

UBC Social Ecological Economic Development Studies (SEEDS) Sustainability Program

Student Research Report

Decarbonizing Transportation: Reducing Air Travel Emissions for UBC Faculty and Staff

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Course: GPP 581

Themes: Climate, Transportation, Community

Date: April 10, 2020

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Submission Date

April 10, 2020

Decarbonizing Transportation: Reducing Air Travel Emissions for UBC Faculty and Staff

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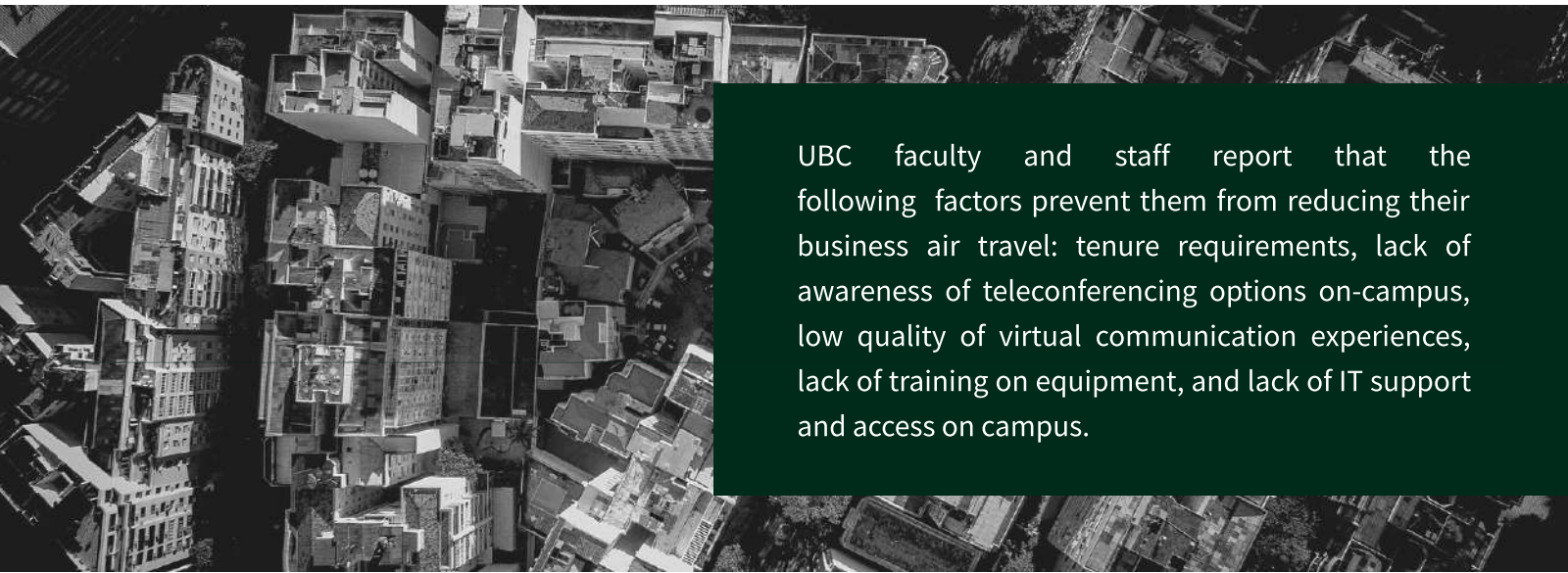
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UBC faculty and staff report that the following factors prevent them from reducing their business air travel: tenure requirements, lack of awareness of teleconferencing options on-campus, low quality of virtual communication experiences, lack of training on equipment, and lack of IT support and access on campus.

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Background

In a study conducted by the University of Montreal, it was determined that 67% of the trips made by faculty members were to attend conferences while 18% were for conducting research, and the rest were for other meetings (Wynes & Donner, 2018). While to offset its air travel, UCLA developed a program that requires travellers to balance their emission footprint by paying a fee and then by investing the funds collected from both domestic (\$9) and international (\$25) flights into green projects. These funds are then awarded annually to local on-campus projects in order to mitigate air travel emissions (UCLA, 2020). This policy was deemed problematic as it inherently assumes that faculty want to reduce carbon emissions but are unable or unwilling to do so through reducing their actual air travel and that all would be well aware of the offsets they are expected to make due to travel. It is also not the most effective policy if the aim is to eventually reduce air travel, as it just offsets the emissions rather than tackling the cause of emissions in the first place. However, no data on the effectiveness of the policy was available to measure its success.

Ghent University in Belgium created a “sustainable travel policy” by classifying cities as “green cities” and “orange cities” (Ugent, 2019). Green cities are those that take less than 6 hours to reach by bus or if the travel time by train is less than that it would take for a flight. Orange cities, on the other hand, are cities that take less than 8 hours to reach by train. University booking systems are programmed to only show train or bus options. If faculty/staff still opt for a plane, then the university requires CO₂-compensation for trips taken. The university collaborates with CO₂logic and gets to decide which projects will receive their financial support. For any flights not booked through the university system, there is a fixed CO₂ compensation of 50 euro charged. In this case, the policy is very effective due to the geographical location of the university and how close it is to other countries in Europe, which makes it possible to reach multiple countries/locations using buses or trains. However, this policy can be problematic because it makes the following assumptions: everyone is willing to spend 6-8 hours on a train, and everyone is physically capable of travelling via a train. But this policy is restricted to Europe and cannot be applied in Canada or many North American regions for scale due to its geographical location and the distances that exist from city to city.

The Tyndall Centre for Climate Change Research has developed specific policies, which promote conferencing and the use of alternative modes of transportation when necessary (Tyndall, 2020). They achieve this through a three-stage/step process, wherein the first is a decision making stage that uses a decision-tree to provide alternatives to air travel. The second is a monitoring stage which encompasses a scoring tool that asks staff to conduct a monthly survey that records travel and asks for travel information and justification for the trip. Last, is a commitment stage where the staff is signed up to a minimum commitment of reduction (they can opt-out or commit to something bigger). The assumption, in this case, is that due to the type of the institution and its focus on climate research means that their employees are more likely to be engaged in such policies while the same can't be said for other institutions, which wouldn't necessarily have the same commitment or level of knowledge from faculty to reduce emissions. Thus, due to the type of institution this is, this policy can prove to be very effective; however, no data on the actual offsets created by the policy is available to measure its relative success.

Target Behaviour:

Reduce the air travel of faculty through behavioural interventions and possible policy change.



Behavioural Interventions (1)

Pre-Booking Form

Air travel to business conferences, symposia and workshops should be treated as a last resort, and this is a shift that will require behavioural changes from faculty and staff. It's recommended that an online quiz be integrated at the point of booking travel in the UBC Concur and/or Direct Travel booking systems. The quiz will ask faculty/staff to answer questions about the purpose of their travel in order to demonstrate that they have considered other options (i.e., public transportation, video conferencing), and to justify why air travel is an absolute necessity (see Appendix A). This recommendation utilizes transparency and salience to nudge faculty and staff into considering alternative options to air travel at the point of booking. By making alternatives more obvious, transparent and available, the form invites people to pause and genuinely consider them, making air travel a last resort that gets selected only once other options have been exhausted because they're not viable.

A randomized control trial (RCT) will test the effectiveness of the intervention over the course of one academic year. The RCT will involve the quiz being implemented on a controlled group of Concur and Direct Travel accounts only. These accounts will be selected using a systematic random sampling method that includes all UBC faculty and departments. Comparing the travel decisions of this group to those who do not use the quiz will identify whether the behavioural nudge results in more people selecting alternatives to air travel. **A sample of this form is available in the appendix, page 9.**



Behavioural Interventions (2)

Creating a GHG Emissions Warning in the Grants & Financial Services Website Pop-up

While professors can keep track of their travel expenses in the Financial Services website, their GHG emissions contributions are not tracked and often remain unnoticeable, as are most environmental problems. Including a pop-up window or a banner on top of the Financial Services website that clearly outlines their updated GHG emissions as another expense would make information salient. This tool would allow faculty to visualize their environmental impact per grant and keep track of it every time they visit the financial services website.

The implementation of this intervention would require support from the UBC Financial Services Department to allow the inclusion of the banner or pop-up window on their website. Similarly to the previous intervention, an RTC would be conducted to assess intervention over a year per grant. In this case, the control group and experimental group would be assessed based on the emissions associated with the grants. The expected outcome would be to find that those under the experiment would have lower GHG emissions. **A sample of what this would look like is available in the appendix, page 11.**



Policy Change

UBC Tenure Contracts

As per the UBC policy “The Professoriate Stream: Criteria for Tenure and Promotion” and “Part 4: Conditions of Appointment for Faculty July 1, 2016 – June 30, 2019”, in order to secure tenure, teaching faculty are to fulfil the criteria of ‘Scholarly Activity’ and ‘Educational Leadership,’ which expects faculty members to participate or organize “conferences, programs, symposia, workshops and other educational events on teaching and learning locally, nationally and internationally.” This places pressure on junior faculty members in their positions as Acting Assistant Professors and Assistant Professors, to travel more to gain peer reviews and references; organizing and attending academic conferences and symposiums to help build themselves a network within their area of expertise. This policy is currently held by the UBC Human Resources and the Office of Provost - Vice President Academic.

Instead of promoting attendance of conferences, the university should amend, Part 4: Conditions of Appointment for Faculty, and give the option of video-conferencing and other digital alternates to the faculty within the current policy. This would help faculty members know that the university supports travel alternates, which would encourage them to plan events and secure funding through utilizing technology and other resources. The university should replace the wording of ‘Conference Participation (Organizer, Keynote Speaker, etc.)’ from its Scholarly and Professional Activities marking criteria and instead use “Conference Participation (Organizer, Keynote Speaker, etc.) through video-conferencing technology,” to promote an alternate route of action.

Analysis and Potential Outcomes

The following metrics will be used to measure the effectiveness of the quiz: 1) the total business airfare (\$) spent by faculty/staff and 2) the number of airplane trips booked on Concur and/or Direct Travel (found within Air Travel Database). The intervention will be considered a success if fewer airplane trips are taken by faculty/staff, thereby decreasing total campus GHG emissions that result from business air travel. The expected outcome is that post-intervention, fewer faculty/staff members will be travelling by air to business events and instead, there will be an increase in the use of alternatives such as public ground transportation and/or on-campus video conferencing options. Currently, faculty/staff often book travel on independent websites instead of Concur or Direct Travel, so ensuring that all business travel is booked through these UBC databases is one anticipated challenge of implementing this recommendation and tracking its success.

For the inclusion of the GHG emissions tracker per grant in the Financial Services website, the metrics to evaluate the success of the intervention would consist of evaluating the counterfactual between the expenses on flights per grant before and after the intervention. Additionally, we would also evaluate the counterfactual between professors that participated in the program and those who did not. The intervention would be considered a success if there is a decrease in the air travel expenses resulting in a decrease of total campus GHG emissions that can be attributed to the participation of the program. Considering the changes in travel habits with COVID-19, it may be challenging to isolate the impact of the behavioural intervention.

For the tenure policy change recommendation, we suggest evaluating the flight expenditures per junior faculty member before and after the policy change is implemented. This can further be compared against any observable changes in the behaviour of faculty members who hold tenure positions in comparison to others. This policy change will constitute success if the air travel expense reported by the junior faculty members, who await tenure positions, is less than the amount they were reporting before the policy was implemented. However, as mentioned earlier, considering the current COVID-19 situation, the impact of the policy change would be difficult to evaluate and ascertain in complete isolation.



Implications and Scaling

These interventions would rely solely on the receptivity of academics, faculty, and researchers to these nudges. Once having conducted both trials on a sample-sized control group, it can be derived whether there was a perceivable change in behaviour due to the nudge, or if both behavioural interventions had no significance on participants' choice. If deemed successful, implementation of these behavioural interventions would mean future policy amendments are to be considered and/or implemented. Therefore, faculties would need to provide policies that allow professors or staff to exercise the checklist and/ or financial services pop-up on GHG emissions before agreeing to participate in a conference. The intervention could initiate from professors and staff and then expand to student researchers who participate in conferences abroad. It can also start from certain departments and scale-up to become a university-wide policy that would be exercised by university provosts, students, clubs, and professionals. Due to the intervention being online it would be easy to administer and scale-up. When it comes to accessibility, faculty members, researchers, and staff can access these interventions whether abroad or on campus.

Some challenges that are anticipated in adopting these behavioural interventions are the lack of video conferencing systems, the difficulty of paying carbon offsets, privacy issues, and competitiveness. If UBC were to adopt this intervention to reduce carbon emissions would it affect its competitiveness in tenure-ship. This can be foreseen as a potential problem that needs further research and analysis.

Pre-Booking Form(1)



THE UNIVERSITY
OF BRITISH COLUMBIA

Pre-Booking Form

Faculty/Staff Name

Department

Purpose of Travel

Destination of Travel Requested

This quiz is intended to be a fillable form. Depending on the value input in the "Destination of travel requested" tab, different alternatives will be presented based on the calculated distance of the destination from Vancouver, BC. For example, if the destination is identified as being ≤ 500 km from Vancouver, the following message will appear:

Your destination is less than 500 km away from Vancouver! In efforts to reduce campus GHG emissions caused by business air travel, the University of British Columbia encourages its faculty and staff to consider alternatives to air travel when attending business events such as conferences and workshops.

Please select whether the following options are viable alternatives to air travel for your requested trip. If you select 'No', please explain why in the below fillable form:

Pre-Booking Form (2)

Alternative	Viable? (Y/N)	If no, please explain why:
On-campus video conferencing		
Off-campus video conferencing		
Car rental		
Public transportation (train, bus, etc.)		
Carpool with other attendees		

After considering the above alternatives to air travel, please provide justification as to why air travel might still be a necessity in your case:

Please Select One:

I will use an alternative to air travel and will not be booking flights

Selecting this option will bring users to UBC's videoconferencing resources page

I want to explore my options before booking flights at this time

Selecting this option will allow users to save their changes and exit

I still want to proceed with booking flights at this time

Selecting this option will bring users to the next step in the booking process

Grants & Financial Services Website Pop-up

The screenshot displays the Financial Services website interface. At the top, the logo for 'Financial Services' is visible, along with a 'Return to FMS Main Menu' link. Below the logo is a navigation bar with several menu items: 'GENERAL LEDGER', 'Summary PFI Statement', 'Project/Budget Budget Report', 'Ledger Summary', 'Journal Inquiry', 'Budget Journal Transactions', 'GL Journal Transactions', and 'Budget Summary'. The main content area is titled 'Statement of Funding & Expenses For the Current Period As of March 31, 2020'. It includes a 'PROJECT ID' field and a 'Current Month' dropdown menu. A table on the left lists 'Funding' and 'Expenses' with their respective amounts. A red warning pop-up is overlaid on the right side of the page, containing the following text:

WARNING!
Based on the flights you've taken in the last 24 months, your total GHG emissions are now XXX.
Your footprint is now 150% higher than the rest of the departments average.

Below the table, there is a link: 'To view this PFI's Ledger Summary for this current month click here'. At the bottom, a footnote states: '*) Current balance represents the unspent amount as of the month selected. The balance is calculated by taking expenses off of the total funding available.'

References

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