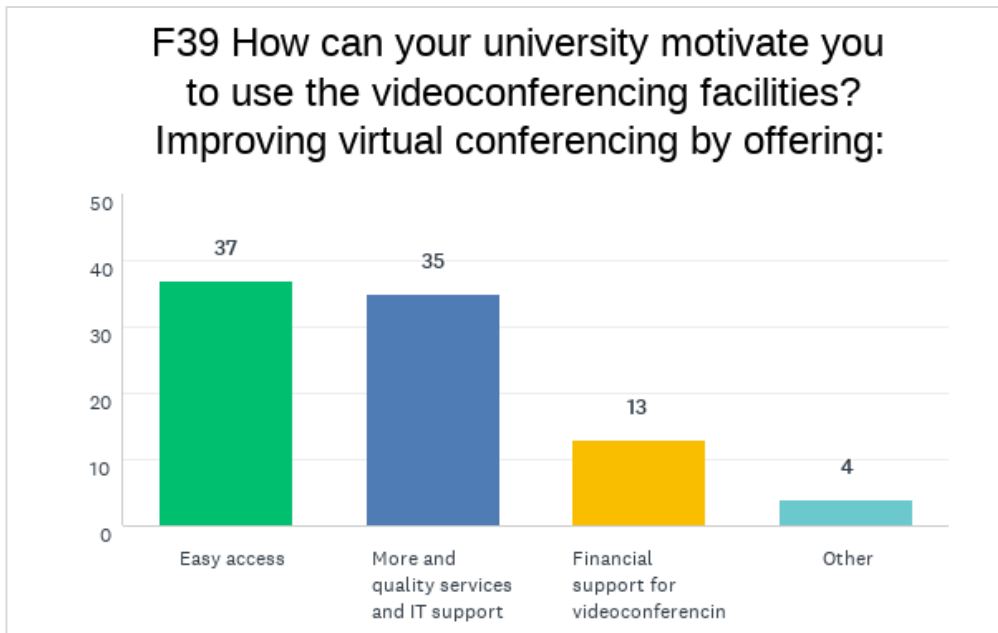
Figure 39: Measures to motivate the use of videoconferencing facilities

1.4.4. Factors discouraging the use of videoconferencing systems

The most important aspects *discouraging* the *use of videoconferencing systems* ("discouraging" and "very discouraging") were cited in particular as the *"lack of informal exchanges"* (41), followed by "technical problems" (38) and "less committed people" (33) (see Figure 40). The aspect "lack of informal exchange" stands out as the most clearly demotivating factor, as twenty-one respondents classified this aspect as "very discouraging" (see Figure 41). This unambiguous statement also corresponds with the findings that most respondents consider the aspects of academic networking to be clearly very important when travelling (see Chapter 1.2.1).
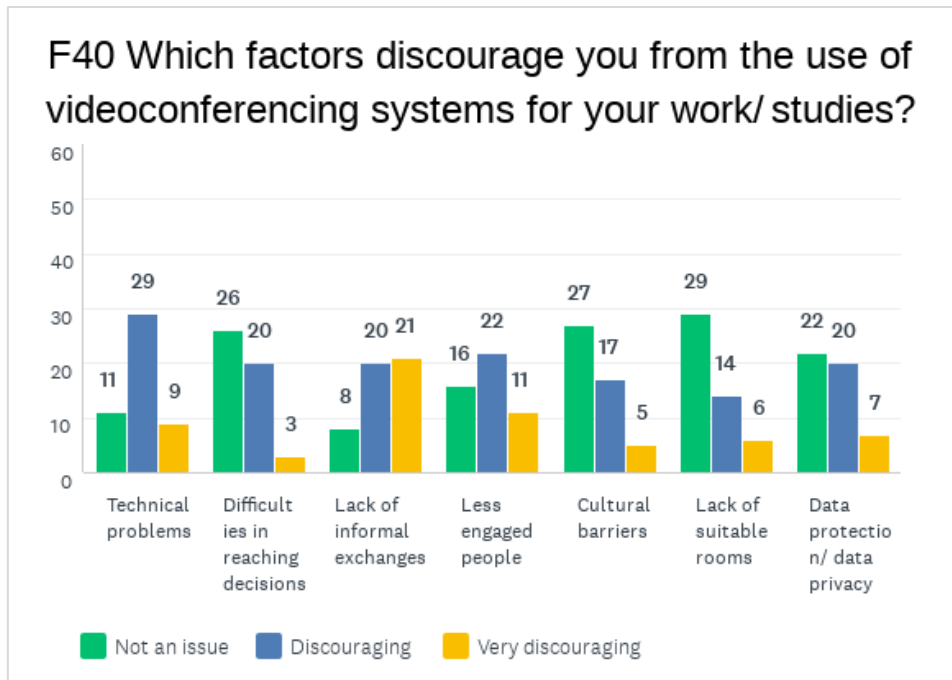
Figure 40: Discouraging factors in the use of videoconferencing systems

It is noticeable that in comparison to other status groups, the respondents from the *management/administrative staff (n=6) group did not classify any of the aspects as "very discouraging"*. All respondents in this group rated "*technical problems*" as discouraging followed by "lack of informal exchange" (4). Concerning the "data protection" issue, younger respondents tend to rate this aspect as very discouraging. Seven participants rated the aspect of data protection as very discouraging.

One respondent raised concerns that it is

> *"difficult meeting new people, as I am not used to online networking (some conferences offer this but it is more difficult for me to engage in discussions, ask the right questions at the right time, and be able to interpret the atmosphere in the "room", more difficult to approach people you don't know"*

Overall, *psychological factors* seem to be most important in discouraging the use of videoconferencing systems (see Figure 41). The impression that videoconferencing provides *fewer/no possibilities of informal exchange* is the *most discouraging factor*. Furthermore, many respondents find the fact that people are less engaged and that there are cultural barriers very discouraging.
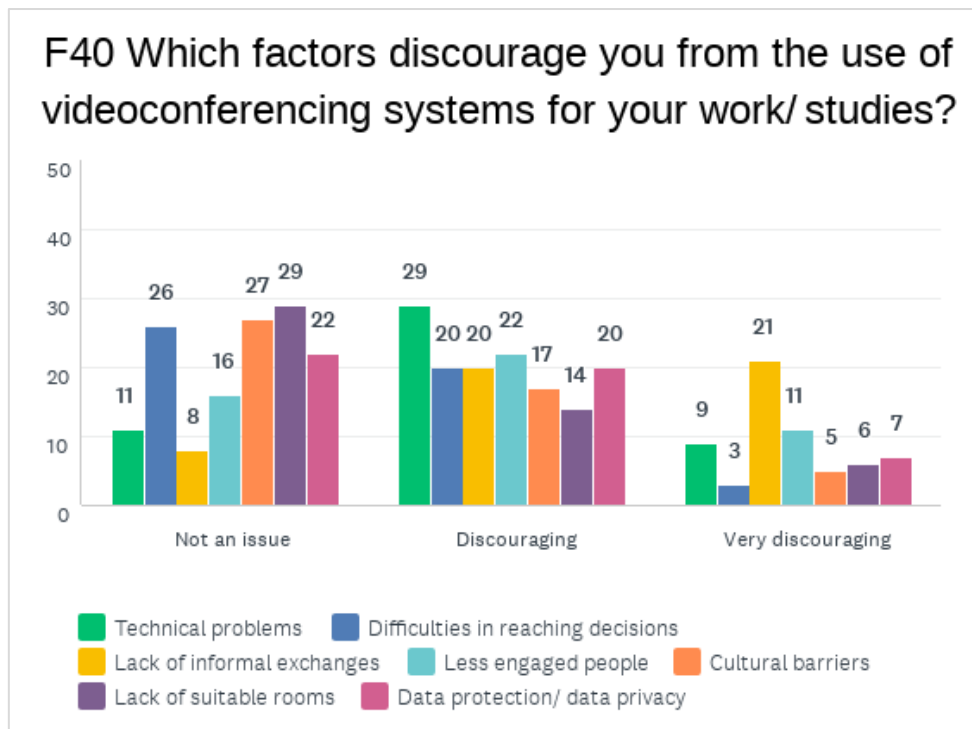
Figure 41: Discouraging factors in the use of videoconferencing systems

1.4.5. Importance of face-to-face meetings and activities that could be substituted by videoconferencing

The vast majority of respondents considered **face-to-face meetings** either "*important*" (25) or "very important" (20) for their work, studies or/and research (see Appendix Figure 14).

In terms of people's willingness to **replace** their travel and **face-to-face meetings with video conferencing**, respondents were inclined to rethink their personal participation in activities such as "**strategy talks**" and "**conferences**" (30 each) and "workshops" (28).

One respondent stated that

> *"as I said, I am attending conferences now online but only because everyone is online and there is no way of attending and meeting these people in person, maybe it needs some time for people to adjust to this but technically it is definitely possible"*

The **greatest willingness** to replace on-site participation with video conferencing was expressed by most participants for activities such as "**project meetings**" (25) and "keynote, interventions, presentations" (19). Participation in "workshops" was one of the most frequently (12) mentioned activities where participants would not be willing to replace them with video conferencing (see Figure 42).

Figure 42: Willingness to substitute travelling and face-to-face meetings with videoconferencing

In an open question the respondents explained why they considered that personal meetings are still important (see Table 3 and Figure 43):

Table 3: Reasons why personal meeting is still important

Identifier/Cited Reasons	Open responses
Direct contact and communication	• "Direct interaction with people" • "Feel more comfortable" • "In an intercultural context personal interaction helps understand different points of views in different cultural and political contexts" • "Communication between people is more convenient and rich" • "Can communicate more fully, can deepen the feelings" • "Physical contact and feedback needed to better connect and to have a more effective conversation and outcome. Also, social interactions outside work related conversations needed for better connection and enjoying collaborative work (which in turn leads to more productivity)" • "Informal aspects of communication play important role" • "Extended bilateral communication"
Familiarization/Socialization	• "Getting to know each other" • "Get to know each other better through sufficient time for interaction"
Trust	• "Develop trust" • "Building trust" • "It gives a much better sense of understanding, engagement, and trust amongst participants" • "Particular starting projects needs personal contact and trust"
Non-verbal communication	• "Reading between the lines" • "It's possible to read facial reactions and react/act accordingly" • "Humans are social beings, we need more than just image and voice to form an opinion, sympathy etc. that might lead to more." • "It is all about tacit knowledge and the way one can discuss things in more informal ways" • "Face-to-face meetings are important for evaluating partners' informal reactions to offers." • "Much subtle information and emotions cannot pass through a video meeting. I think these are extremely important factors in healthy and effective

	communication. Especially, for people from different cultures, which English is not their native language."
	• "A virtual meeting does not allow for the small clues in the contact which are often unnoticed but registered when there is 3D contact"
	• "Because of the immediate interaction with the meeting partners. Body language and gestures are an important component of communication. By face-to-face communication misunderstandings are less likely to occur."
	• "There are aspects of communication and knowledge that are only communicated in person. Getting to know colleagues and the cultures and places where we are situated gives context that is incredibly important. That said, once we know each other in person, we can meet between times online, and bring our contextual knowledge to virtual meetings. Some combination of in-person and virtual meetings could reduce the need for air travel."
Conflict Resolution	• "Less misunderstandings"
	• "Communication problems can be solved much faster"
	• "Personal contact, more effective and humanized deep understanding, reduce the misunderstanding"
	• "Personal meetings allow exchanges at a quality which cannot be substituted by technology-based remote meetings, which create numerous misunderstanding, lack of engagement by participants, depress creativity and more. I am a technology savvy person and use a lot of technology, yet I acknowledge its limitations."
	• "Through video conferencing it's possible to discuss a problem, solve a problem etc. but you do not get a "feel" who the person in front of the camera is, what kind of person they are etc. In personal meetings getting an impression of a person is easy and automatic. I find that solving problems during a personal meeting is much easier and direct. In video conferencing it always remains to be seen whether people are actually on the same line, who can work together, who is better suited to do what etc. Compromising is easier in personal meetings as well. In video conferencing I feel people more often stick to 'safeguarding' their interests/wishes to the detriment of the process."
	• "It would be more efficient for communication."
Lasting partnerships/ Contacts/ Commitment	• "Better bonding"
	• "It is a much better way to be interpersonal and assess your Interlocutor"
	• "It is easier to make meaningful and lasting connections"
	• "Easier to get point across, more relationship building"
	• "More nuanced communication, easier to build a relationship."
	• "Particularly to get to know people you have not met before"
	• "Personal meetings build a different bond and commitment"
Uncertain outcomes	• "Serendipitous topics, results, etc."
Added value	• "Social sciences profit only from exchange and discussion"
Lack of experience	• "I have never experienced a lively discussion in an online seminar or video call or something"
Attention	• "More attentive"
Leisure/preferences	• "I Like it" • "Habitual. Fun"

Figure 43: Word cloud – Can you explain why the personal meeting is so important? (open question)

1.5. Impact of COVID-19 on virtual communication attitudes and behavior (n=48)

This survey was conducted in the middle of the Covid-19 pandemic phase which was marked by a noticeable change in teaching, studies and research at universities. This incident prompted us to inquire to what extent the respective work and communication behavior has changed over the past few months with regard to the use of virtual communication media.

In fact, *thirty-seven respondents confirmed that their attitude towards considering videoconferencing technology has changed*. Eleven of them stated that their attitude had not changed due to the impact of the rise of COVID 19. All respondents reported that during the rise of COVID-19, their *use of videoconferencing technology* for studying and/or business related activities *increased*.

When asked if they think that the implications of COVID-19 might have an impact on their study or business travel patterns, habits and decisions in the next 2-3 years, forty-two answered with yes. One respondent negated that there would be an impact and five stated that they did not know. Of those who answered yes, thirty-three specified that their university was "prepared" (24) or "well prepared" (9) to face these new challenges in terms of video communication facilities and logistics. *Eight respondents, all from the FUB, stated that in their opinion their university was unprepared to face these new challenges* (see Figure 44). This could be an indicator that the information about existing infrastructure and software services at the university is not sufficiently known, and that more targeted communication is needed.
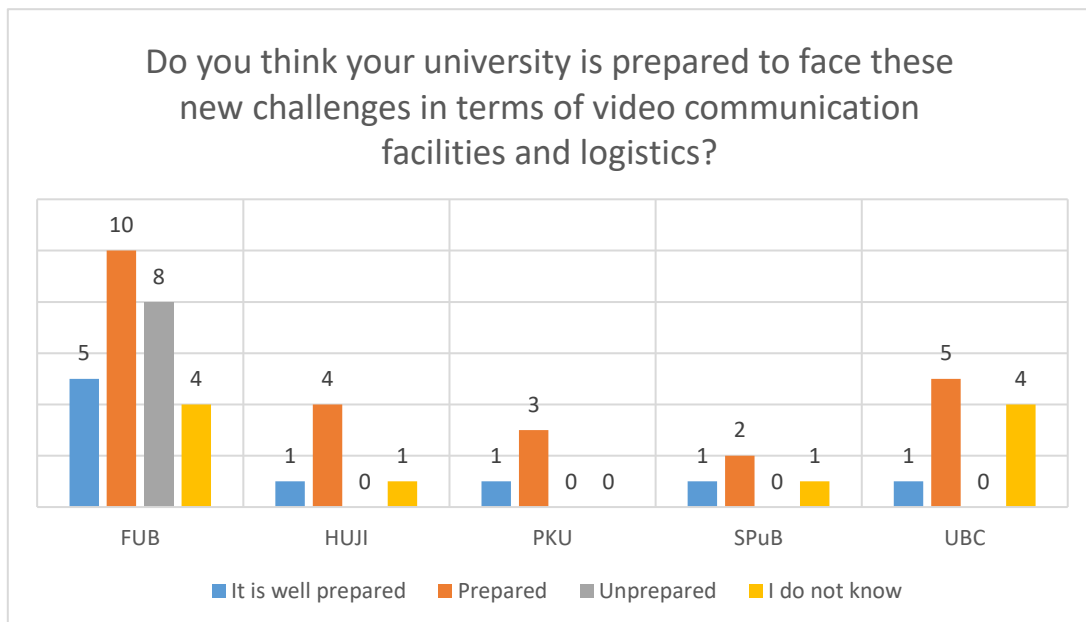
Figure 44: Condition of the university in the face of new challenges

A. Appendices
a. Appendix Figures

Appendix Figure 1: Factors that influence the choice of transport

Appendix Figure 2: Maximum travel time that would be accepted for train travel

Appendix Figure 3: Maximum travel time that would be accepted for train travel

Appendix Figure 4: Incentives to opt for alternatives to flying
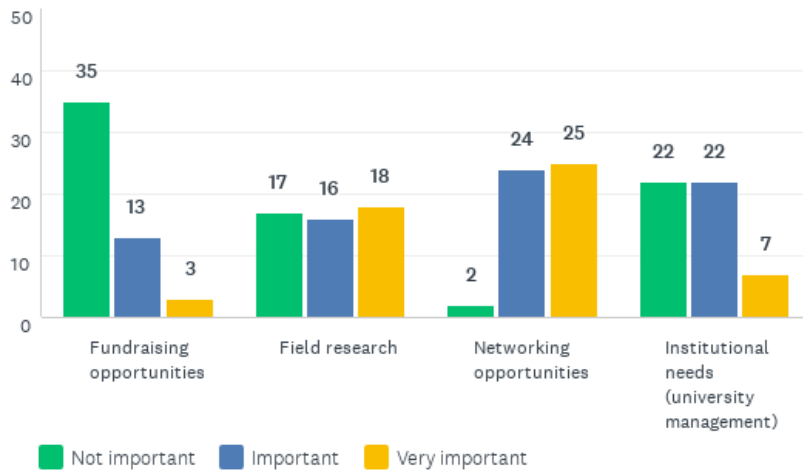
Appendix Figure 5: Motives to travel and importance

Appendix Figure 6: When you fly, do you think about the impact your flight has on climate change and pollution – women

Appendix Figure 7: When you fly, do you think about the impact your flight has on climate change and pollution – men

Appendix Figure 8: Most frequently used virtual communication technology
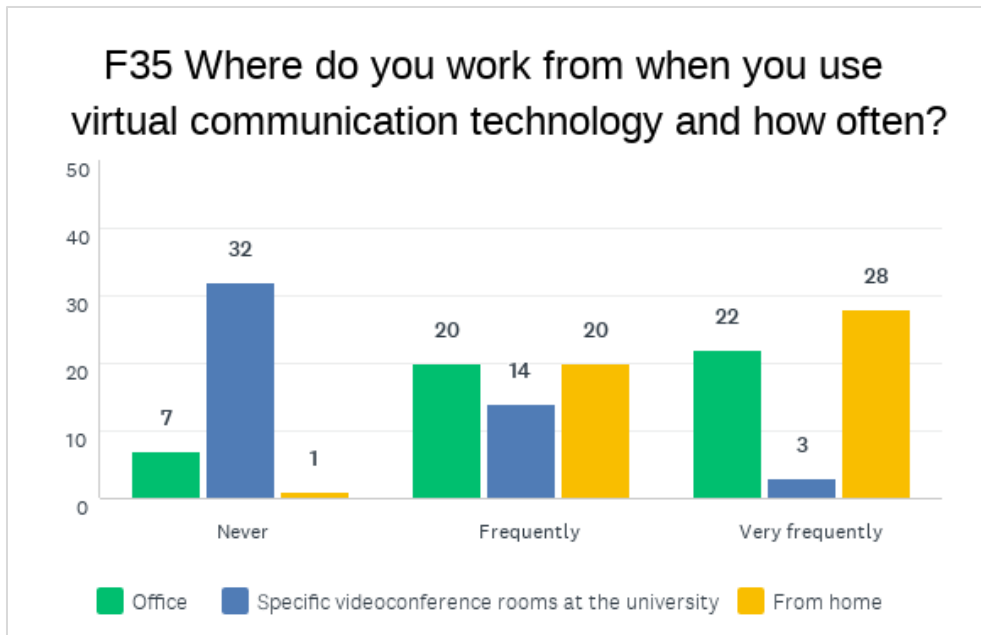
Appendix Figure 9: Frequency and setting of virtual communication
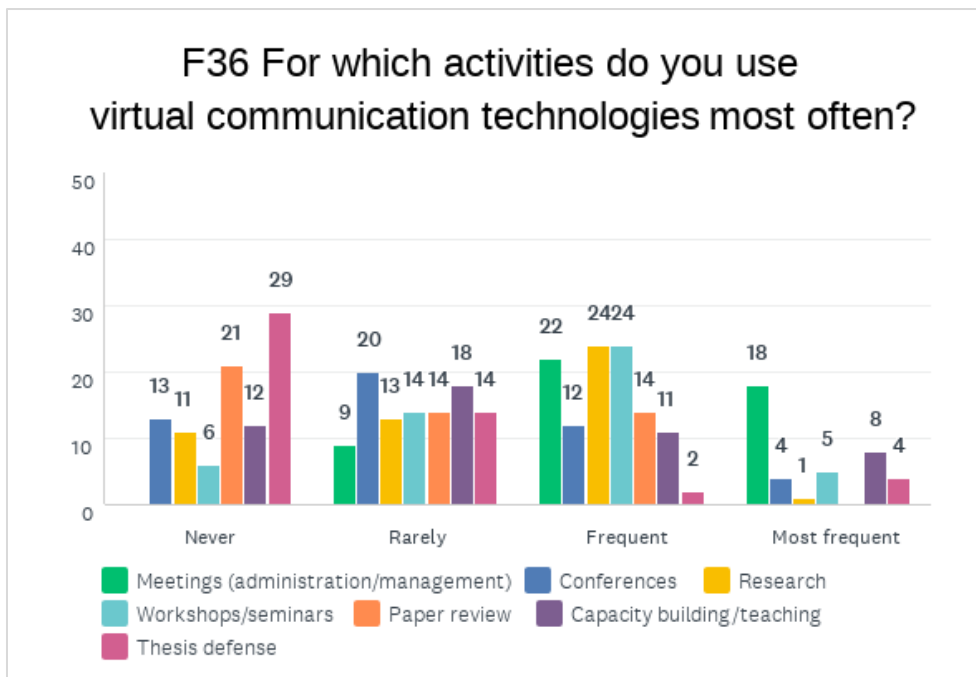
Appendix Figure 10: Most frequent use of virtual communication technologies

Appendix Figure 11: Experience with virtual conferences and events
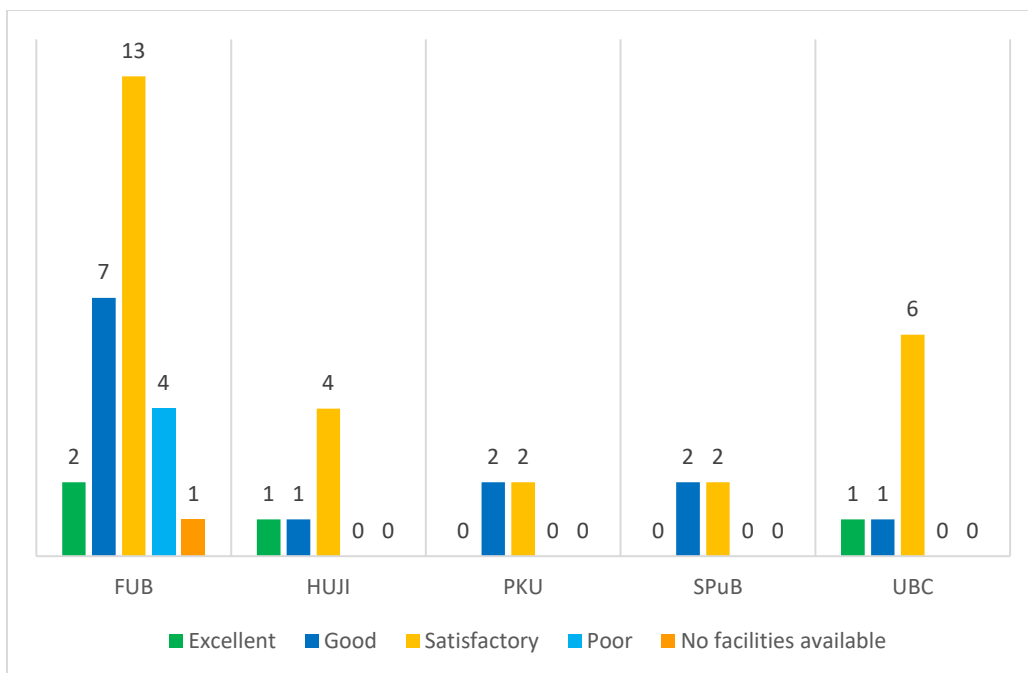
Appendix Figure 12: Evaluation of the videoconferencing facilities broken down by universities
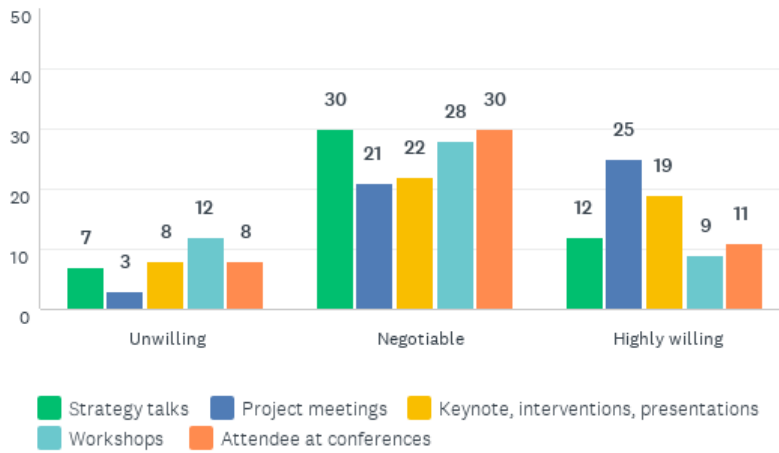
Appendix Figure 13: Willingness to substitute travelling and face-to-face meetings with videoconferencing
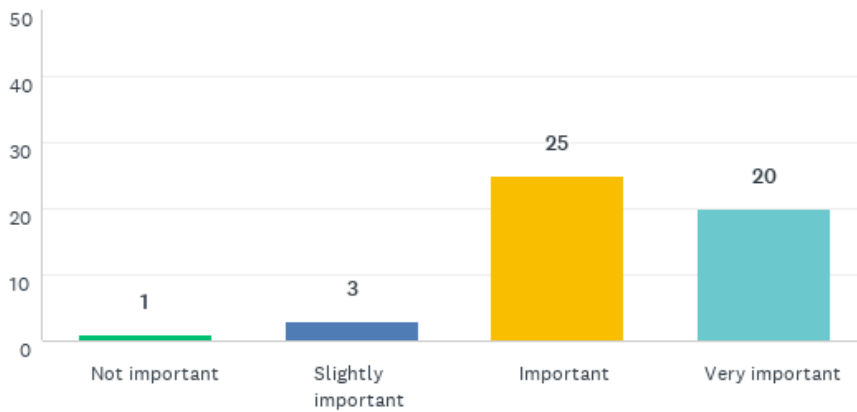
Appendix Figure 14: Importance of face-to-face meetings and direct exchanges

b. Appendix Survey Responses

F1 What is your age?
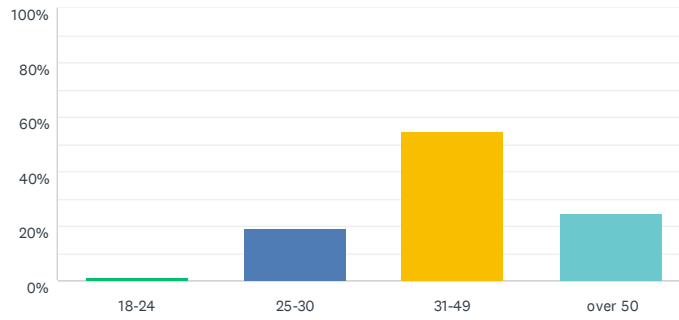
ANTWORTOPTIONEN	BEANTWORTUNGEN	
18-24	1.45%	1
25-30	18.84%	13
31-49	55.07%	38
over 50	24.64%	17
GESAMT		69

F2 What is your gender?

Beantwortet: 69   Übersprungen: 0
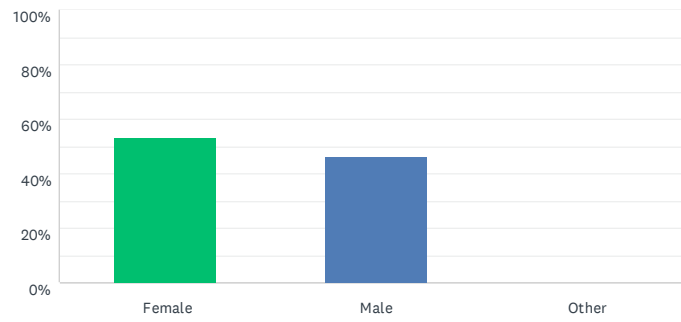
ANTWORTOPTIONEN	BEANTWORTUNGEN	
Female	53.62%	37
Male	46.38%	32
Other	0.00%	0
GESAMT		69

F3 Which is your home university?
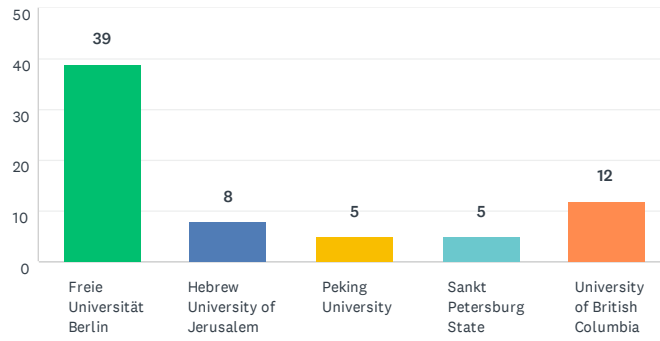
ANTWORTOPTIONEN	BEANTWORTUNGEN	
Freie Universität Berlin	56.52%	39
Hebrew University of Jerusalem	11.59%	8
Peking University	7.25%	5
Sankt Petersburg State University	7.25%	5
University of British Columbia	17.39%	12
GESAMT		69

F4 To which faculty/department do you belong?

Beantwortet: 69   Übersprungen: 0
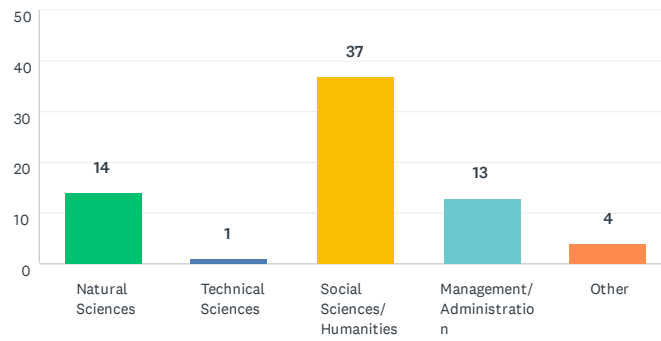
ANTWORTOPTIONEN	BEANTWORTUNGEN	
Natural Sciences	20.29%	14
Technical Sciences	1.45%	1
Social Sciences/ Humanities	53.62%	37
Management/ Administration	18.84%	13
Other	5.80%	4
GESAMT		69

#	OTHER	DATE
1	I left FU in 2017	6/2/2020 3:56 PM
2	I graduated in 2019 with a PhD from the Graduate School of East Asian Studies and School of Business and Economics	5/29/2020 2:04 AM
3	education	5/21/2020 7:07 PM
4	Faculty of Medicine	5/20/2020 1:40 PM

F5 What position do you ocupy in the university?

Beantwortet: 69   Übersprungen: 0
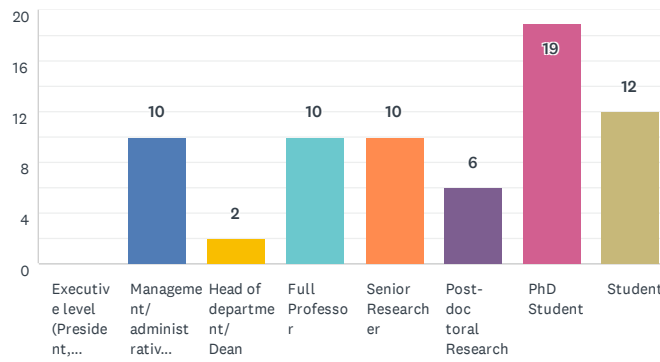
ANTWORTOPTIONEN	BEANTWORTUNGEN	
Executive level (President, Vice-President, Chancellor, etc.)	0.00%	0
Management/ administrative staff	14.49%	10
Head of department/ Dean	2.90%	2
Full Professor	14.49%	10
Senior Researcher	14.49%	10
Post-doctoral Researcher	8.70%	6
PhD Student	27.54%	19
Student	17.39%	12
GESAMT		69

F6 What is the most frequent purpose of your work/ academic-related flights?? (Management/ administration) (Please, select one answer per line)

Beantwortet: 9   Übersprungen: 60
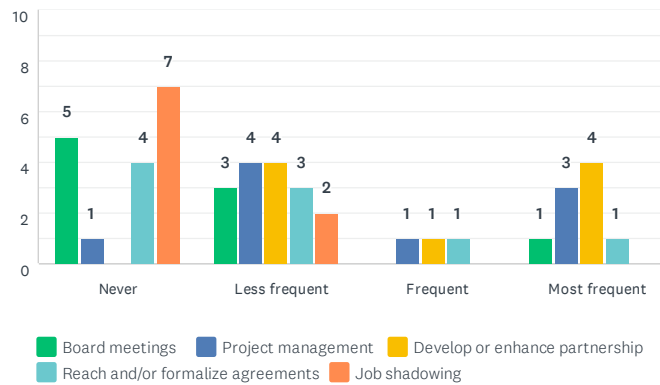
	BOARD MEETINGS	PROJECT MANAGEMENT	DEVELOP OR ENHANCE PARTNERSHIP	REACH AND/OR FORMALIZE AGREEMENTS	JOB SHADOWING	INSGESAMT	GEWICHTETER MITTELWERT
Never	29.41% 5	5.88% 1	0.00% 0	23.53% 4	41.18% 7	17	1.00
Less frequent	18.75% 3	25.00% 4	25.00% 4	18.75% 3	12.50% 2	16	2.00
Frequent	0.00% 0	33.33% 1	33.33% 1	33.33% 1	0.00% 0	3	3.00
Most frequent	11.11% 1	33.33% 3	44.44% 4	11.11% 1	0.00% 0	9	4.00

F7 What is the most frequent purpose of your work/ academic-related flights?(Conferences) (Please, select one answer per line)

Beantwortet: 9   Übersprungen: 60
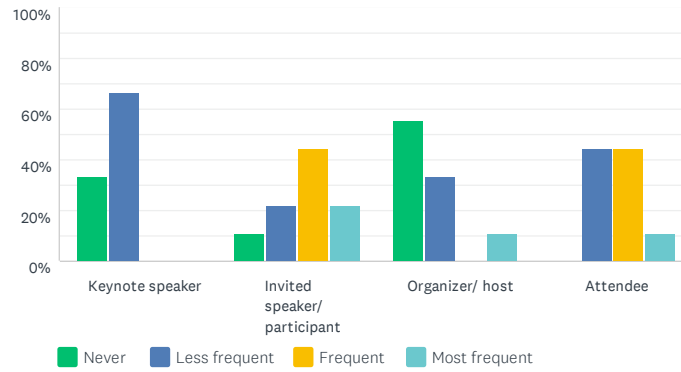
	NEVER	LESS FREQUENT	FREQUENT	MOST FREQUENT	INSGESAMT	GEWICHTETER MITTELWERT
Keynote speaker	33.33% 3	66.67% 6	0.00% 0	0.00% 0	9	1.67
Invited speaker/ participant	11.11% 1	22.22% 2	44.44% 4	22.22% 2	9	2.78
Organizer/ host	55.56% 5	33.33% 3	0.00% 0	11.11% 1	9	1.67
Attendee	0.00% 0	44.44% 4	44.44% 4	11.11% 1	9	2.67

F8 How often have you flown abroad for academic reasons in the last year (Jan - Dec 2019)? (number of trips)

Beantwortet: 9   Übersprungen: 60
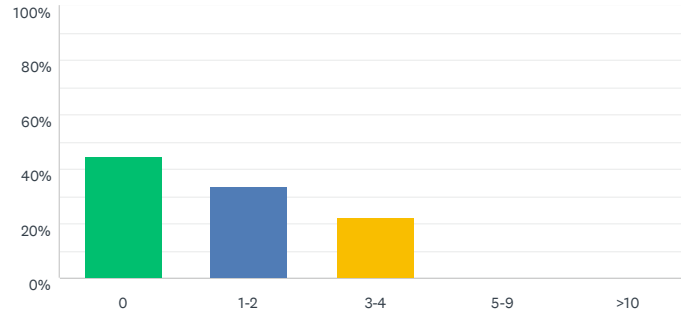
ANTWORTOPTIONEN	BEANTWORTUNGEN	
0	44.44%	4
1-2	33.33%	3
3-4	22.22%	2
5-9	0.00%	0
>10	0.00%	0
GESAMT		9

F9 What is the most frequent purpose of your work/ academic-related flights? (Conferences) (Please, select one answer per line)

Beantwortet: 42   Übersprungen: 27
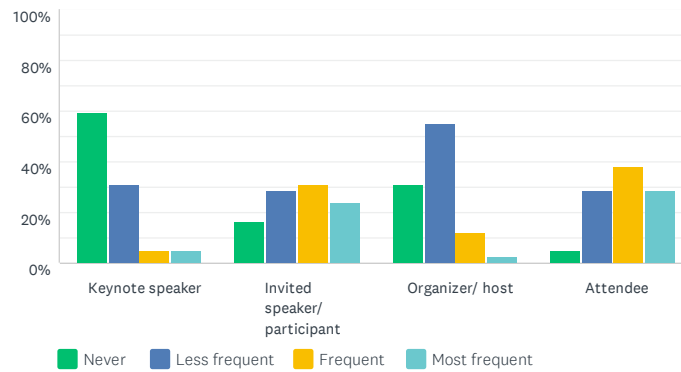
	NEVER	LESS FREQUENT	FREQUENT	MOST FREQUENT	INSGESAMT	GEWICHTETER MITTELWERT
Keynote speaker	59.52% 25	30.95% 13	4.76% 2	4.76% 2	42	1.55
Invited speaker/ participant	16.67% 7	28.57% 12	30.95% 13	23.81% 10	42	2.62
Organizer/ host	30.95% 13	54.76% 23	11.90% 5	2.38% 1	42	1.86
Attendee	4.76% 2	28.57% 12	38.10% 16	28.57% 12	42	2.90

F10 What is the most frequent purpose of your work/ academic-related flights? (Research) (Please, select one answer per line)

Beantwortet: 42   Übersprungen: 27
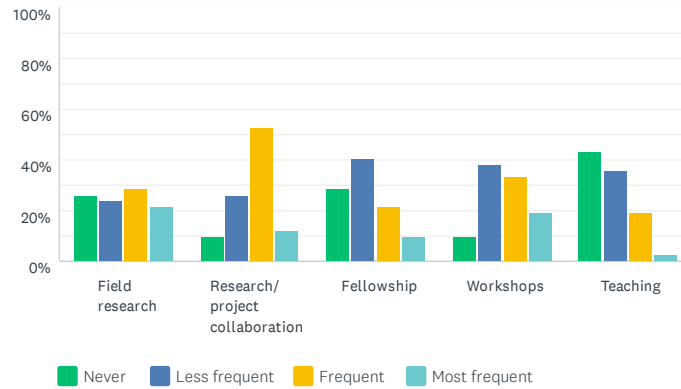
	NEVER	LESS FREQUENT	FREQUENT	MOST FREQUENT	INSGESAMT	GEWICHTETER MITTELWERT
Field research	26.19% 11	23.81% 10	28.57% 12	21.43% 9	42	2.45
Research/ project collaboration	9.52% 4	26.19% 11	52.38% 22	11.90% 5	42	2.67
Fellowship	28.57% 12	40.48% 17	21.43% 9	9.52% 4	42	2.12
Workshops	9.52% 4	38.10% 16	33.33% 14	19.05% 8	42	2.62
Teaching	42.86% 18	35.71% 15	19.05% 8	2.38% 1	42	1.81

F11 How often have you flown abroad for academic reasons in the last year (Jan - Dec 2019)? (number of trips)

Beantwortet: 42   Übersprungen: 27
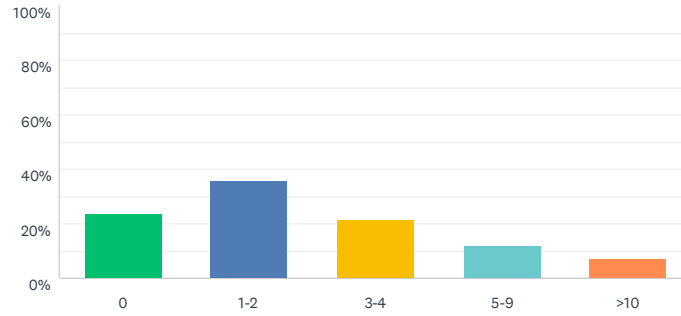
ANTWORTOPTIONEN	BEANTWORTUNGEN	
0	23.81%	10
1-2	35.71%	15
3-4	21.43%	9
5-9	11.90%	5
>10	7.14%	3
GESAMT		42

F12 What is the most frequent purpose of your academic-related flights? (Studies) (Please, select one answer per line)

Beantwortet: 10   Übersprungen: 59
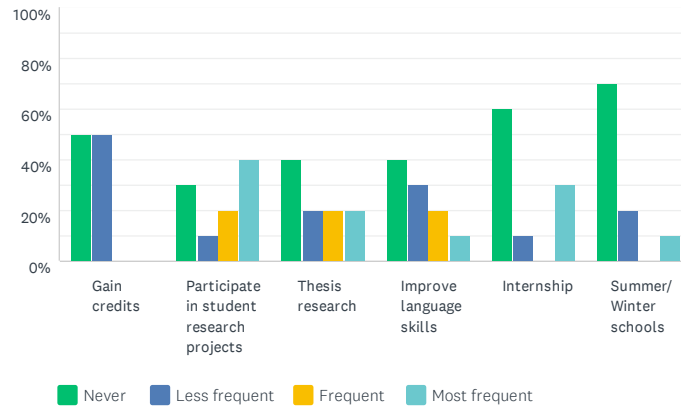
	NEVER	LESS FREQUENT	FREQUENT	MOST FREQUENT	INSGESAMT	GEWICHTETER MITTELWERT
Gain credits	50.00% 5	50.00% 5	0.00% 0	0.00% 0	10	1.50
Participate in student research projects	30.00% 3	10.00% 1	20.00% 2	40.00% 4	10	2.70
Thesis research	40.00% 4	20.00% 2	20.00% 2	20.00% 2	10	2.20
Improve language skills	40.00% 4	30.00% 3	20.00% 2	10.00% 1	10	2.00
Internship	60.00% 6	10.00% 1	0.00% 0	30.00% 3	10	2.00
Summer/ Winter schools	70.00% 7	20.00% 2	0.00% 0	10.00% 1	10	1.50

F13 How often have you flown abroad for academic reasons in the last year (Jan - Dec 2019)? (number of trips)

Beantwortet: 10   Übersprungen: 59
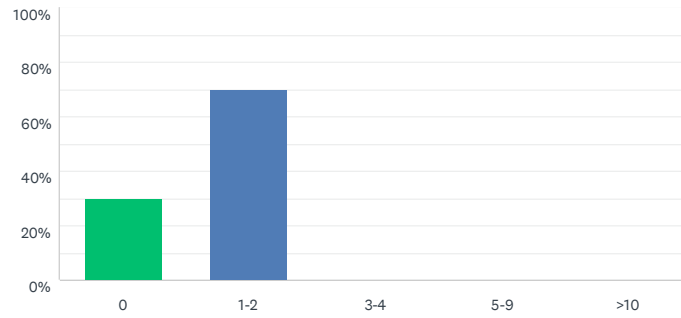
ANTWORTOPTIONEN	BEANTWORTUNGEN	
0	30.00%	3
1-2	70.00%	7
3-4	0.00%	0
5-9	0.00%	0
>10	0.00%	0
GESAMT		10

F14 Is the amount of work/ academic-related air travels you did the last year:

Beantwortet: 55   Übersprungen: 14
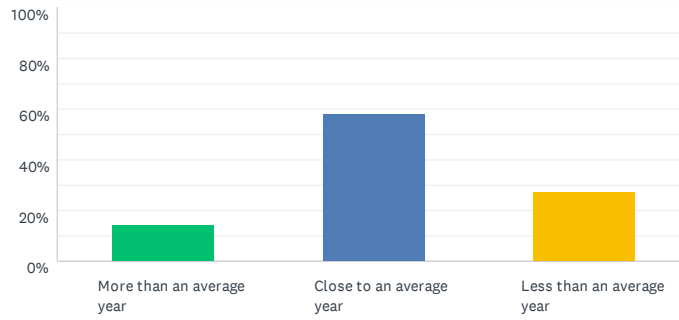
ANTWORTOPTIONEN	BEANTWORTUNGEN	
More than an average year	14.55%	8
Close to an average year	58.18%	32
Less than an average year	27.27%	15
GESAMT		55

F15 Would you like to increase or decrease your number of work/ academic related air trips?

Beantwortet: 55   Übersprungen: 14

Increase
36.36% (20)
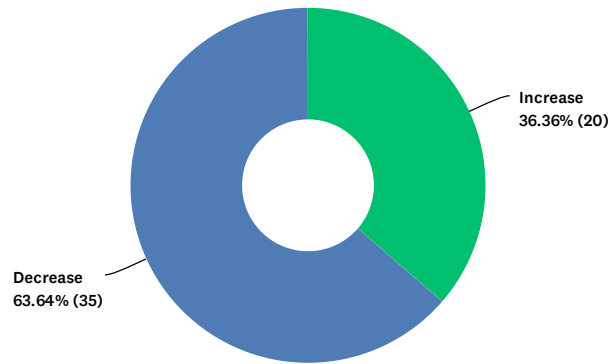
Decrease
63.64% (35)

ANTWORTOPTIONEN	BEANTWORTUNGEN	
Increase	36.36%	20
Decrease	63.64%	35
GESAMT		55

F16 Why?

Beantwortet: 45   Übersprungen: 24

UAS Mobility Survey 2020

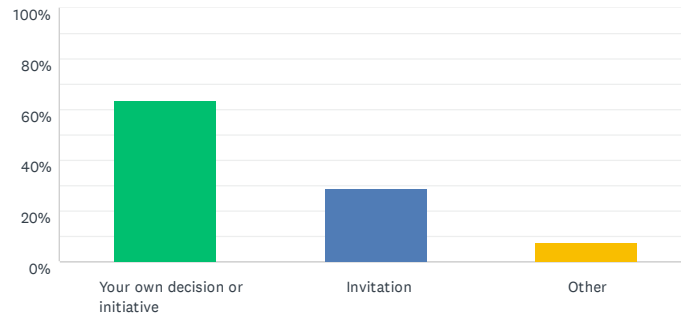| #	BEANTWORTUNGEN	DATE
1	some more cooperation would be good!	6/15/2020 9:47 AM
2	To foster relationships with research partners and participants As a source of inspiration	6/10/2020 10:15 AM
3	Reduce GHGs and set an example	6/9/2020 12:53 AM
4	I am trying to take alternative transportation if within Europe because I am aware of the emissions from air travel and would like to reduce my carbon footprint (so not necessarily trying to reduce overall trips, only air trips whenever possible.) The 2 trips for academic studies were to North and South America, therefore air travel.	6/5/2020 10:28 AM
5	time, pollution	6/4/2020 5:58 AM
6	Planetary boundaries	6/3/2020 2:18 PM
7	no need	6/2/2020 10:16 AM
8	Due to climate protection	6/2/2020 10:10 AM
9	environmental considerations, family obligations	6/2/2020 10:03 AM
10	Because it will help me with my research	5/31/2020 9:59 AM
11	Strengthen the communication	5/31/2020 5:09 AM
12	Air pollution/ ecological footprint	5/30/2020 12:55 PM
13	Health reasons	5/29/2020 2:06 AM
14	Because it enormously improves my academic skills and exposes me to important aspects in my field	5/28/2020 3:15 PM
15	Save the environment, environmental bads are unproportionally distributed, travelling instead of using digital means thus harms the disadvantaged in the world the most.	5/28/2020 2:31 PM
16	More Research	5/28/2020 2:01 PM
17	To reduce costs and to have less impact on the environment	5/28/2020 1:42 PM
18	It is important to be in contact with colleagues and complete research.	5/28/2020 12:44 PM
19	Reduce Greenhouse Gas Emissions	5/28/2020 12:10 PM
20	I will retire this year	5/28/2020 12:03 PM
21	face-to-face interaction helps to promote and expand cooperation; some travelling could be substituted by video conferences but I always make good use of my trips and combine several purposes (research, teaching, field visits)	5/28/2020 11:31 AM
22	some of the meetings can be organized online	5/28/2020 9:37 AM
23	Considering the impact air travel has on the environment, I need to reduce my trips.	5/27/2020 9:12 PM
24	Cost and carbon impact	5/27/2020 8:39 PM
25	Decrease my carbon emission	5/27/2020 7:49 PM
26	Neither - I would prefer to leave the frequency as is. Slight preference for increase.	5/27/2020 6:57 PM
27	To reduce costs and to cause less impact on the environment	5/27/2020 6:52 PM
28	Covid-19 demonstrated to me that only so much can be done by zoom etc. Research relies on personal ties to a much larger degree than thought of ..	5/27/2020 6:27 PM
29	Emissions, trying to shift to fewer but longer fieldwork trips.	5/27/2020 6:20 PM
30	New contacts and cases	5/27/2020 4:38 PM
31	The aim to develop field research and educational programs with international participation	5/26/2020 1:08 PM
32	time and money	5/21/2020 10:12 PM
33	Wastefule	5/21/2020 7:09 PM
34	I wish to create more professional contacts	5/21/2020 4:56 AM
35	I want to reduce my footprint out of conviction; While I love my work and consider it very relevant, I don't think I can legitimize the CO2 emissions of a flight to a conference - my work does not have enough impact; I am strongly davpn convinced that almost all scientists need to be more modest about their own effectiveness	5/20/2020 5:45 PM
36	due to ecological reasons	5/20/2020 3:49 PM
37	I feel not all conferences etc. I attend are very useful. I would decrease my attendance of lesser conferences, and thus reduce my number of flights.	5/20/2020 2:15 PM
38	it creates additional work, but it is partly inevitable. Virtual meeting are not always possible and efficient.	5/20/2020 12:00 PM
39	good for the cooperation with partners	5/20/2020 11:56 AM
40	decrease co2 emissions	5/20/2020 11:30 AM
41	Time, inconvenience	5/20/2020 10:38 AM
42	Stressful; Environmental reasons	5/20/2020 9:58 AM
43	Research connections	5/20/2020 9:29 AM
44	To minimize emissions, air travel should also be minimized and done very strategically. However I travel by air very infrequently, and I think this level is close to being OK.	5/20/2020 12:01 AM
45	I want to lessen my carbon footprint in face of global climate change. I have always tried to combine several conferences, visiting professorships and research collaborations on one flight	5/19/2020 6:17 PM

by travelling by train, ferry and bicycle once I arrive in a distant place. I would like to do this even more.

F17 The majority of your work/research/study air travels results from…

Beantwortet: 55   Übersprungen: 14

ANTWORTOPTIONEN	BEANTWORTUNGEN	
Your own decision or initiative	63.64%	35
Invitation	29.09%	16
Other	7.27%	4
GESAMT		55

#	OTHER	DATE
1	Planning or expectation of the supervisor	6/3/2020 2:18 PM
2	Project Management	6/2/2020 10:03 AM
3	Both	5/29/2020 2:06 AM
4	Collaborative European projects	5/20/2020 12:00 PM

F18 Most of the time who organizes the travel arrangements (air tickets) at your university?

Beantwortet: 55   Übersprungen: 14
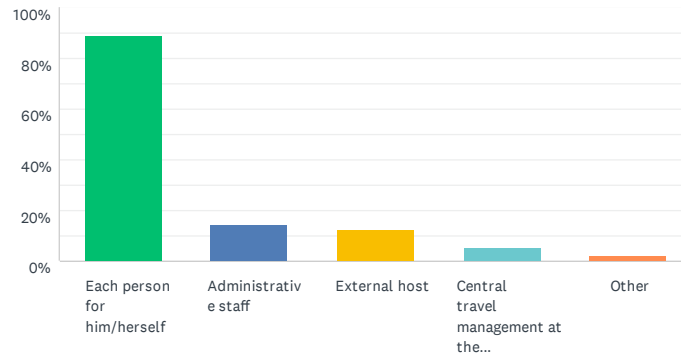
ANTWORTOPTIONEN	BEANTWORTUNGEN	
Each person for him/herself	89.09%	49
Administrative staff	14.55%	8
External host	12.73%	7
Central travel management at the university	5.45%	3
Other	1.82%	1
Befragte insgesamt: 55		

#	OTHER	DATE
1	mix	5/27/2020 6:27 PM

F19 When you decide not to fly which factors do you take into account and how important are they? (Please, select one answer per line)

Beantwortet: 55   Übersprungen: 14
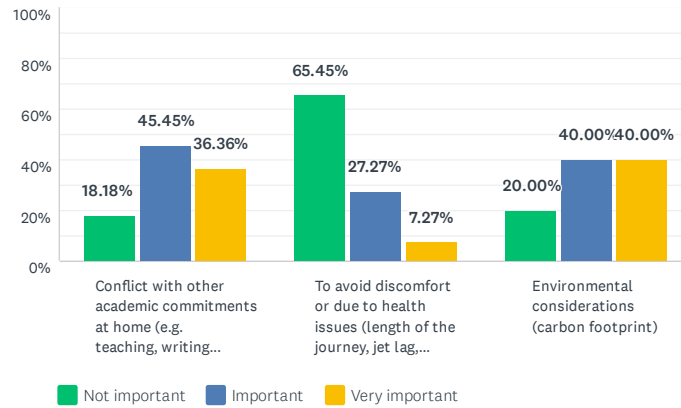
	NOT IMPORTANT	IMPORTANT	VERY IMPORTANT	INSGESAMT
Conflict with other academic commitments at home (e.g. teaching, writing papers, research)	18.18% 10	45.45% 25	36.36% 20	55
To avoid discomfort or due to health issues (length of the journey, jet lag, fatigue)	65.45% 36	27.27% 15	7.27% 4	55
Environmental considerations (carbon footprint)	20.00% 11	40.00% 22	40.00% 22	55

#	OTHER	DATE
1	time for longer and slower travel accepted by boss?	6/5/2020 10:28 AM
2	I watch my carbon footprint but then research often asks for balancing decisions	5/27/2020 6:27 PM
3	Kids + burden placed on partner	5/20/2020 9:29 AM

F20 Roughly how many academic trips did you take by plane in the past two years (Jan 2018 - Dec 2019)?

Beantwortet: 54   Übersprungen: 15
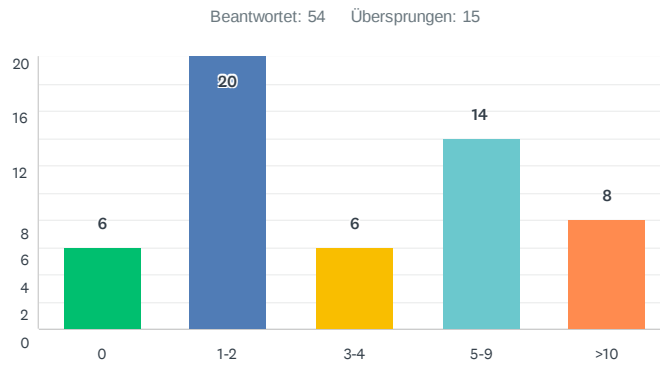
ANTWORTOPTIONEN	BEANTWORTUNGEN	
0	11.11%	6
1-2	37.04%	20
3-4	11.11%	6
5-9	25.93%	14
>10	14.81%	8
GESAMT		54

F21 How many of these flights did you book as business or first class flight?

Beantwortet: 54   Übersprungen: 15
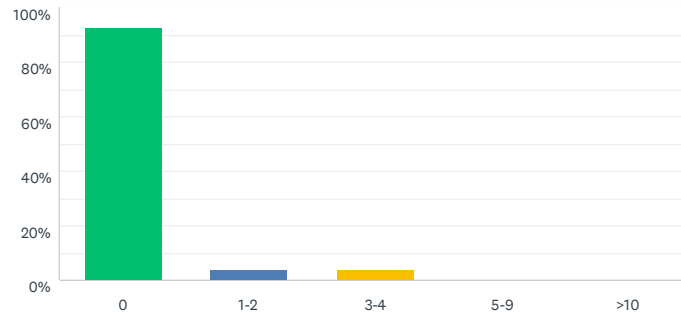
ANTWORTOPTIONEN	BEANTWORTUNGEN	
0	92.59%	50
1-2	3.70%	2
3-4	3.70%	2
5-9	0.00%	0
>10	0.00%	0
GESAMT		54

F22 Which continent is your most frequent flight destination?

Beantwortet: 54   Übersprungen: 15
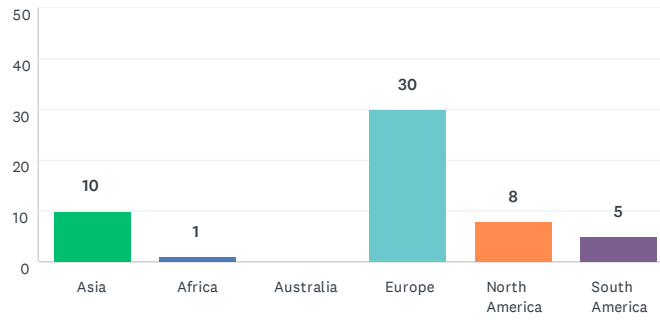
ANTWORTOPTIONEN	BEANTWORTUNGEN	
Asia	18.52%	10
Africa	1.85%	1
Australia	0.00%	0
Europe	55.56%	30
North America	14.81%	8
South America	9.26%	5
GESAMT		54

F23 Why do you travel and how important is that motive for your work?
(Please, select one answer per line)

Beantwortet: 51   Übersprungen: 18
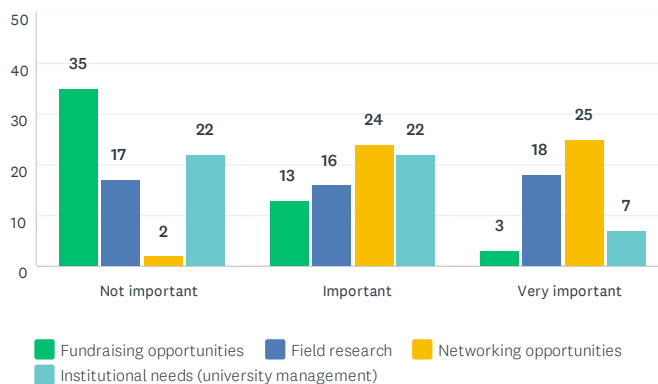
	FUNDRAISING OPPORTUNITIES	FIELD RESEARCH	NETWORKING OPPORTUNITIES	INSTITUTIONAL NEEDS (UNIVERSITY MANAGEMENT)	INSGESAMT	GEWICHTETER MITTELWERT
Not important	46.05% 35	22.37% 17	2.63% 2	28.95% 22	76	1.00
Important	17.33% 13	21.33% 16	32.00% 24	29.33% 22	75	2.00
Very important	5.66% 3	33.96% 18	47.17% 25	13.21% 7	53	3.00

#	OTHER	DATE
1	presentation of research and feedback, starting career, "getting into the bubble"; 1-2 additional flights were made between 2018 and 2019 for internships and work experience, important for international relations scholars	6/5/2020 10:52 AM
2	Communication with partners; presenting results	6/3/2020 2:33 PM
3	international experience for a better career	5/28/2020 12:19 PM
4		5/20/2020 1:58 PM

F24 When choosing a means of transport, what are the most important factors you consider? (Please, select one answer per line)

Beantwortet: 51   Übersprungen: 18
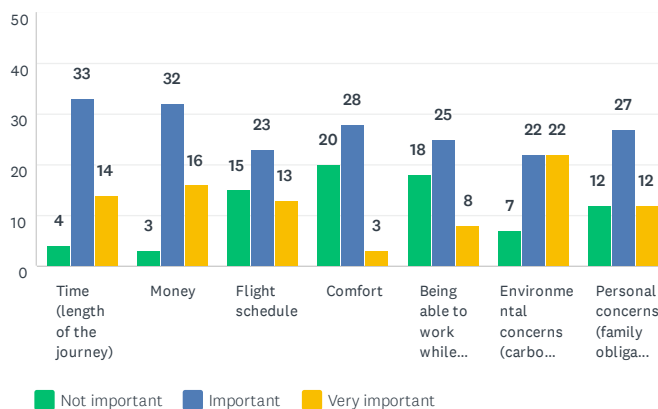
	NOT IMPORTANT	IMPORTANT	VERY IMPORTANT	INSGESAMT	GEWICHTETER MITTELWERT
Time (length of the journey)	7.84% 4	64.71% 33	27.45% 14	51	2.20
Money	5.88% 3	62.75% 32	31.37% 16	51	2.25
Flight schedule	29.41% 15	45.10% 23	25.49% 13	51	1.96
Comfort	39.22% 20	54.90% 28	5.88% 3	51	1.67
Being able to work while travelling	35.29% 18	49.02% 25	15.69% 8	51	1.80
Environmental concerns (carbon footprint etc.)	13.73% 7	43.14% 22	43.14% 22	51	2.29
Personal concerns (family obligations, health issues etc.)	23.53% 12	52.94% 27	23.53% 12	51	2.00

F25 How likely would it be for you to use the following alternatives to flying? (Please, select one answer per line)

Beantwortet: 51   Übersprungen: 18
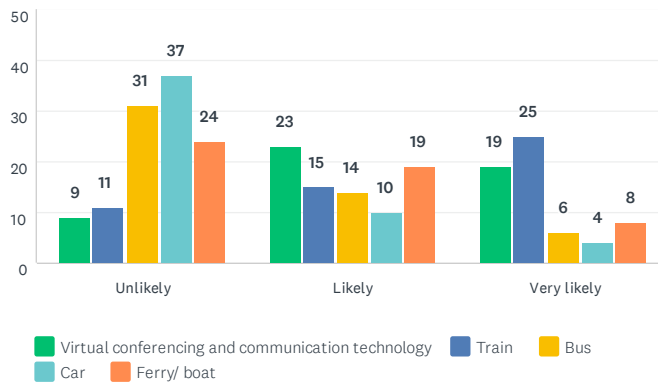
	VIRTUAL CONFERENCING AND COMMUNICATION TECHNOLOGY	TRAIN	BUS	CAR	FERRY/ BOAT	INSGESAMT	GEWICHTETER MITTELWERT
Unlikely	8.04% 9	9.82% 11	27.68% 31	33.04% 37	21.43% 24	112	1.00
Likely	28.40% 23	18.52% 15	17.28% 14	12.35% 10	23.46% 19	81	2.00
Very likely	30.65% 19	40.32% 25	9.68% 6	6.45% 4	12.90% 8	62	3.00

#	OTHER	DATE
1	Living in Israel does not really make train, bus and car (or boat) a real alternative	5/27/2020 7:04 PM
2	Israel only has flight connections to europe/usa etc. Using alternative transportation is no option.	5/21/2020 7:21 AM
3	As i live in Israel, most of conferences require flight	5/21/2020 5:01 AM
4	The only way to leave the country I am living in is by air	5/20/2020 1:48 PM
5	Bicycle	5/19/2020 6:21 PM

F26 Which form of transport do you usually use to move within a 1000Km radius of the area where you live and work?

Beantwortet: 51   Übersprungen: 18
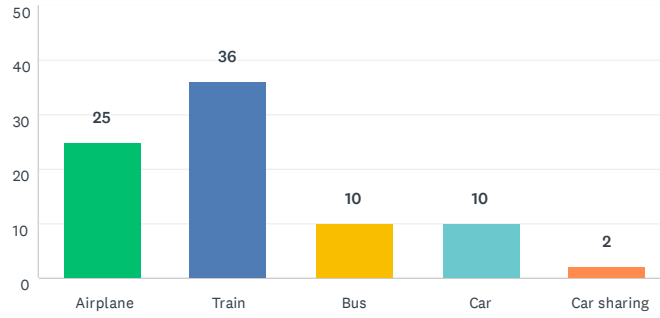
ANTWORTOPTIONEN	BEANTWORTUNGEN	
Airplane	49.02%	25
Train	70.59%	36
Bus	19.61%	10
Car	19.61%	10
Car sharing	3.92%	2
Befragte insgesamt: 51		

F27 In your opinion, what is a reasonable distance (km) within your region to travel by ground transportation (car, bus or train) instead of air travel?

Beantwortet: 51   Übersprungen: 18
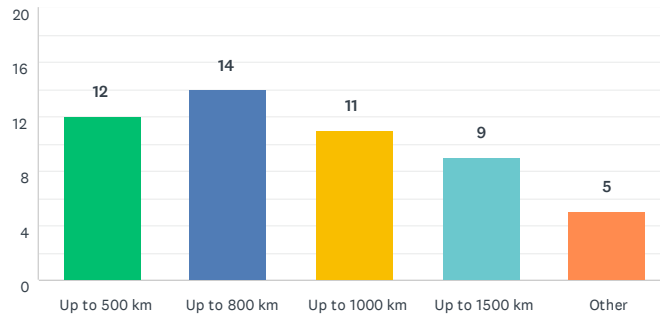
ANTWORTOPTIONEN	BEANTWORTUNGEN	
Up to 500 km	23.53%	12
Up to 800 km	27.45%	14
Up to 1000 km	21.57%	11
Up to 1500 km	17.65%	9
Other	9.80%	5
GESAMT		51

#	OTHER	DATE
1	300km	5/27/2020 10:24 PM
2	no real alternative in the Canadian context	5/27/2020 6:31 PM
3	300km	5/27/2020 6:23 PM
4	no limit as long as there is a train/bus connection	5/20/2020 3:56 PM
5	This depends on the connection	5/20/2020 10:42 AM

F28 What is the maximum amount of time (hours/hrs.) of a door-to-door journey you are willing to travel by train?

Beantwortet: 51   Übersprungen: 18
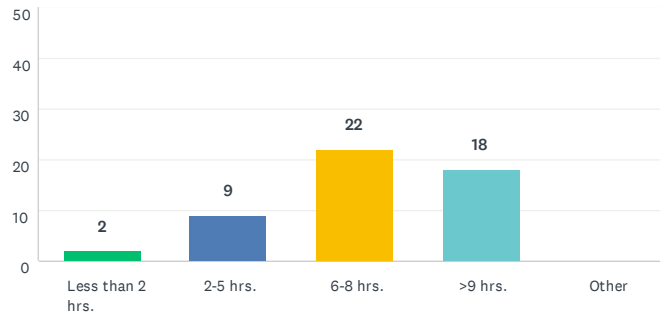
ANTWORTOPTIONEN	BEANTWORTUNGEN	
Less than 2 hrs.	3.92%	2
2-5 hrs.	17.65%	9
6-8 hrs.	43.14%	22
>9 hrs.	35.29%	18
Other	0.00%	0
GESAMT		51

#	OTHER	DATE
	There are no responses.	

F29 Which of the following reasons applies to your decision to fly? (Please, select one answer per line)
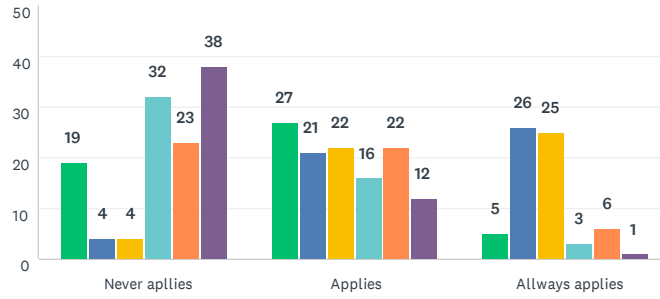
Beantwortet: 51   Übersprungen: 18

- It is expected from my university/ research project/ donor.
- I value the opportunity to visit other parts of the world and to get to know other cultur
- There is no alternative way to get to certain destinations.
- It is too much hassle to use or search for alternative modes of transport.
- It allows me to spend more time with my family/ friends.
- It allows me to take advantage of my frequent flyer programs.

	IT IS EXPECTED FROM MY UNIVERSITY/ RESEARCH PROJECT/ DONOR.	I VALUE THE OPPORTUNITY TO VISIT OTHER PARTS OF THE WORLD AND TO GET TO KNOW OTHER CULTURES AND SCIENTIFIC STRUCTURES AS PART OF MY WORK/RESEARCH/STUDIES.	THERE IS NO ALTERNATIVE WAY TO GET TO CERTAIN DESTINATIONS.	IT IS TOO MUCH HASSLE TO USE OR SEARCH FOR ALTERNATIVE MODES OF TRANSPORT.	IT ALLOWS ME TO SPEND MORE TIME WITH MY FAMILY/ FRIENDS.	IT ALLOWS ME TO TAKE ADVANTAGE OF MY FREQUENT FLYER PROGRAMS.	INSGESAMT	GEWICHTETER MITTELWERT
Never apllies	15.83% 19	3.33% 4	3.33% 4	26.67% 32	19.17% 23	31.67% 38	120	1.00
Applies	22.50% 27	17.50% 21	18.33% 22	13.33% 16	18.33% 22	10.00% 12	120	2.00
Allways applies	7.58% 5	39.39% 26	37.88% 25	4.55% 3	9.09% 6	1.52% 1	66	3.00

F30 What could be an incentive to choose alternatives rather than air travel? (Please, select one answer per line)

Beantwortet: 51   Übersprungen: 18

Unlikely   Likely   Very likely
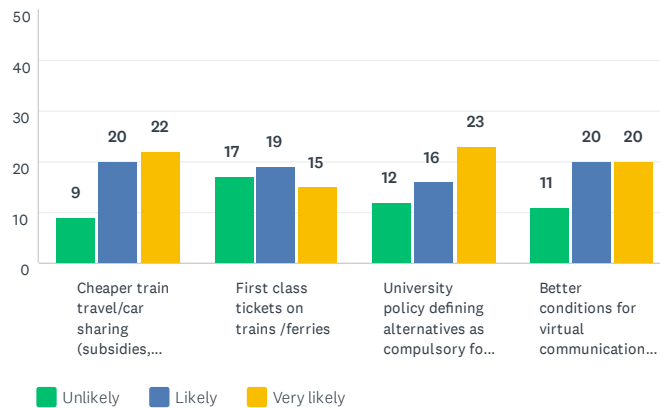
	UNLIKELY	LIKELY	VERY LIKELY	INSGESAMT	GEWICHTETER MITTELWERT
Cheaper train travel/car sharing (subsidies, preferential prices)	17.65% 9	39.22% 20	43.14% 22	51	2.25
First class tickets on trains /ferries	33.33% 17	37.25% 19	29.41% 15	51	1.96
University policy defining alternatives as compulsory for certain trips	23.53% 12	31.37% 16	45.10% 23	51	2.22
Better conditions for virtual communication/conferences	21.57% 11	39.22% 20	39.22% 20	51	2.18

#	OTHER	DATE
1	Nevertheless, you should understand that these alternatives are in fact impossible for those coming from Israel unless travelling to a conference in Jordan and Egypt which happens once in a blue moon.	5/27/2020 7:04 PM
2	sponsored "Bahncard" for employees	5/20/2020 3:56 PM
3	time saving ground transportation. FUB does not even allow to reserve a sit on a train. Sometimes you cannot work in the train because it is too crowded.	5/20/2020 12:06 PM

F31 When you fly, do you think about the impact your trip has on climate change and pollution?

Beantwortet: 51   Übersprungen: 18

No
9.80% (5)

Yes
90.20% (46)
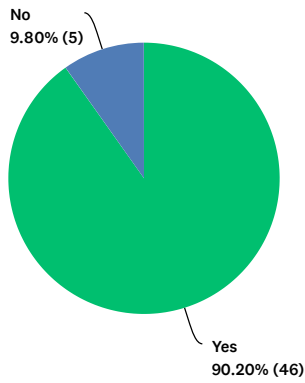
ANTWORTOPTIONEN	BEANTWORTUNGEN	
Yes	90.20%	46
No	9.80%	5
GESAMT		51

F32 When booking a flight with money that you get reimbursed, how much would you be willing to pay for carbon compensation per flight?

Beantwortet: 51   Übersprungen: 18
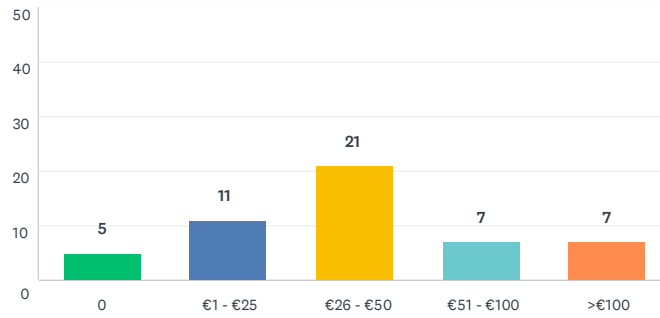
ANTWORTOPTIONEN	BEANTWORTUNGEN	
0	9.80%	5
€1 - €25	21.57%	11
€26 - €50	41.18%	21
€51 - €100	13.73%	7
>€100	13.73%	7
GESAMT		51

F33 What are barriers to purchasing carbon offsets/ carbon compensation?

Beantwortet: 51   Übersprungen: 18
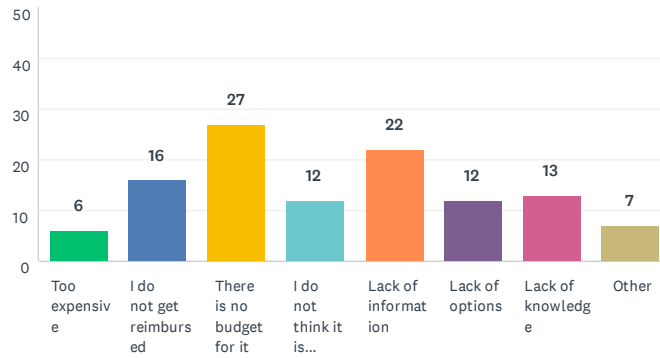
ANTWORTOPTIONEN	BEANTWORTUNGEN	
Too expensive	11.76%	6
I do not get reimbursed	31.37%	16
There is no budget for it	52.94%	27
I do not think it is effective	23.53%	12
Lack of information	43.14%	22
Lack of options	23.53%	12
Lack of knowledge	25.49%	13
Other	13.73%	7
Befragte insgesamt: 51		

#	OTHER	DATE
1	It is unclear how is the money spent	6/13/2020 11:29 AM
2	lack of knowledge what happens with this money and who profits from this; if the flight is paid for, and it is part of the work, also the compensation should be paid for	6/5/2020 10:52 AM
3	I see most of compensation projects very critical, but I would support a socially fair compensation	6/3/2020 2:33 PM
4	I am concerned about transparency. In addition, I feel that it is neoliberal cooptation of the environmental discourse by airline companies.	5/29/2020 2:10 AM
5	I pay for it, so there is no barrier for me	5/28/2020 2:08 PM
6	these options do not apply to me	5/20/2020 5:50 PM
7	it is not a current policy which is recognised by the administration	5/20/2020 12:06 PM

F34 Which virtual communication technology do you use and how often? (Please, select one answer per line)
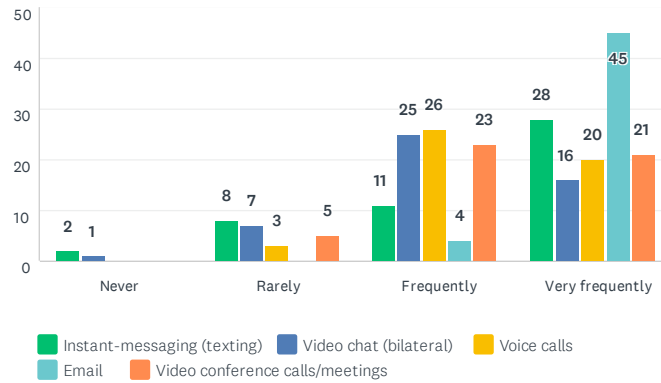
	INSTANT-MESSAGING (TEXTING)	VIDEO CHAT (BILATERAL)	VOICE CALLS	EMAIL	VIDEO CONFERENCE CALLS/MEETINGS	INSGESAMT	GEWICHTETER MITTELWERT
Never	66.67% 2	33.33% 1	0.00% 0	0.00% 0	0.00% 0	3	1.00
Rarely	34.78% 8	30.43% 7	13.04% 3	0.00% 0	21.74% 5	23	2.00
Frequently	12.36% 11	28.09% 25	29.21% 26	4.49% 4	25.84% 23	89	3.00
Very frequently	21.54% 28	12.31% 16	15.38% 20	34.62% 45	16.15% 21	130	4.00

F35 Where do you work from when you use virtual communication technology and how often? (Please, select one answer per line)

Beantwortet: 49   Übersprungen: 20
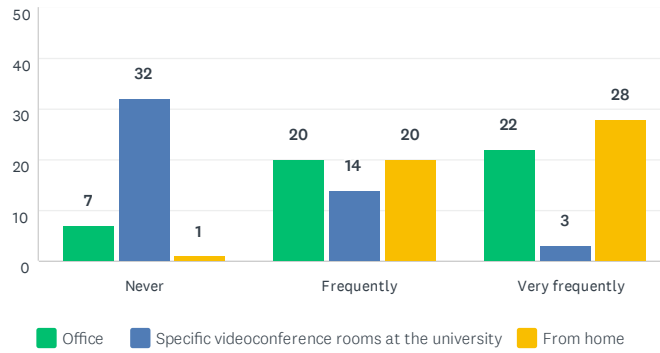
	OFFICE	SPECIFIC VIDEOCONFERENCE ROOMS AT THE UNIVERSITY	FROM HOME	INSGESAMT	GEWICHTETER MITTELWERT
Never	17.50% 7	80.00% 32	2.50% 1	40	1.00
Frequently	37.04% 20	25.93% 14	37.04% 20	54	3.00
Very frequently	41.51% 22	5.66% 3	52.83% 28	53	4.00

F36 For which activities do you use virtual communication technologies most often? (Please, select one answer per line)

Beantwortet: 49   Übersprungen: 20
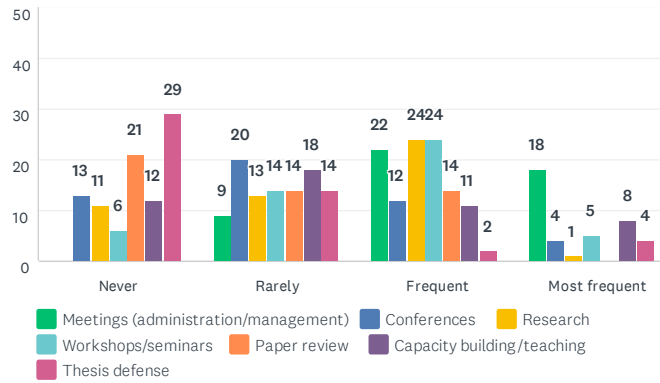
	MEETINGS (ADMINISTRATION/MANAGEMENT)	CONFERENCES	RESEARCH	WORKSHOPS/SEMINARS	PAPER REVIEW	CAPACITY BUILDING/TEACHING	THESIS DEFENS
Never	0.00% 0	14.13% 13	11.96% 11	6.52% 6	22.83% 21	13.04% 12	31.52% 2
Rarely	8.82% 9	19.61% 20	12.75% 13	13.73% 14	13.73% 14	17.65% 18	13.73% 1
Frequent	20.18% 22	11.01% 12	22.02% 24	22.02% 24	12.84% 14	10.09% 11	1.83%
Most frequent	45.00% 18	10.00% 4	2.50% 1	12.50% 5	0.00% 0	20.00% 8	10.00%

#	OTHER	DATE
1	There is a significant negative effect in terms of quality in these virtual activities	5/27/2020 7:09 PM
2	all changed due to Covid, and it may go back to 'normal'	5/27/2020 6:34 PM

F37 Do you have any experience with virtual conferences and events?

Beantwortet: 49   Übersprungen: 20
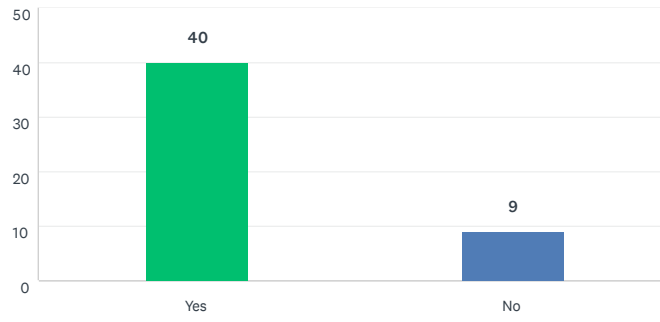
ANTWORTOPTIONEN	BEANTWORTUNGEN	
Yes	81.63%	40
No	18.37%	9
GESAMT		49

F38 How do you evaluate the videoconferencing facilities at your university?

Beantwortet: 49   Übersprungen: 20
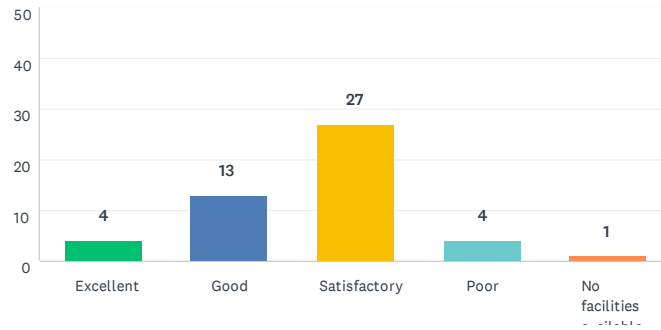
ANTWORTOPTIONEN	BEANTWORTUNGEN	
Excellent	8%	4
Good	27%	13
Satisfactory	55%	27
Poor	8%	4
No facilities available	2%	1
GESAMT		49

F39 How can your university motivate you to use the videoconferencing facilities? Improving virtual conferencing by offering:

Beantwortet: 49   Übersprungen: 20
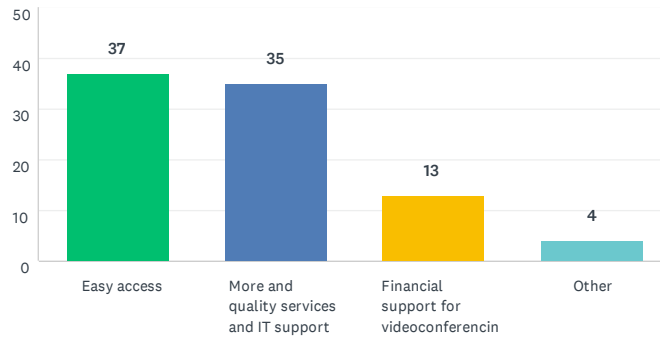
ANTWORTOPTIONEN	BEANTWORTUNGEN	
Easy access	75.51%	37
More and quality services and IT support	71.43%	35
Financial support for videoconferencing	26.53%	13
Other	8.16%	4
Befragte insgesamt: 49		

#	OTHER	DATE
1	Information	5/29/2020 2:13 AM
2	Alumnis and members of the ERG should be allowed to use the conference tools.	5/28/2020 2:39 PM
3	We have great facilities but imagine all of us woukd turn towards virtual work...	5/27/2020 6:34 PM
4	using a programme which allows to walk through the university building, entering seminar rooms and approaching to people. Creating a digital space	5/20/2020 4:02 PM

F40 Which factors discourage you from the use of videoconferencing systems for your work/ studies? (Please, select one answer per line)

Beantwortet: 49   Übersprungen: 20
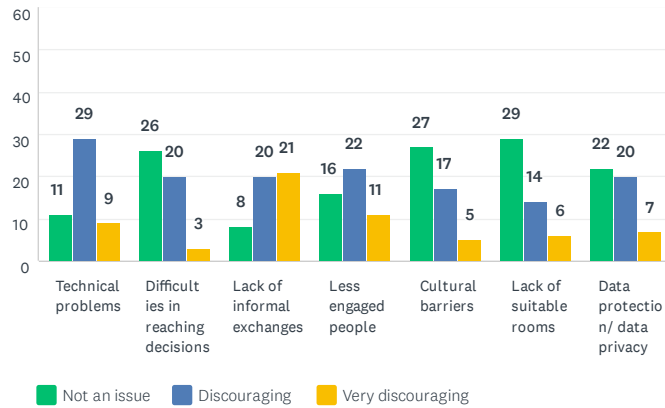
	NOT AN ISSUE	DISCOURAGING	VERY DISCOURAGING	INSGESAMT	GEWICHTETER MITTELWERT
Technical problems	22.45% 11	59.18% 29	18.37% 9	49	1.96
Difficulties in reaching decisions	53.06% 26	40.82% 20	6.12% 3	49	1.53
Lack of informal exchanges	16.33% 8	40.82% 20	42.86% 21	49	2.27
Less engaged people	32.65% 16	44.90% 22	22.45% 11	49	1.90
Cultural barriers	55.10% 27	34.69% 17	10.20% 5	49	1.55
Lack of suitable rooms	59.18% 29	28.57% 14	12.24% 6	49	1.53
Data protection/ data privacy	44.90% 22	40.82% 20	14.29% 7	49	1.69

#	OTHER	DATE
1	difficult meeting new people, as I am not used to online networking (some conferences offer this but it is more difficult for me to engage in discussions, ask the right questions at the right time, and be able to inteprete the atmosphere in the "room", more difficult to approach people you dont know	6/5/2020 11:01 AM

F41 For which activities would you be willing to substitute travelling and face-to-face meetings with a videoconferencing? (Please, select one answer per line)

Beantwortet: 49   Übersprungen: 20
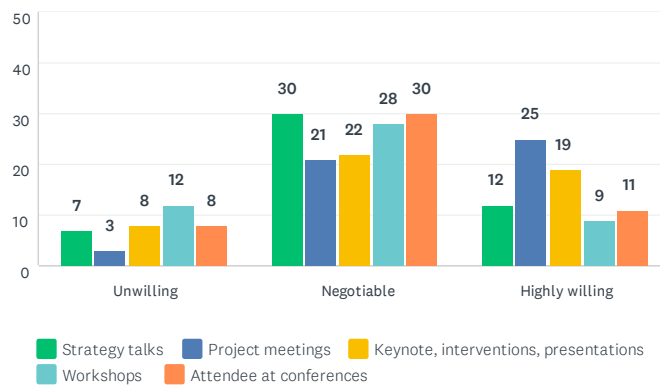
	STRATEGY TALKS	PROJECT MEETINGS	KEYNOTE, INTERVENTIONS, PRESENTATIONS	WORKSHOPS	ATTENDEE AT CONFERENCES	INSGESAMT	GEWICHTETER MITTELWERT
Unwilling	18.42% 7	7.89% 3	21.05% 8	31.58% 12	21.05% 8	38	1.00
Negotiable	22.90% 30	16.03% 21	16.79% 22	21.37% 28	22.90% 30	131	2.00
Highly willing	15.79% 12	32.89% 25	25.00% 19	11.84% 9	14.47% 11	76	3.00

#	OTHER	DATE
1	as I said, I am attending conferences now online but only because everyone is online and there is no way of attending and meeting these people in person, maybe it needs some time for people to adjust to this but technically it is definitely possible	6/5/2020 11:01 AM

F42 How important is having face-to-face meetings and direct exchanges for your work, studies, research?

Beantwortet: 49   Übersprungen: 20
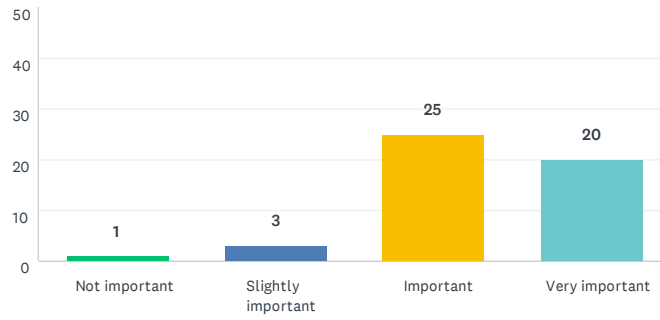
ANTWORTOPTIONEN	BEANTWORTUNGEN	
Not important	2.04%	1
Slightly important	6.12%	3
Important	51.02%	25
Very important	40.82%	20
GESAMT		49

F43 Can you briefly explain why the personal meeting is so important?

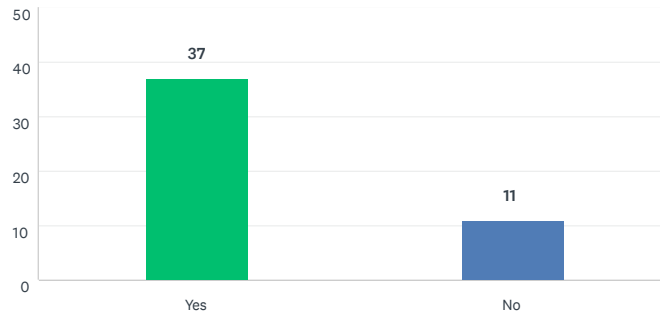| #	BEANTWORTUNGEN	DATE
1	I feel more comfortable when I have direct interaction with the People.	6/15/2020 9:57 AM
2	less missunderstandings/"reading between the lines", better bonding, more attentive	6/10/2020 10:27 AM
3	see my comment before; I still need to "get out there", meet people in my area of research and find it easier to share my research and my ideas and discuss in person with people I have never met before, I feel insecure when online as I am afraid I might misunderstand the issue or my answers will be recorded and used against me afterwards (at the same time, some conferences allow for anonymous questions, which could be a possibility to have more critical questions and addressing the "elephant in the room"), I think networking will be more effective if you have seen and met the person, but I have also started projects with people I have never met in person before so I guess its possible (but in these cases also there was always someone in the boat that I has personally met and worked with (possibly people will refer to you and recommend you only if they have had personal interaction before?)	6/5/2020 11:07 AM
4	Getting to know each other better and develop trust in the professional relationship. Communication problems can be solved much faster	6/3/2020 2:39 PM
5	Particularly starting projects needs personal contact and trust.	6/2/2020 10:22 AM
6	building trust, extended bilateral communication, in an intercultural context personal interaction helps understanding different points of views in different cultural and political contexts better.	6/2/2020 10:11 AM
7	Sociql sciences profit onlyfrom exchange and discussion. I have never experienced a lively discusiion in an online smeinar or video call or something.	5/31/2020 12:19 PM
8	The communication between people is more convenient and rich	5/31/2020 10:31 AM
9	Can communicate more fully, can deepen the feelings	5/31/2020 5:20 AM
10	It's possible to read facial reactions and react/act accordingly. Personal meetings might bring more positive outcomes.	5/28/2020 6:14 PM
11	It gives a much better sense of understanding, engagement, and trust amongst participants	5/28/2020 3:23 PM
12	Humans are social beings, we need more than just image and voice to form an optinion, sympathy etc. that might lead to more.	5/28/2020 2:40 PM
13	It is a much better way to be interpersonal and assess your Interlocutor	5/28/2020 2:15 PM
14	Clear idea about research direction and potential problems attached.	5/28/2020 12:58 PM
15	Physical contact and feedback needed to better connect and to have a more effective conversation and outcome. Also, social interactions outside work related conversations needed for better connection and enjoying collaborative work (which in turn leads to more productivity)	5/28/2020 12:27 PM
16	Informal aspects of communication play important role	5/28/2020 12:12 PM
17	get to know each other better through sufficient time for interaction	5/28/2020 11:37 AM
18	personal contact, more effective and humanlized deep understanding, reduce the misunderstanding	5/28/2020 9:53 AM
19	I like it	5/28/2020 3:44 AM
20	Personal meetings help build relationships and ensure full discussion, understanding and decision-making.	5/27/2020 10:32 PM
21	It is easier to make meaningful and lasting connections	5/27/2020 9:20 PM
22	personal meetings allow exchanges at a quality which cannot be substituted by technology-based remote meetings, which create numerous misunderstanding, lack of engagement by participants, depress creativity and more. I am a technology savvy person and use a lot of technology, yet I acknowledge its limitations.	5/27/2020 7:13 PM
23	It is all about tacit knowledge and the way one can discuss things in more informal ways	5/27/2020 6:35 PM
24	Serendipitous topics, results, etc.	5/27/2020 6:25 PM
25	Face-to-face meetings are important for evaluating partners' informal reactions to offers.	5/26/2020 2:29 PM
26	Habitual. Fun	5/21/2020 7:16 PM
27	Through video conferencing it's possible to discuss a problem, solve a problem etc. but you do not get a "feel" who the person in front of the camera is, what kind of person they are etc. In personal meetings getting an impression of a person is easy and automatic. I find that solving problems during a personal meeting is much easier and direct. In video conferencing it always remains to be seen whether people are actually on the same line, who can work together, who is better suited to do what etc. Compromising is easier in personal meetings as well. In video conferencing I feel people more often stick to 'safeguarding' their interests/wishes to the detriment of the process.	5/21/2020 7:28 AM
28	much subtle information and emotions cannot pass through a video meeting. I think these are extremely important factors in healthy and effective communication. especially, for people from different cultures, which English is not their native language.	5/21/2020 5:06 AM
29	Easier to get point across, more relationship building	5/20/2020 11:25 PM
30	More nuanced communication, easier to build a relationship.	5/20/2020 7:03 PM
31	particularly to get to know people you have not met before	5/20/2020 5:52 PM
32	It would be more efficient for communication.	5/20/2020 2:04 PM
33	A virtual meeting does not allow for the small clues in the contact which are often unnoticed but registered when there is 3D contact	5/20/2020 1:55 PM
34	because of the immediate interaction with the meeting partners. Body language and gestures are an important component of communication. By face-to-face communiation misunderstandings are less likely to occurr.	5/20/2020 12:13 PM

35	personal meetings build a different bond and commitment	5/20/2020 11:39 AM
36	Build up sustainable networks, better discussions, opportunities for informal exchanges, getting more valuable information	5/20/2020 10:05 AM
37	There are aspects of communication and knowledge that are only communicated in person. Getting to know colleagues and the cultures and places where we are situated gives context that is incredibly important. That said, once we know each other in person, we can meet between times online, and bring our contextual knowledge to virtual meetings. Some combination of in-person and virtual meetings could reduce the need for air travel.	5/19/2020 6:27 PM

## F44 Has your attitude toward considering video-conferencing technology changed after the rise of COVID-19?

Beantwortet: 48   Übersprungen: 21

ANTWORTOPTIONEN	BEANTWORTUNGEN	
Yes	77.08%	37
No	22.92%	11
GESAMT		48

F45 During the rise of COVID-19, my use of videoconferencing technology for studying and/or business related activities has
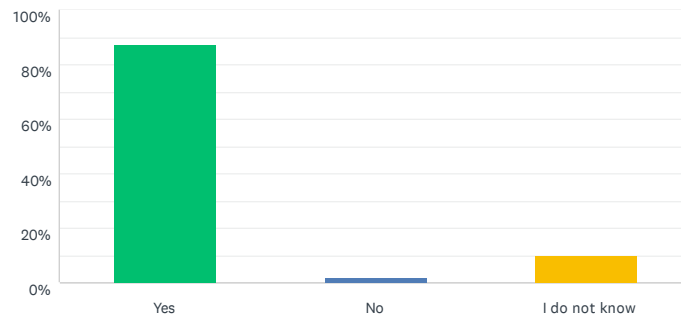
Beantwortet: 48   Übersprungen: 21
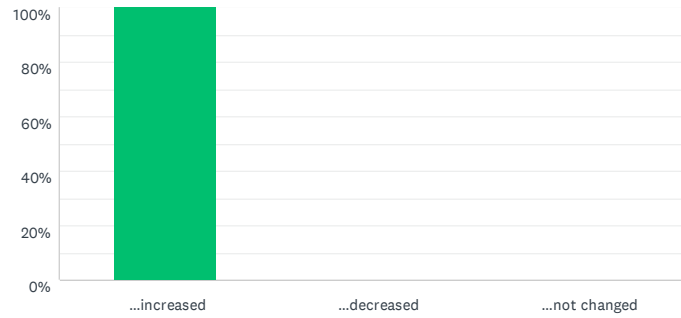
ANTWORTOPTIONEN	BEANTWORTUNGEN	
…increased	100.00%	48
…decreased	0.00%	0
…not changed	0.00%	0
GESAMT		48

F46 Do you think that the current rise of COVID-19 might have impact on your study or business travel patterns, habits and decisions in the next 2-3 years?
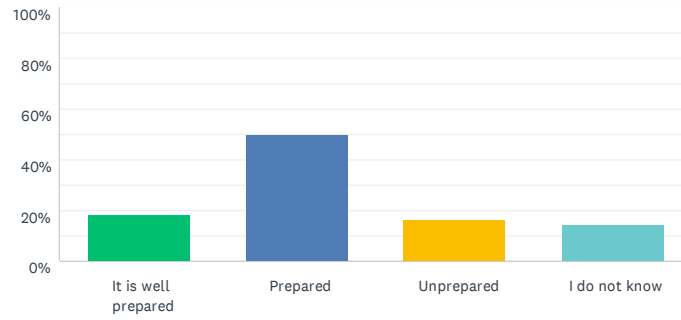
Beantwortet: 48   Übersprungen: 21

ANTWORTOPTIONEN	BEANTWORTUNGEN	
Yes	87.50%	42
No	2.08%	1
I do not know	10.42%	5
GESAMT		48

F47 If yes, do you think your university is prepared to face these new challenges in terms of video communication facilities and logistics?

Beantwortet: 48   Übersprungen: 21

ANTWORTOPTIONEN	BEANTWORTUNGEN	
It is well prepared	18.75%	9
Prepared	50.00%	24
Unprepared	16.67%	8
I do not know	14.58%	7
GESAMT		48

Program Management
Freie Universität Berlin
Sustainability and
Energy Management Unit

Andreas Wanke, Head
andreas.wanke@fu-berlin.de
Katrin Schweigel, Program
Manager katrin.schweigel@fu-
berlin.de
Schwendenerstraße 17
14197 Berlin, Germany
T + 49 (0) 30 838 510 44
www.fu-berlin.de/uas