University of British Columbia

Social Ecological Economic Development Studies (SEEDS) Sustainability Program

Student Research Report

Sustainability During the Pandemic: Expectations of the Self and Others

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Themes: Environment, Sustainability, Pandemic

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Executive Summary

Past studies have examined the crucial role that self-serving bias plays during the COVID-19 pandemic – highlighting the issues of environmental insecurity and sustainable habits. During the pandemic, people were advised to alter their behaviors in order to reduce the transmission rates of the virus. We are interested to examine the extent to which our individual expectations differed from the expectations we have for others' sustainable behaviours during the COVID-19 pandemic. We conducted a between subjects design at The University of British Columbia (UBC), and asked 128 UBC students to fill out a self-report survey, where we obtained 119 valid responses. Participants were randomly assigned to four conditions. The first and second conditions asked participants to use a 7-point Likert scale to rate their acceptability of specific unsustainable behaviors during COVID-19 and no-COVID-19 respectively. The third and fourth conditions were designed very similarly with the only change being that the discussed behaviour was presented in third person. Upon using a two-way ANOVA test, we found that participants had a significant self-serving bias with flying home for holidays during the pandemic. Surprisingly, people also rated private driving as significantly more acceptable from a third person perspective.

Introduction

The year 2020 has unfolded unprecedentedly with regards to strict measures taken against the spread of a global pandemic (Dong et al., 2020). In addition to the disturbing global infection rate, the COVID-19 pandemic has not only completely transformed the way individuals work, learn, and socialise, but has also altered the way we perceive ourselves and others. While there is an on-going global effort to reduce the spread of the virus, individuals have different expectations regarding the same behaviors for themselves and for others. This phenomenon of self-serving bias occurs when people judge similar wrongdoings as more acceptable when they benefit from these wrongdoings (Bocian & Wojciszke, 2014) and evaluate themselves more leniently than others (Valdesolo & DeSteno, 2008).

Considering how COVID-19 has drastically affected the world, on-going research has shown that the self-serving bias has contributed to the rapid rates of global transmission (Bavel et al., 2020). Since the start of the COVID-19 pandemic, several social scientists have tried to find ways to reduce self-serving bias in order to better control the outbreak. through the improvement, recommendation and promotion of public awareness and preventative measures (Bavel et al., 2020). However, it is uncertain why individuals who are aware of the COVID-19 preventative measures still choose to act against them when their self-interest intersects.

In a separate study, researchers examined the self-serving bias in a medical setting while COVID-19 was taking place. The study suggested that self-serving bias influenced the prioritisation of groups in vaccine administering (Huang et al., 2020). Moreover, researchers found that applying the veil-of-ignorance reasoning to medical workers reduces the influence of self-serving bias in medical resource allocation decision making. Staff were more likely to adhere to the utilitarian policy that maximises the number of life-years saved on patients (Huang et al., 2020).

Much of the past and present research conducted on self-serving bias during COVID-19 is focused on the double standards people have among medical industries, in which much of the studies

emphasize on the medical application. Thus, lack of investigations regarding the environmental sustainability behaviour impacted by self-serving biases phenomenon under the scope of global pandemic, our research will enhance the double standard effect and further investigate sustainable lifestyles.

The specific condition the hospital's doctors and nurses are placed into has left room for further research. First, the patients health conditions, the hospital's admission protocol (eg. ICU, surge protocol, standard trige) and the extent to which they judge their wrongdoings as a result of patients' health condition were not investigated on a condition-by-condition basis (Bocian & Wojciszke, 2014)

Furthermore, while the doctors and nurses have demonstrated a level of change in self-serving bias based on their decision making, it remains unclear whether the non-medical hospital staff will have similar change in their self-serving bias both in and out of the hospital (Huang et al., 2020). There is evidence that the level of self-serving bias for specific groups of individuals can deviate as a result of the pandemic, however, this evidence cannot be generalised to the general population.

Therefore, the current study aims to explore ways in which people may deem certain unsustainable behaviours as more acceptable. This study will investigate the extent to which our individual expectations differ from the expectations we have for others' sustainable behaviours during the pandemic. We hypothesize that people will accept their own unsustainable actions more than others, to which this phenomenon of self-serving bias will be even more apparent under the influence of COVID-19.

Method

Participants

The study consisted of UBC students who completed the survey using mobile QR codes and survey links which were distributed both online and in person on the UBC Vancouver campus. In order to achieve an effect power of 0.8, we required a minimum sample of 128 participants. While we obtained 128 responses, only 119 of them were valid responses. The participants consisted of 48 identified males, 69 females, where less than 1% belonged to the LGBTQ group. The ethnicity distribution of the participants were 47% East Asian, 15.12% South East Asian, 12.6% Caucasian, 7.5% South Asian, 1.68% Native American, and 0.84% African American and Caribbean.

Conditions

The study utilised a between subjects design, whereby participants were randomly assigned to complete 1 of 4 survey conditions. These 4 conditions served as the independent variable to assess the acceptability of unsustainable actions. These unsustainable actions served as the dependent variable and were operationally defined *as any behaviour that if continuously performed will negatively impact the environment.* The measure of the dependent variable was defined as the participants' responses with regards to the level of acceptability of each respective unsustainable action.

All conditions had 6 survey items, with an unsustainable action presented for each item. Condition 1 and 2 aimed to assess the acceptability of unsustainable actions in first person. Whereby items

were phrased in the following way "You decide not to bring your own grocery bag to buy groceries". Conditions 1 and 2 differed as condition 1 emphasised the presence of the COVID-19 pandemic, whereas participants in condition 2 were informed that the COVID-19 pandemic is "no longer present". The following two conditions, condition 3 and 4, were identical to condition 1 and 2, except that the survey items were phrased in third person. For example, "Jake decided not to bring his own grocery bag to buy groceries" (see Appendix for detailed survey items).

Measures

As it relates to our hypothesis that people will accept their own unsustainable actions more than others in the presence of COVID-19, the dependent variables were quantified as the participants' rating of acceptability of the survey items for each respective condition. The survey for this study was adapted from the New Ecological Paradigm Scale (NEP) (Anderson, 2012). Because the NEP is widely used to assess the endorsement of a pro ecological world view, our study's items were framed differently. The survey questions were specifically adapted to address commonly performed unsustainable behaviours. More precisely, these commonly performed unsustainable behaviours were paired with additional independent conditions of framing either in the presence of COVID 19 or not and either in third person or first person.

Procedure

The online survey was conducted between February 1st and March 31 2021. Using University of British Columbia (UBC)'s Survey Qualtrics XM in English. The Qualtrics XM is an online survey tool with state-of-the-art computer-assisted data collecting and analyzing systems. The questions can be accessed both through their individual electrical devices such as phones or tablets, and appear on the screen which can be read and answered by participants. In our study, there are 4 conditions, which is programmed to randomly assign participants into those conditions. Invalid responses were manually identified by researchers, thereby limited data accuracy. We went on-campus to distribute the survey using QR codes which allowed participants to scan and complete the survey on their own devices due to the concern of social distancing and sanitized tablets. Participants were randomly asked to do the survey and were first required to confirm that they were a UBC student. After completing the survey, participants had a debriefing session. The questionnaire also contained screening questions for age, gender and ethnicity and was approved by the principal investigator. The instrument collected 3 demographics variables and questions regarding the acceptability of certain behaviors related to sustainability.

Results

With four different conditions in a between-subjects design, we conducted a two-way ANOVA test using JASP to determine the effect for each of our six measures. The explanatory variables for the test include the presence of COVID-19, and the perspective displayed for the participants — "You" or "Other (Jake)". With these explanatory variables, the measures of using plastic cutleries upon takeout ($F(1,112) = 0.115$, $p = 0.290$, partial $\eta^2 = 0.001$) , one's choice of meat consumption ($F(1,112) = 1.115$, $p = 0.735$, partial $\eta^2 = 0.010$), the choice to not bring one's grocery bag when shopping ($F(1,112) =$, $p = 0.622$, partial $\eta^2 = 0.002$), and the choice to use paper towels over the hand dryer ($F(1,112) = 1.131$, $p = 0.290$, partial $\eta^2 = 0.010$), all showed results that are not statistically significant with p values greater than 0.05. These suggest that there are no

interaction effects between the presence of COVID-19 and one's self-serving bias. Further display of these statistical findings can be found in Appendix A.

Contrastingly, the two-way ANOVA test revealed a significant effect for the results obtained from the flying condition ($F(1,112) = 9.456$, $p = 0.003$, partial $\eta^2 = 0.078$), with a p value of less than 0.05. There is an overall decrease with the acceptability rating for the act of flying in the COVID-19 condition, as compared with the no COVID-19 condition – suggesting that people view flying to another location for holidays as less acceptable during the pandemic.

Figure 1 (see Appendix A) shows the mean acceptability ratings for the participants across the 4 conditions in terms of the flying measure. "No COVID-19" + "Jake" condition ($M = 6.217$, $SD = 1.204$; 23), "No COVID-19" + "Yourself" condition ($M = 5.484$, $SD = 1.895$; 31), "COVID-19" + "Jake" condition ($M = 3.710$, $SD = 2.163$; 31), and "COVID-19" + "Yourself" condition ($M = 5.032$, $SD = 1.602$; 31). It was only in the condition where COVID-19 is present, that participants in the "You" statements condition rated the act of flying for holidays as more acceptable than participants in the "Jake" statements condition. Results only supported our hypothesis for the condition where COVID-19 was present, indicating a significant effect of self-serving bias. People are more likely to accept their own decisions to fly for holidays – all while being less likely to accept other people's decision to fly for holidays.

The two-way ANOVA test revealed no significant interaction effects for the results obtained from the driving condition ($F(1,112) = 6.089e - 4$, $p = 0.980$, partial $\eta^2 = 5.436e - 6$), with a p value of over 0.05. However, the main effects of "COVID-19" ($p = 0.005$) and "you or other" ($p = 0.024$) were significant. Figure 2 (see Appendix A) shows the mean acceptability ratings for the participants across the 4 conditions for the driving measure. "No COVID-19" + "Jake" condition ($M = 5.435$, $SD = 1.674$; 23), "No COVID-19" + "Yourself" condition ($M = 4.710$, $SD = 1.936$; 31), "COVID-19" + "Jake" ($M = 6.323$, $SD = 1.469$; 31), "COVID-19" + "Yourself" ($M = 5.613$, $SD = 1.564$; 31). The results from this measure did not support our hypothesis, where there is no self-serving bias observed. In fact, the results showed an opposite effect to our hypothesis. Participants rated Jake's preference to drive his own car instead of riding with his friends to the park as significantly more acceptable, than if the participants themselves were to drive their own car instead or riding with their friends to the park. This effect was also consistent regardless of whether the pandemic was existing or not.

Discussion

This study examined how self-serving bias in the context of unsustainable behaviors is related to the current COVID-19 pandemic. Of all the six measures, only the flying and driving measures reported statistically significant results. Surprisingly, the results for our driving measure suggests no self-serving bias, and people even rated Jake's actions as more acceptable. The results seemingly suggest that people are more self-critical when it comes to private driving behaviors. However, we believe that this could be due to the fact that the act of driving has been normalized and many people are driving private vehicles now. As a result, people may deem the act of driving a private car as more sustainable than it really is. This highlights a larger issue where people may find certain unsustainable behaviors as more acceptable due to the fact that it has been normalized in society. Further research may investigate the normalization of driving private vehicles,

exploring the effects that social norms have on one's perception of unsustainable behaviours. Our results also suggest the existence of self-serving bias during the pandemic, where people are more likely to see their own decision to fly for holidays as more acceptable than other people's decision to fly for holidays. This double standard of self-serving bias that people have with flying during the pandemic is definitely concerning. Studies have emphasized the major risks of flying, as it serves as a catalyst for the rise in infection rates due to the enclosed environments of airport facilities with limited social distancing on planes (Pombal et al., 2020).

One of the biggest limitations in our study was the disproportional representation of our participant ethnicities, where 72% of our participants were from Asian ethnic groups. Due to cultural biases in our sample, our results do not serve as an accurate representation of all ethnicities among the UBC student population. In order to increase the generalizability and reliability of our results for UBC students, a replication of our study using a more diverse ethnicity sample with an overall larger sample size is required. Moreover, international students may potentially perceive flying as a form of essential travel to resolve time zone differences, and thus perceive the notion of flying during the pandemic as more justifiable. Hence, future studies should examine whether there are notable differences in self-serving bias between international and domestic students.

Recommendation

Our study suggests that there is a significant effect of self-serving bias for air travel behaviors during the pandemic. We believe that there are several areas where UBC may focus on reducing students' essential travelling behaviors during the pandemic. UBC may start by creating more summer jobs and internship opportunities so as to incentivise students to stay in Canada. The existence of such working opportunities provides international students with more reason to remain in Vancouver in between semesters. Furthermore, UBC can detract from international flying by providing more online extracurricular activities such as social group meetings or movie nights. By doing so, it makes distant education more attractive as it provides an opportunity for social interactions for students who are studying abroad – minimizing the need to fly back to Canada due to the lack of interactive opportunities. The university may consider presenting different time zone options, in which students may attend live lectures and exams with professors and other peers who also share the same time zone that best fits their location. These suggestions aim to better fit and help to support students studying overseas to achieve a higher quality learning experience, all while reducing the need for essential travel due to time-zone differences.

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Appendix A

Figure 1

The participants' mean acceptability ratings for the flying measure across the 4 conditions.

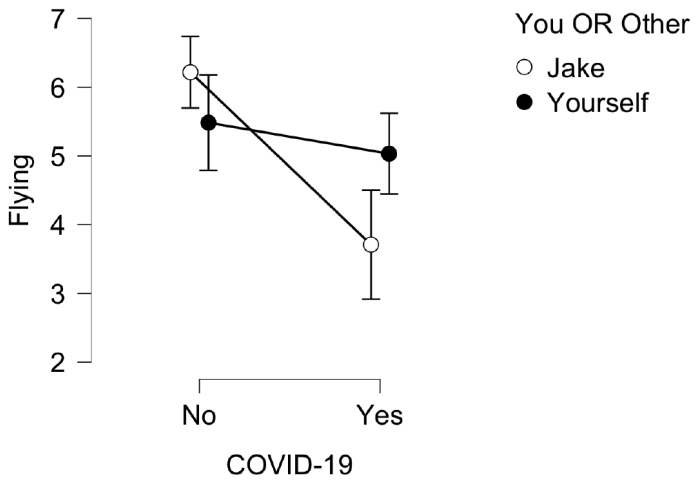

Figure 2

The participants' mean acceptability ratings for the driving measure across the 4 conditions.

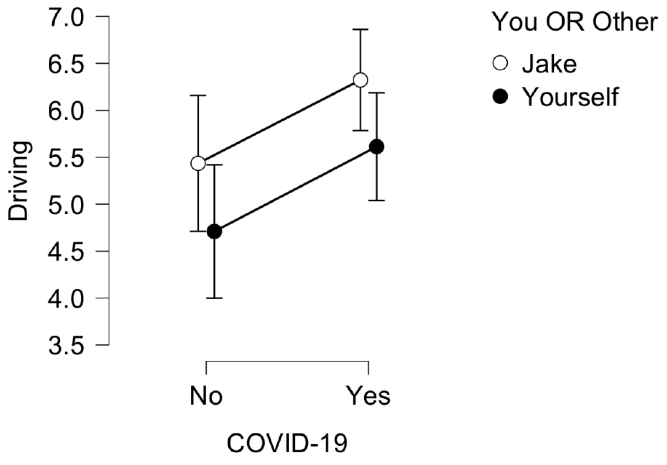

Table 1

Two-way ANOVA analysis for the measure of one's choice to use plastic cutlery.

ANOVA - Plastic Cutlery

Cases	Sum of Squares	df	Mean Square	F	p	η_p^2
COVID-19	0.111	1	0.111	0.028	0.868	2.480e −4
You OR Other	2.369	1	2.369	0.593	0.443	0.005
COVID-19 ✻ You OR Other	0.459	1	0.459	0.115	0.735	0.001
Residuals	447.801	112	3.998			

Note. Type III Sum of Squares

Table 2

Two-way ANOVA analysis for the measure of not bringing one's own grocery bag to buy groceries.

ANOVA - No Grocery Bag

Cases	Sum of Squares	df	Mean Square	F	p	η_p^2
COVID-19	0.005	1	0.005	0.001	0.973	1.061e −5
You OR Other	7.230	1	7.230	1.892	0.172	0.017
COVID-19 ✻ You OR Other	0.934	1	0.934	0.244	0.622	0.002
Residuals	428.121	112	3.823			

Note. Type III Sum of Squares

Table 3

Two-way ANOVA analysis for the measure of one's choice of using paper towels.

ANOVA - Use of Paper Towels

Cases	Sum of Squares	df	Mean Square	F	p	η_p^2
COVID-19	0.006	1	0.006	0.002	0.962	2.086e −5
You OR Other	0.195	1	0.195	0.081	0.776	7.256e −4
COVID-19 ✻ You OR Other	2.715	1	2.715	1.131	0.290	0.010
Residuals	268.962	112	2.401			

Note. Type III Sum of Squares

Table 4

Two-way ANOVA analysis for the measure of one's daily meat consumption.

ANOVA - Meat Consumption

Cases	Sum of Squares	df	Mean Square	F	p	η_p^2
COVID-19	0.050	1	0.050	0.015	0.903	1.326e −4
You OR Other	0.085	1	0.085	0.025	0.874	2.240e −4
COVID-19 ✻ You OR Other	3.792	1	3.792	1.115	0.293	0.010
Residuals	380.788	112	3.400			

Note. Type III Sum of Squares

Table 5

Two-way ANOVA analysis for the measure of one's decision to fly home for holidays.

ANOVA - Flying

Cases	Sum of Squares	df	Mean Square	F	p	η_p^2
COVID-19	62.442	1	62.442	19.589	< .001	0.149
You OR Other	2.474	1	2.474	0.776	0.380	0.007
COVID-19 ✻ You OR Other	30.142	1	30.142	9.456	0.003	0.078
Residuals	357.010	112	3.188			

Note. Type III Sum of Squares

Table 6

Two-way ANOVA analysis for the measure of driving one's own private car instead of riding with friends.

ANOVA - Driving

Cases	Sum of Squares	df	Mean Square	F	p	η_p^2
COVID-19	22.871	1	22.871	8.206	0.005	0.068
You OR Other	14.678	1	14.678	5.266	0.024	0.045
COVID-19 ✻ You OR Other	0.002	1	0.002	6.089e −4	0.980	5.436e −6
Residuals	312.168	112	2.787			

Note. Type III Sum of Squares

Appendix B

Survey

Please respond to the following statements about the acceptability of your own actions while assuming the current COVID-19 pandemic is still going on.

Please rate the acceptability of the following actions from 1 (Totally Unacceptable) to 7 (Perfectly Acceptable)

	(1) Totally Unacceptable	(2) Somewhat Unacceptable	(3) Slightly unacceptable	(4) Neutral	(5) Slightly Acceptable	(6) Somewhat Acceptable	(7) Totally Acceptable
1. You decide to drive your own car instead of riding with your friends to the park.	○	○	○	○	○	○	○
2. You ask for single-use plastic cutlery when ordering takeout to your home.	○	○	○	○	○	○	○
3. You decide not to bring your own grocery bags to buy groceries.	○	○	○	○	○	○	○
4. You decide to use paper towels instead of the hand dryer.	○	○	○	○	○	○	○
5. You decide to fly home for holidays.	○	○	○	○	○	○	○
6. You decide to eat meat everyday of the week.	○	○	○	○	○	○	○

Please respond to the following statements about the acceptability of Jake's actions while assuming the current COVID-19 pandemic is still going on. Jake is a randomly selected individual from UBC campus.

Please rate the acceptability of the following actions from 1 (Totally Unacceptable) to 7 (Perfectly Acceptable)

	(1) Totally Unacceptable	(2) Somewhat Unacceptable	(3) Slightly unacceptable	(4) Neutral	(5) Slightly Acceptable	(6) Somewhat Acceptable	(7) Totally Acceptable
1. Jake decides to drive his own car instead of riding with his friends to the park.	○	○	○	○	○	○	○
2. Jake asks for cutlery when ordering takeout to his home	○	○	○	○	○	○	○
3. Jake decides not to bring his own grocery bag to buy groceries	○	○	○	○	○	○	○
4. Jake decides to use paper towels instead of the hand dryer.	○	○	○	○	○	○	○
5. Jake decides to fly home for holidays.	○	○	○	○	○	○	○
6. Jake decides to eat meat everyday of the week.	○	○	○	○	○	○	○

Please answer the following statements about the acceptability of your own actions while assuming the current COVID-19 pandemic is NO LONGER present.

Please rate the acceptability of the following actions from

1 (Totally Unacceptable) to 7 (Perfectly Acceptable)

	(1) Totally Unacceptable	(2) Somewhat Unacceptable	(3) Slightly unacceptable	(4) Neutral	(5) Slightly Acceptable	(6) Somewhat Acceptable	(7) Totally Acceptable
1. You decide to drive your own car instead of riding with your friends to the park.	○	○	○	○	○	○	○
2. You ask for cutlery when ordering takeout to your home.	○	○	○	○	○	○	○
3. You decide not to bring your own grocery bag to buy groceries.	○	○	○	○	○	○	○
4. You decide to use paper towels instead of the hand dryer.	○	○	○	○	○	○	○
5. You decide to fly home for holidays.	○	○	○	○	○	○	○
6. You decide to eat meat everyday of the week.	○	○	○	○	○	○	○

Please respond to the following statements about the acceptability of Jake's actions while assuming the current COVID-19 pandemic is NO LONGER present. Jake is a randomly selected individual from UBC campus.

Please rate the acceptability of the following actions from
1 (Totally Unacceptable) to 7 (Perfectly Acceptable)

	(1) Totally Unacceptable	(2) Somewhat Unacceptable	(3) Slightly unacceptable	(4) Neutral	(5) Slightly Acceptable	(6) Somewhat Acceptable	(7) Totally Acceptable
1. Jake decides to drive his own car instead of riding with his friends to the park.	○	○	○	○	○	○	○
2. Jake asks for cutlery when ordering takeout to his home.	○	○	○	○	○	○	○
3. Jake decides not to bring his own grocery bag to buy groceries.	○	○	○	○	○	○	○
4. Jake decides to use paper towels instead of the hand dryer.	○	○	○	○	○	○	○
5. Jake decides to fly home for holidays.	○	○	○	○	○	○	○
6. Jake decides to eat meat every day of the week.	○	○	○	○	○	○	○

What is your age? (In years)

Which gender do you identify with?

- Male
- Female
- Non-binary / third gender
- Transgender
- Gender Variant / Non-conforming
- Prefer not to say
- Other (please specify)

What is your ethnicity?

- Hispanic/Latino/Latina
- Caucasian
- South Asian
- East Asian
- SouthEast Asian
- Native American
- African American/Black/Caribbean
- Others (please specify)
- Prefer not to say

Contribution of group members: Most ideas came up when we were in the discussion rooms and private meetings, to which we divided the responsibility to each group member. We all agree that we devoted equal effort to the final report and the whole research.