Article

Covid-19 Vaccine Passport and International Traveling: The Combined Effect of Two Nudges on Americans' Support for the Pass

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Abstract: Immunity passports have the potential to allow large scale international traveling to resume. However, they can only become an effective tool if they are widely supported by the general public. We carry out a double blind randomized online experiment with a sample of $N = 4000$ Americans to study: *i*) whether two nudges can increase the level of support for a COVID pass for international traveling; *ii*) the relationship between the effects of the nudges; and *iii*) if these nudges have a negative spillover on the intention to get vaccinated. We find that both nudges increase the support for the COVID pass and that their impact is stronger when they are used together. Moreover, we find that the two nudges do not affect negatively intentions to get vaccinated. Our findings have important implications for policymakers and for the nascent literature on the interaction among multiple nudges.

Keywords: COVID-19, COVID-19 Vaccine, Vaccine Passport, Nudges, Interaction Between Nudges, Peer Effect, Status Quo Bias

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1. Introduction

The coronavirus disease 2019 (COVID-19) pandemic has caused catastrophic losses both in terms of human lives [1] and to the economy [2,3]. Some of the sectors that were hit more dramatically are those connected with international traveling. For instance, the tourism sector and the airline industry have been brought to their knees by the many traveling restrictions adopted worldwide [4], and by the obvious reluctance of many to travel during a pandemic [5]. According to the The World Travel and Tourism Council, in 2020 the travel and tourism sector experienced staggering losses for \$3.8 trillions [6]. Moreover, a new report of the UN's Air Transportation Agency indicates that COVID-19 caused a decline in international air travel of around 60%, which resulted in losses for over \$370 billion to the airline industry [7]. However, as existing vaccines have proven to be safe and effective [8,9], these key industries are looking forward to better times, especially in light of the possible introduction of COVID-19 vaccine passports (hereinafter, COVID passes). COVID-19 passes allow the bearer to show information on their immunization status and permit people who have vaccinated against COVID-19, or have recently recovered from the virus, to face less restrictions while traveling.

While COVID passes present significant ethical and scientific challenges [10], requiring proof of vaccination for international traveling is not a new practice. For instance, the World Health Organization (WHO) has long endorsed certificates confirming vaccination against yellow fever to travel to certain countries [11]. Building on this precedent, policymakers and private companies have either introduced, or are planning to introduce, some form of COVID pass for international traveling. For example, the European Commission has reached an agreement on the "Digital COVID Certificate", which will

provide a proof that a person has been vaccinated against COVID-19, received a negative test result, or recently recovered from COVID-19 [12]. Moreover, leading airlines are working on the IATA Travel Pass App and are considering allowing only holders of such pass to board their flights [13].

In order to be successful, COVID passes need to be widely supported by the public. From this perspective, the demise of Contact Tracing Apps is a case in point [14], showing that even the most promising and hyped technological innovation can fail to deliver if it is perceived negatively by potential adopters. In a similar vein, if COVID passes are implemented passes without the support of the general public they might lead to significant problems like lowering vaccine uptake [15]. Luckily, at least for international traveling, COVID passes seem to be perceived somewhat favourably among the general public. A recent survey carried out in the U.S. reveals that only about one third of Americans is against requiring proof of vaccination for international traveling in the form of a COVID pass [16], while in a study carried out by IATA 80% of respondents stated that they intend to use the IATA Travel Pass App as soon as it becomes available [17].

Due to their enormous potential impact, COVID passes have been hotly discussed in the academic literature [18–21]. However, all existing studies have been purely qualitative or observational [22], with one notable exception [23]. Recent research related to COVID-19 has shown that behavioral interventions can have a significant impact on people's perception of the pandemic and foster people's preventive and pro-social behaviors [24–28]. This literature has shown that experimental studies can offer precious guidance to policymakers and companies. This paper expands this literature and offers guidance on how to increase the support for a COVID pass through a communication campaign based on nudging.

In particular, we present the results from a double blind randomized online experiment with a sample of $N = 4000$ Americans to test whether: *i*) two nudges can increase the level of support for a COVID pass for international traveling; *ii*) there are synergies between the effects of the two nudges; and *iii*) these nudges generate negative spillovers on intentions to get vaccinated.

The first nudge exploits the status quo bias, which is an effective technique to increase the acceptance of a policy by presenting it as a sign of continuity with the past, and has proven effective in a variety of contexts [29]. Here, we flag that proof of vaccination for international traveling is not a novel idea, and hypothesize that this will increase the support for the COVID pass. The second nudge, instead, builds on peer effect. There is evidence that the information on peer's actions can induce pro-social behaviors [30,31], and that people tend to conform to the policy preferences of their peers [32]. Moreover, previous literature has shown a tendency to conform driven by a need to belong to a group, and the influence that the group's opinion has on the individual [33,34]. In this vein, we hypothesize that informing respondents about the limited opposition to COVID passes for international traveling would increase the support for this policy.

2. Background Literature and Theoretical Framework

Nudges are now widely accepted as an effective tool to influence behaviors without constraining individuals' ability to choose [35–37]. Recent studies have shown that nudges are effective even in the context of COVID to promote pro-social behaviors [25–27]. Here, we investigate whether they can also be used to increase the support for the COVID pass.

2.1. Status Quo Bias

The first nudge on which we rely is the status quo bias. The basic idea is that people are more likely to support a policy if it is perceived as a continuation of the past. In other words, whenever “an advertiser, political actor, or any other persuader wishes to make a

Figure 1. Possible interactions among nudges

88 practice or product acceptable, framing their preferred alternative as the status quo is
 89 likely to enhance its position and increase its support" [38]. For instance, a recent study
 90 shows that support for carbon mitigation policies is higher if they are presented as a
 91 continuation of the status quo [39]. Similar results are obtained even for practices as
 92 controversial as torture. Crandall et al. [38] observe that when torture is presented as
 93 a longstanding practice it is perceived as more justifiable and effective. Scholars have
 94 advanced a wide array of explanations for the existence of this bias ranging from loss
 95 aversion and regret avoidance to repeated exposure [40]. However, there is evidence
 96 that the bias also stems from people's assumption of goodness associated with the mere
 97 existence and longevity of a given state of the world [40]. Against this background, it
 98 is reasonable to expect that the status quo bias can be exploited in connection with the
 99 COVID pass. In particular, flagging that requiring proof of vaccination for international
 100 traveling is not unprecedented should trigger the status quo bias, and hence increase the
 101 support for the COVID pass.

102 2.2. Peer Effect

103 The second nudge we test is peer effect. Several studies found that social norms and
 104 peer influence can shape behaviors and attitudes [30,31]. In a similar vein, other studies
 105 find that polls results can influence individual level attitudes, triggering the so-called
 106 "bandwagon effect" [32]. When polls indicate that a policy is widely supported, even
 107 more people will be persuaded to support that policy [41]. Thus, polls not only describe
 108 public opinion, but can also influence it. In fact, in many democratic countries there are
 109 restrictions on carrying out and publishing polls before the elections [42]. In the context
 110 of policy support, the bandwagon effect causes an increase in support for a given policy
 111 motivated by the popularity of the policy itself. As the COVID pass for international
 112 traveling already shows a relatively good level of support among segments of the public,
 113 we attempt to leverage the bandwagon effect to further increase the support for the pass.

114 2.3. Interaction Among Nudges

115 Policymakers are increasingly relying on nudges to promote certain behaviors.
 116 Therefore, a key question is how multiple nudges targeted at promoting a given behavior
 117 interact. Consider the case in which nudges A and B are both effective in fostering
 118 behavior X. What happens when they are used simultaneously on the same target
 119 behavior?

120 As indicated in Figure 1, the interaction between two nudges can: *i*) be synergistic,
 121 when their joint effect is larger than the sum of the effects of each nudge separately,
 122 *ii*) be weakly additive, when their joint effect is larger than the effect of each of the

two nudges when used separately, but smaller than their sum *iii*) backfire, when the two nudges together produce a smaller effect than either of the two nudges used alone. Understanding the kind of interaction between nudges is extremely important, as policymakers generally employ a portfolio of tools and nudges to achieve a given goal [43]. The evidence produced by the literature is, however, very limited. A recent study focused on the interaction between a moral suasion nudge aimed at reducing electricity consumption during peak load events and peer effect comparison targeting aggregate household electricity consumption [44]. The study identified a synergistic relationship between the two nudges.

A related nascent literature has attempted to identify the relationship between price incentives and nudges [43]. The handful of works carried out in this domain have produced conflicting evidence [45–47]. A recent survey on the issue concluded that due to the very small number of works on this area “our understanding ... is limited, as studies rarely use an approach that allows properly assessing synergy or the causes and mechanisms of it”. [43]. One hypothesis that has been advanced is that there might be diminishing marginal returns from policy pressure, and therefore the relationship among nudges might depend on the level of support for a given policy [43,44]. Thus, for example, two nudges might be in a synergistic relationship when a policy has a low level of support, but then change the interaction to weakly additive when the support for the policy grows beyond a certain threshold.

We attempt to contribute to this nascent and important field of research on nudges interactions by investigating the relationship between two widely adopted nudges in a highly salient domain.

2.4. Behavioral Spillovers

Another important question is whether a nudge has significant spillovers that affect other activities. That is, if nudge A, intended to promote behavior X, also affects behavior Y. The literature has found evidence of both positive and negative spillovers in different domains. For instance, a study found a strong interdependence between fuel-efficient driving styles and willingness to reduce meat consumption [48]. One reason behind positive spillovers of this kind might be that people wish to perceive themselves (and to be perceived) as consistent, and hence attempt to act in a consistent manner across different domains. In this vein, if they engage in the pro-environmental behavior X, they are more likely to engage in the pro-environmental behavior Y [49]. Instead, in other cases scholars have observed negative spillovers. For example, a study observed that the owners of electric cars felt less compelled to engage in pro-environmental behavior than owners of traditional cars [50]. One of the possible causes of negative spillovers is the so-called moral-licensing effect. If people feel that they have done their part, they are more likely to engage in negative behaviors.

Understanding the sign of the spillovers is crucial, because in presence of negative spillovers nudges that appear to be effective might backfire by triggering a negative response on other behaviors. Scholars are therefore trying to devise experiments that investigate the existence of such spillovers and their sign. However, the debate is still ongoing and most studies so far have focused on pro-environmental behaviors. Understanding whether there are spillovers from the introduction of COVID passes and their direction should be a key priority for policymakers. For instance, if promoting the COVID pass results in lower vaccination uptake, governments should be very careful before implementing this tool.

3. Materials and Methods

We recruited a sample of $N = 4000$ Americans on Prolific.co. To be eligible, people had to be at least 18 years of age and be resident in the U.S.. Participants took on average approximately 5 minutes and a half to complete the survey, and they were paid \$0.55. The data collection started and finished on the 15th of May 2021. We obtained informed

Figure 2. Experiment Flow

175 consent from all participants prior to the beginning of the online survey, which was
 176 approved by the faculty ethics committees of Yale University, Bocconi University and
 177 the London School of Economics.

178 To begin with, we asked respondents about their vaccination status, which allowed
 179 us to distinguish between respondents who completed their vaccination schedule and
 180 those who are still waiting for their first or second dose. Moreover, we asked respondents
 181 who have not yet completed their cycle whether they intend to complete their cycle or
 182 not. In the same vein, we asked respondents who have not received a vaccine whether
 183 they intend to get vaccinated when they will have the opportunity.

184 After this, respondents were randomly assigned to one of four different groups:
 185 Control, Status Quo, Peer Effect and Status Quo + Peer Effect (Figure 2).

186 The respondents in the Control Group only received basic information on the fea-
 187 tures and the purpose of a COVID pass for international traveling. The respondents
 188 included in the Status Quo condition were also informed that requiring proof of vac-
 189 cination for international traveling is not unprecedented. Moreover, they were shown
 190 a picture of the International Certificate of Vaccination or Prophylaxis, or more simply
 191 the Yellow Card, endorsed by the World Health Organization to allow travelers to show
 192 proof of vaccination against yellow fever when entering certain countries. Finally, re-
 193 spondents in the Peer Effect condition were informed that according to a recent survey
 194 by YouGov and the Economist only one third of Americans oppose a COVID pass for
 195 international traveling. Last, respondents in the Status Quo + Peer Effect condition were
 196 informed about both the fact that requiring proof of vaccination is not a novel idea, and
 197 that only one third of Americans oppose a COVID pass for international traveling (see
 198 Figure 3).

199 After seeing the treatment, respondents are asked to state their level of agreements
 200 on a scale from zero to ten with statements intended to capture their support for the
 201 COVID pass. The first three statements aim at capturing the perceived importance
 202 of the COVID pass. Statements 4-8 intend to capture the perceived unfairness of the
 203 COVID pass along various dimensions. Statements 9 and 10 target additional concerns
 204 connected with the COVID pass, namely whether it can be forged and how it would affect
 205 vaccination rates. Statement 11 asks respondents whether they think that only people
 206 with a COVID pass should be allowed to board on international flights. Statement 12
 207 deals with the troublesome finding of the literature that some people might intentionally
 208 get infected with COVID-19 if a COVID pass is introduced [51], while statement 13
 209 intends to capture the overall perceived balance among pros and cons of the COVID
 210 pass. Table ?? reports the full list of statements, their number and the summary statistics

What is a COVID PASS?

A COVID PASS would be a printed card or an app allowing the holder to easily show that they are vaccinated against COVID-19 or that they have recently recovered from the virus.

Why have a COVID pass?

Many airline companies and countries are starting to require a proof of vaccination from their customers and visitors. Without a proof of vaccination people will not be allowed to board flights operated by these companies or to visit these countries.

A COVID PASS would allow people to provide a quick and certified proof of vaccination.

Many experts believe that introduction of the COVID PASS would facilitate international traveling and help boosting the tourism sector, while reducing the risk that new variants of COVID-19 originated in other countries will reach the U.S..

This is not a new idea!

To travel to many destinations U.S. citizens are already required to take some mandatory vaccinations.

There are already standardized cards that allow U.S. citizens to show a proof of vaccination, like the International Certificate of Vaccination of Prophylaxis.

Only few Americans are against requiring a COVID pass for international traveling

A recent survey by YouGov and the Economist shows that only about a third of Americans believe that a COVID pass should not be a requirement for international travel.

Figure 3. The top slides are shown to all participants. Respondents in the Control Group only see the top slides. Respondents in the Status Quo Group also see the bottom left slide. Respondents in the Peer Effect Group also see the bottom right slide. Respondents in the Status Quo + Peer Effect Group see all four slides.

(mean and standard deviation). The number of the statements conveys the order in which they were asked, and will be used to denote the statements throughout the article.

Moreover, we ask respondents how likely they are to get vaccinated if a COVID pass for international traveling is introduced. The precise wording of the question depends on the vaccination status declared by the respondents at the begin of the survey. Therefore, for instance, respondents who have received only one dose are asked if they want to complete their vaccination cycle if the COVID pass is introduced. Instead, respondents who have not received any dose are asked if they intend to get vaccinated if a COVID pass is introduced. The answers are presented on a five-point Likert scale ranging from “Very unlikely” to “Very likely”.

Last, we ask a series of questions that are used as controls. Such questions capture the level of trust in key institutions like the Federal Government, the respondent’s State Government and the Centers for Disease Control and Prevention (CDC) or in pharmaceutical companies and tech giants. Respondents also face an attention check towards the end of the questionnaire. In the attention check respondents receive a multiple choice question in which they are asked to select the answer “5” if they are paying attention. The results we present in the next section exclude from the analysis the five participants who did not pass the attention check. However, the results remain robust even including these participants. We conclude the survey by asking standard demographic questions like age, education, political affiliation, etc.

4. Results

In this section we present the results of our experiment for each statement individually. In the Appendix, we present the results in a more concise form using factor analysis, grouping all the statements capturing the respondents’ support for the pass. The two approaches produce consistent results.

The demographics of our sample are similar to U.S. demographics in many key aspects. For instance, roughly 76 percent of the U.S. population is white [52] and in our sample white respondents account for 74 percent of the participants. Our sample also closely matches the general U.S. population with respect to income distribution, percentage of republicans and education levels [52]. However, there are some differences in the composition of our sample and that of the US population. For example, 58% of our sample is composed by females, whereas the percentage of females in US is about 51% [53]. Our sample is also younger than the general population, but well represented in all the age groups. Most importantly, the sample is balanced among conditions, allowing for a clear comparison between the control and treatment groups.

4.1. Status Quo Treatment

We start by studying the impact of the Status Quo treatment (Table 3). We find that respondents included in this group agree more with the three statements capturing the importance of the pass with respect to respondents included in the control group. The difference is sizeable, significant at one percent ($p < 0.001$, $p = 0.002$, $p < 0.001$, respectively) and robust to different sets of control variables for all three statements. When turning to unfairness, we find that respondents in the Status Quo agree less with statements 4-7 ($p < 0.001$, $p = 0.014$, $p = 0.004$, $p = 0.008$). Also in this case the difference is sizeable and robust to a battery of controls. Instead, we do not observe a significant difference with respect to statement 8.

Additionally, we do not observe a significant impact of the Status Quo treatment on statements 9 and 12. Therefore, the Status Quo treatment does not induce people to believe that it is easy to forge a COVID pass, nor it induces people to state that they would intentionally get COVID if a pass is introduced. Similarly, the Status Quo does not lead respondents to state that more people will get vaccinated if a pass is introduced (statement 10). Additionally, with respect to the statement 11 we observe that the Status

Table 1: Sample balance: the frequency table reports the Number, Percentage and Cumulative Percentage of respondents for the following variables: Political Orientation, Gender, Income, Education, Age, Employment and Race. Column 1 shows the distribution for the Control Group, Column 2 shows the distribution for the Status Quo Group, Column 3 shows the distribution for the Peer Effect Group, Column 4 shows the distribution for the Status Quo and Peer Effect Group ("PE + Status Quo") and Column 5 shows the overall distribution in the sample.

	Group														
	Control			Status Quo			Peer Effect			PE + Status Quo			Total		
	No.	Col %	Cum %	No.	Col %	Cum %	No.	Col %	Cum %	No.	Col %	Cum %	No.	Col %	Cum %
Political Orientation															
Republican	167	16.7	16.7	165	16.5	16.5	163	16.3	16.3	163	16.4	16.4	658	16.5	16.5
Democrat	571	57.2	73.9	575	57.5	74.0	573	57.4	73.7	550	55.3	71.7	2269	56.8	73.3
Other or No Strong Preference	261	26.1	100.0	260	26.0	100.0	263	26.3	100.0	282	28.3	100.0	1066	26.7	100.0
Total	999	100.0		1000	100.0		999	100.0		995	100.0		3993	100.0	
Gender															
Other/Prefer not to declare	32	3.2	3.2	20	2.0	2.0	30	3.0	3.0	23	2.3	2.3	105	2.6	2.6
Female	551	55.2	58.4	582	58.2	60.2	607	60.8	63.8	553	55.6	57.9	2293	57.4	60.1
Male	416	41.6	100.0	398	39.8	100.0	362	36.2	100.0	419	42.1	100.0	1595	39.9	100.0
Income															
Less than \$10,000	56	5.6	5.6	53	5.3	5.3	66	6.6	6.6	62	6.2	6.2	237	5.9	5.9
\$10,000 to \$19,999	63	6.3	11.9	64	6.4	11.7	62	6.2	12.8	87	8.8	15.0	276	6.9	12.9
\$20,000 to \$29,999	93	9.3	21.2	85	8.5	20.2	104	10.4	23.3	82	8.3	23.3	364	9.1	22.0
\$30,000 to \$39,999	81	8.1	29.4	99	9.9	30.1	95	9.5	32.8	96	9.7	32.9	371	9.3	31.3
\$40,000 to \$49,999	106	10.6	40.0	106	10.6	40.7	82	8.2	41.0	71	7.2	40.1	365	9.2	40.5
\$50,000 to \$59,999	112	11.2	51.2	111	11.1	51.9	93	9.3	50.4	82	8.3	48.3	398	10.0	50.4
\$60,000 to \$69,999	74	7.4	58.6	76	7.6	59.5	81	8.1	58.5	82	8.3	56.6	313	7.9	58.3
\$70,000 to \$79,999	85	8.5	67.1	66	6.6	66.1	75	7.5	66.0	90	9.1	65.7	316	7.9	66.2
\$80,000 to \$89,999	42	4.2	71.3	55	5.5	71.6	46	4.6	70.6	58	5.8	71.5	201	5.0	71.3
\$90,000 to \$99,999	54	5.4	76.8	57	5.7	77.3	55	5.5	76.1	53	5.3	76.8	219	5.5	76.7
\$150,000 or more	155	15.5	92.3	142	14.2	91.5	139	13.9	90.1	151	15.2	92.0	587	14.7	91.5
Total	77	7.7	100.0	85	8.5	100.0	99	9.9	100.0	79	8.0	100.0	340	8.5	100.0
Education															
Less than high school degree	8	0.8	0.8	7	0.7	0.7	14	1.4	1.4	7	0.7	0.7	36	0.9	0.9
High school graduate (diploma or equivalent)	103	10.3	11.1	104	10.4	11.1	102	10.2	11.6	109	11.0	11.7	418	10.5	11.4
Some college but no degree	206	20.6	31.7	230	23.0	34.1	230	23.0	34.6	227	22.8	34.5	893	22.4	33.8
Associate degree in college (2-year)	93	9.3	41.0	84	8.4	42.5	109	10.9	45.5	111	11.2	45.7	397	9.9	43.7
Bachelor's degree in college	400	40.0	81.1	373	37.3	79.9	347	34.7	80.3	371	37.3	83.0	1491	37.4	81.1
Master's degree or Professional Degree (JD, MD)	176	17.6	98.7	177	17.7	97.6	169	16.9	97.2	148	14.9	97.9	670	16.8	97.8
Doctoral degree	13	1.3	100.0	24	2.4	100.0	28	2.8	100.0	21	2.1	100.0	86	2.2	100.0
Age															
18-25 years old	253	25.3	25.3	250	25.0	25.0	218	21.8	21.8	240	24.1	24.1	961	24.1	24.1
26-35 years old	343	34.3	59.7	354	35.4	60.4	358	35.8	57.7	317	31.9	56.0	1372	34.4	58.4
36-45 years old	185	18.5	78.2	179	17.9	78.3	189	18.9	76.6	194	19.5	75.5	747	18.7	77.1
46-55 years old	91	9.1	87.3	109	10.9	89.2	101	10.1	86.7	108	10.9	86.3	409	10.2	87.4
56-65 years old	64	6.4	93.7	50	5.0	94.2	61	6.1	92.8	73	7.3	93.7	248	6.2	93.6
66-75 years old	21	2.1	95.8	19	1.9	96.1	24	2.4	95.2	31	3.1	96.8	95	2.4	96.0
>75 years old	42	4.2	100.0	39	3.9	100.0	48	4.8	100.0	32	3.2	100.0	161	4.0	100.0
In full or part time employment	659	66.0	100.0	642	64.2	100.0	649	65.0	100.0	643	64.6	100.0	2593	64.9	100.0
Student	106	10.6	100.0	117	11.7	100.0	127	12.7	100.0	120	12.1	100.0	470	11.8	100.0
White	741	74.2	100.0	761	76.1	100.0	730	73.1	100.0	709	71.3	100.0	2941	73.7	100.0

Table 2: List of statements with their respective number and summary statistics (mean and standard deviation). Participants were asked their agreement with the following sentences on a scale from 0 to 10.

St. Nr.	Statement	(Total)		(Control)		(Status Quo)		(Peer Effect)		(SQ+ PE)	
		mean	sd	mean	sd	mean	sd	mean	sd	mean	sd
1	COVID PASS is important to fight COVID-19	6.54	3.35	6.14	3.33	6.62	3.30	6.59	3.42	6.80	3.32
2	A COVID PASS can help preventing new variants of COVID-19 that might render current COVID-19 vaccines ineffective	6.29	3.40	5.90	3.39	6.22	3.40	6.34	3.41	6.68	3.37
3	A COVID PASS is key to return to normal quickly and safely	6.16	3.38	5.78	3.40	6.19	3.29	6.17	3.44	6.52	3.37
4	A COVID PASS is an extreme limitation to the individual liberties of Americans	3.11	3.45	3.29	3.44	2.91	3.39	3.31	3.58	2.90	3.37
5	A COVID PASS could harm the U.S. social fabric	2.91	3.32	3.11	3.34	2.83	3.29	3.04	3.36	2.64	3.27
6	A COVID PASS poses severe dangers to Americans' data privacy	3.03	3.36	3.21	3.31	2.88	3.35	3.17	3.42	2.86	3.34
7	It is unfair that people with a COVID PASS can travel internationally, while individuals without it cannot	2.72	3.38	2.73	3.39	2.51	3.25	2.95	3.49	2.70	3.38
8	Allowing people with a COVID PASS to travel to countries with lower access to vaccines and potentially come into contact with unvaccinated locals is unfair	3.66	3.21	3.68	3.17	3.55	3.14	3.91	3.27	3.49	3.25
9	A COVID PASS could be easily forged	5.88	2.97	5.95	3.00	5.87	2.93	5.95	2.95	5.74	2.99
10	A COVID PASS would induce more people to get vaccinated	6.17	2.81	6.10	2.76	6.19	2.79	6.11	2.92	6.29	2.75
11	ONLY people with a COVID PASS should be allowed to board INTERNATIONAL flights	6.30	3.52	6.10	3.52	6.31	3.48	6.35	3.55	6.46	3.54
12	If a COVID PASS is implemented, I would intentionally infect myself with COVID-19 to obtain it	0.57	1.64	0.58	1.68	0.59	1.67	0.55	1.58	0.56	1.63
13	Overall, the pros of requiring a COVID PASS for international traveling outweigh the cons	6.65	3.33	6.38	3.36	6.79	3.22	6.52	3.40	6.89	3.32
Obs		3993		999		1000		999		995	

Table 3: OLS beta coefficients deriving from regressions with the statements as the dependent variable and a binary variable to measure the impact of being in the treatment groups with respect to the Control group. The regressions are ran controlling for demographics, vaccination status, frequency of travel and trust levels of the participants. Tables of the regressions output are included in the Appendix.

Nr. Stmt	N	β_{SQ}	p_{SQ}	β_{PE}	p_{PE}	β_{PE+SQ}	p_{PE+SQ}
1	3705	0.525	<0.001	0.56	<0.001	0.707	<0.001
2	3704	0.404	0.002	0.544	<0.001	0.88	<0.001
3	3696	0.471	<0.001	0.48	<0.001	0.792	<0.001
4	3656	-0.413	0.001	-0.101	0.438	-0.485	<0.001
5	3639	-0.308	0.014	-0.195	0.128	-0.527	<0.001
6	3636	-0.364	0.004	-0.188	0.137	-0.443	<0.001
7	3634	-0.331	0.008	0.0755	0.566	-0.134	0.302
8	3664	-0.207	0.137	0.175	0.218	-0.264	0.059
9	3703	-0.09	0.488	-0.0582	0.66	-0.221	0.094
10	3701	0.107	0.362	0.0308	0.797	0.17	0.141
11	3693	0.305	0.024	0.302	0.027	0.361	0.008
12	3579	0.0314	0.681	-0.0094	0.897	0.0046	0.951
13	3690	0.494	<0.001	0.24	0.055	0.592	<0.001

Quo leads respondents to agree more with the idea that only people with a COVID pass should be able to board international flights ($p = 0.024$).

Last, respondents in the Status Quo condition agree more with the statement 13 ($p < 0.001$), and therefore consider the pros of a COVID pass to outweigh its cons. Table 3 presents the results of regressions ran with the statement as a dependent variable, the treatment as the main independent variable and controls for demographics, vaccination status and trust levels of the participants. We refer the reader to the online Appendix for the full regression tables, including the results from regressions with different sets of controls.

To summarize, we conclude that the status quo bias is highly effective in increasing the perceived importance of the COVID pass (statements 1-3), in reducing its perceived unfairness (statements 4-7, with the exception of statement 8), and overall increases the support for the COVID pass (statement 13).

Peer Effect Treatment

As for the Status Quo, we find that respondents included in this group agree more with the three statements capturing the importance of the pass with respect to respondents included in the control group (see Table 3). The magnitude of the effects is large, statistically significant ($p < 0.001$ for all statements) and robust to various sets of control variables for all three statements. When turning to unfairness, instead, we observe that the Peer Effect treatment is not effective. The Peer Effect treatment does not impact the level of agreement with statement 9 and 12, and it does not lead respondents to state that more people will get vaccinated if a pass is introduced (statement 10). Last, respondents in the Peer Effect condition agree more with the idea that the pros of a COVID pass outweigh the cons (statement 13), but the result is weaker than for the Status Quo ($p = 0.55$). Table 3 presents the results of regressions ran with the statement as a dependent variable, the treatments as the main independent variable and controls for demographics, vaccination status, frequency of travel and trust levels of the participants. We refer the reader to the online Appendix for the full regression tables, including the results from regressions with different sets of controls.

Overall, the peer effect condition has a positive and statistically significant impact on the perceived importance of the COVID pass (statements 1-3), but it has a limited impact on the perceived unfairness (statements 4, 6, 7, 8 with statement 5 being the exception). Moreover, it increases the overall support for the COVID pass (statement 13).

Figure 4. Summary of results for the statements meant to capture positive attributes of the COVID pass (statements 1-3, 10, 11 and 13). The boxplots show the distribution of responses in the Control, Status Quo, Peer Effect and Peer Effect and Status Quo groups without any additional control. A higher value corresponds to more favorable attitudes towards the pass.

295 *Status Quo + Peer Effect Treatment*

296 Then, we turn to studying the impact of the two nudges when they are used
 297 simultaneously. Starting with the statements on the importance of the pass, we find that
 298 the joint impact of the nudges is statistically significant ($p < 0.001$ for all statements)
 299 and larger than the impact of both nudges used separately (Table 3), showing weak
 300 additionality in the treatments' effects. For instance, for Statement 2 the joint impact
 301 of the two nudges is 218% larger than the effect of the Status Quo alone and 162%
 302 larger than that of peer effect.

303 Combining the two nudges is also very effective in reducing the perceived level of
 304 unfairness. Respondents in this condition agree less with statements 4, 5, 6 and 8 ($p <$
 305 0.001 , $p < 0.001$, $p < 0.001$, $p = 0.059$). In line with the Status Quo and the Peer Effect
 306 conditions, for statements 9, 10 and 12 we observe no significant differences between
 307 this condition and the control. Instead, we see that for statement 11 the joint impact of
 308 the two treatments is slightly larger and more statistically significant ($p = 0.008$) than
 309 that of the status quo and the peer effect when used separately.

310 Last, this treatment is the most effective in persuading people that the pros of the
 311 COVID pass outweigh the cons (statement 13) ($p < 0.001$).

312 Table 3 presents the results of regressions ran with the statement as a dependent
 313 variable, the treatment as the main independent variable and controls for demographics,
 314 vaccination status, frequency of travel and trust levels of the participants. We refer the
 315 reader to the online Appendix for the full regression tables, including the results from
 316 regressions with different sets of controls.

317 Overall, for virtually all statements we find that the two treatments used together
 318 have a stronger impact. Figures 4 and 5 summarizes our findings.

319 To further ensure that our results are robust, we carry out a post hoc test to estimate
 320 the marginal effect of the combination of the two nudges relative to the effect of each
 321 one separately. The results are included in the online Appendix and are consistent with
 322 the results reported in Table 3.

Figure 5. Summary of results for the statements meant to capture negative attributes of the COVID pass (statements 4-9). The boxplots show the distribution of responses in the Control, Status Quo, Peer Effect and Peer Effect and Status Quo groups without any additional control. A lower value corresponds to more favourable attitudes towards the pass.

Table 4: OLS beta coefficients deriving from regressions with the intention to get vaccinated as the dependent variable and a binary variable to measure the impact of being in the treatment groups with respect to the Control group. The regressions are ran controlling for demographics, vaccination status, frequency of travel and trust levels of the participants. Tables of the regressions output are included in the Appendix.

Status	N	β_{SQ}	p_{SQ}	β_{PE}	p_{PE}	β_{PE+SQ}	p_{PE+SQ}
Unvaccinated	1158	0.0124	0.897	-0.12	0.238	-0.01	0.919
One Dose	433	-0.275	0.059	-0.0807	0.501	0.103	0.31
Vaccinated	2121	-0.03	0.494	0.007	0.879	-0.026	0.572
All Sample	3716	-0.0535	0.279	-0.07	0.169	-0.033	0.505

323 *Intention to get Vaccinated*

324 Last, we turn to investigate whether the treatments affect the intention to get
 325 vaccinated if a COVID pass is introduced. The results are indicated in Table 4. We carry
 326 out the analysis considering separately the respondents who have completed a cycle of
 327 vaccination, the respondents who have received only one dose, and respondents who
 328 have not received a dose yet.

329 We find that the treatments do not have a negative impact on the intention to get
 330 vaccinated in case a COVID pass is introduced for any of these groups. Moreover, we
 331 find that the treatments do not have a negative impact also when aggregating the three
 332 groups (Table 4).

333 Thus, the introduction of a COVID pass is unlikely to negatively affect intentions to
 334 get vaccinated.

335 **Discussion**

336 Our experiment revealed that the status quo bias and peer effect can be used
 337 together as an effective mean to increase support for the COVID pass, without reducing
 338 intention to get vaccinated. These findings have both immediate policy implications and
 339 broader theoretical implications.

340 *Policy Implications*

341 COVID passes could play a crucial role in restarting large scale international travel-
 342 ing. However, for them to be successful they must be perceived as both important
 343 and fair by the general public. Our results can aid policymakers in ensuring that these
 344 conditions are met.

345 Flying without being vaccinated imposes significant externalities on the country of
 346 destination, the other passengers on the flight, and society at large. As noted by Sunstein
 347 [35], nudges aimed at mitigating a negative externality are not particularly controversial
 348 from an ethical perspective. The only relevant issue is whether they are effective. From
 349 this perspective, we find that both the status quo and peer effect are highly effective
 350 in increasing the support for the COVID pass. Most importantly, our results suggest
 351 that policymakers who want to increase the support for the COVID pass should rely
 352 on the two nudges simultaneously, as this allows them to both increase the perceived
 353 importance and the perceived fairness of the COVID pass. In fact, while the relationship
 354 between the nudges is not synergistic but weakly additive, the cost of each nudge is
 355 likely to be minimal and their combined effect is larger. However, so policymakers often
 356 neglected to flag that requiring proof of vaccination for international traveling is not
 357 unprecedented, and that in the case of COVID it would be opposed by only a minority
 358 of people (e.g., [54]).

359 Nevertheless, in some contexts policymakers and private companies might not
 360 have the possibility to employ both nudges. For instance, according to the Advertising
 361 Research Foundation (ARF) 6 seconds TV advertising are very effective in commanding
 362 more attention per second than longer advertisements [55]. For such short communica-
 363 tions, policymakers and private companies might have to focus on a single nudge. In
 364 this case, if they intend to emphasize the importance of the COVID pass they should
 365 rely on the peer effect nudge, whereas if they intend to flag the fairness of the pass they
 366 should build on the status quo bias.

367 *Theoretical Implications*

368 At a theoretical level, our work contributes to two strands of literature that are
 369 gaining momentum: (i) the study of interactions among nudges; and (ii) behavioral
 370 spillovers triggered by nudges.

371 The literature on interaction among nudges is in its infancy and, to the best of our
 372 knowledge, there are no studies testing the interaction between peer effect and the status
 373 quo bias, especially in health-related domains. As these nudges are among the most
 374 widely studied in the literature and are effective in many domains, it is important to
 375 understand whether they can be used together or if their joint use is likely to backfire.
 376 Our results reveal that at least in relation to COVID vaccine pass, the status quo and the
 377 peer effect nudges are effective together and their effects are weakly additive.

378 While our results refer to a very unique setting, there are reasons to believe that the
 379 status quo bias and the peer effect could often be in a weakly additive relationship. First,
 380 by definition, a peer effect nudge as the one used in our experiment can be implemented
 381 only for policies that already have a fair amount of support. Therefore, it is likely that for
 382 these policies the marginal returns from policy pressure are diminishing at a fairly fast
 383 rate. This argument holds both at society level, as greater support implies that there are
 384 only a few people left to convince, and at the individual level, where support is already
 385 high and cannot further increase by much. This might make it unlikely to observe a
 386 synergistic relationship when using the status quo in combination with other nudges
 387 nudges.

388 Second, while they exploit different mechanisms, there is a connection between
 389 the two forms of nudges, as they both rely on social influence. Social psychology
 390 distinguishes between two main forms of social influence: informational social influence
 391 (telling people what is commonly done) and normative social influence (informing them
 392 about what is widely approved) [33,34]. The nudges we implemented in this paper are

likely to stimulate both forms of social influence. In fact, the status quo bias suggests that *in the past* there was sufficient support for the policy that it was implemented, whereas the peer effect suggests that *today* there is widespread support for the policy in question. The interaction of informational and normative social influence implicitly pushes the individual in the same direction, making it reasonable to expect some compounding in the effects of the two nudges.

Moreover, as neither on the two interventions relies on monetary incentives, it is unlikely that extrinsic motivations would crowd out the intrinsic motivations triggered by the nudges. For these reasons, we suggest that combining status quo and peer effect is highly unlikely to backfire.

In addition we extend the literature on behavioral spillovers by investigating whether nudges on highly topical issues can generate a backlash on other key behaviors. We observe that in this context neither of the treatments had a negative impact on the intention to get vaccinated, thus suggesting that negative spillovers are not going to offset the positive impact of these nudges.

Limitations of the Analysis and Future Research

From a methodological standpoint, our study suffers from two limitations. First, we carry out an online experiment, and hence – like with every online experiment – one can question its external validity. This is partially alleviated by the heterogeneous composition of our sample and its large size. Second, while we rely on a large sample that closely matches the U.S. population along key variables, our sample is not representative. However, online experiments with non-representative samples are widely used across many disciplines and have been proven to be a reliable source of information, with a good degree of generalizability [56]. Moreover, the magnitude of the coefficients is large and robust to different sets of controls, suggesting that our results are likely to be informative even if the sample is not representative.

Additionally, the effect of our treatments is also likely to be context dependent. For instance, it is possible that the impact of peer effect treatment might change, once the percentage of people opposing the COVID pass changes. Therefore, it is of key importance to implement these nudges before too many people start opposing COVID pass. Last, we do not include a manipulation check in our experiment.

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- 444 1. WHO. WHO Coronavirus (COVID-19) Dashboard. Online at <https://covid19.who.int>, 2021.
- 445 2. McKibbin, W.; Fernando, R. The economic impact of COVID-19. *Economics in the Time of*
- 446 *COVID-19* **2020**, 45.
- 447 3. Cutler, D.M.; Summers, L.H. The COVID-19 pandemic and the \$16 trillion virus. *Jama* **2020**,
- 448 324, 1495–1496.
- 449 4. Gössling, S.; Scott, D.; Hall, C.M. Pandemics, tourism and global change: a rapid assessment
- 450 of COVID-19. *Journal of Sustainable Tourism* **2020**, 29, 1–20.
- 451 5. Immordino, G.; Jappelli, T.; Oliviero, T.; Zazzaro, A. Fear of COVID-19 Contagion and
- 452 Consumption: Evidence from a Survey of Italian Households. Technical report, Centre for
- 453 Studies in Economics and Finance (CSEF), University of Naples, Italy, 2021.
- 454 6. Schengenvisainfo. WTTC: Global Travel Tourism Sector Lost Around €3,8 Trillion in 2020
- 455 Due to COVID-19. Online at [https://www.schengenvisainfo.com/news/wttc-global-travel-](https://www.schengenvisainfo.com/news/wttc-global-travel-tourism-sector-lost-around-e38-trillion-in-2020-due-to-covid-19/)
- 456 [tourism-sector-lost-around-e38-trillion-in-2020-due-to-covid-19/](https://www.schengenvisainfo.com/news/wttc-global-travel-tourism-sector-lost-around-e38-trillion-in-2020-due-to-covid-19/), 2021.
- 457 7. UN-News. Air travel down 60 per cent, as airline industry losses top \$370 billion: ICAO.
- 458 Online at <https://news.un.org/en/story/2021/01/1082302>, 2021.
- 459 8. Prüß, B.M. Current State of the First COVID-19 Vaccines. *Vaccines* **2021**, 9, 30.
- 460 9. Haas, E.J.; Angulo, F.J.; McLaughlin, J.M.; Anis, E.; Singer, S.R.; Khan, F.; Brooks, N.;
- 461 Smaja, M.; Mircus, G.; Pan, K.; others. Impact and effectiveness of mRNA BNT162b2
- 462 vaccine against SARS-CoV-2 infections and COVID-19 cases, hospitalisations, and deaths
- 463 following a nationwide vaccination campaign in Israel: an observational study using national
- 464 surveillance data. *The Lancet* **2021**.
- 465 10. Hall, M.A.; Studdert, D.M. “Vaccine Passport” Certification—Policy and Ethical Considera-
- 466 tions. *New England Journal of Medicine* **2021**.
- 467 11. UN-News. Amendment to International Health Regulations, 2005, annex 7 (yellow fever).
- 468 Online at <https://www.who.int/ith/annex7-ihp.pdf2>, 2013.
- 469 12. EuropeanCommission. EU Digital COVID Certificate: European Parliament and Council
- 470 reach agreement on Commission proposal. Online at [https://ec.europa.eu/commission/](https://ec.europa.eu/commission/presscorner/detail/en/IP_21_2593)
- 471 [presscorner/detail/en/IP_21_2593](https://ec.europa.eu/commission/presscorner/detail/en/IP_21_2593), 2021.
- 472 13. IATA. IATA Travel Pass Initiative. Online at [https://www.iata.org/en/programs/](https://www.iata.org/en/programs/passenger/travel-pass/)
- 473 [passenger/travel-pass/](https://www.iata.org/en/programs/passenger/travel-pass/), 2021.
- 474 14. Rowe, F.; Ngwenyama, O.; Richet, J.L. Contact-tracing apps and alienation in the age of
- 475 COVID-19. *European Journal of Information Systems* **2020**, 29, 545–562.
- 476 15. NBC. Politicization of ‘vaccine passports’ could aggravate GOP hesitancy, experts warn. On-
- 477 line at [https://www.nbcnews.com/politics/politics-news/politicization-vaccine-passports-](https://www.nbcnews.com/politics/politics-news/politicization-vaccine-passports-could-aggravate-gop-hesitancy-experts-warn-n1263048)
- 478 [could-aggravate-gop-hesitancy-experts-warn-n1263048](https://www.nbcnews.com/politics/politics-news/politicization-vaccine-passports-could-aggravate-gop-hesitancy-experts-warn-n1263048), 2021.
- 479 16. YouGovAmerica. Americans tend to support vaccine passports for international travel.
- 480 [https://today.yougov.com/topics/travel/articles-reports/2021/04/21/americans-tend-](https://today.yougov.com/topics/travel/articles-reports/2021/04/21/americans-tend-support-vaccine-passports-internati)
- 481 [support-vaccine-passports-internati](https://today.yougov.com/topics/travel/articles-reports/2021/04/21/americans-tend-support-vaccine-passports-internati), 2021.
- 482 17. IATA. Travelers Gaining Confidence. Online at [https://www.iata.org/en/pressroom/pr/](https://www.iata.org/en/pressroom/pr/2021-03-09-01/)
- 483 [2021-03-09-01/](https://www.iata.org/en/pressroom/pr/2021-03-09-01/), 2021.
- 484 18. Osama, T.; Razai, M.S.; Majeed, A. Covid-19 vaccine passports: access, equity, and ethics,
- 485 2021.
- 486 19. Memish, Z.A.; Alharthy, A.; Alqahtani, S.A.; Karakitsos, D. COVID-19 air travel restrictions
- 487 and vaccine passports: An ongoing debate. *Travel Medicine and Infectious Disease* **2021**.
- 488 20. Tanner, R.; Flood, C.M. Vaccine Passports Done Equitably. JAMA Health Forum. American
- 489 Medical Association, 2021, Vol. 2, pp. e210972–e210972.
- 490 21. Pavli, A.; Maltezou, H.C. COVID-19 vaccine passport for a safe resumption of travel. *Journal*
- 491 *of Travel Medicine* **2021**.
- 492 22. Drury, J.; Mao, G.; John, A.; Kamal, A.; Rubin, J.; Stott, C.; Vandrevale, T.; Marteau, T.
- 493 Behavioural responses to Covid-19 health certification: A rapid review. *medRxiv* **2021**.
- 494 23. Guidi, S.; Romano, A.; Sotis, C. Depolarizing the COVID-19 Vaccine Passport. *Yale Law Journal*
- 495 *(Forum)* **2021**, SSRN: <https://ssrn.com/abstract=3850152>, <http://dx.doi.org/10.2139/ssrn.3850152>.
- 496 24. Romano, A.; Sotis, C.; Dominioni, G.; Guidi, S. The scale of COVID-19 graphs affects
- 497 understanding, attitudes, and policy preferences. *Health economics* **2020**, 29, 1482–1494.
- 498 25. Pennycook, G.; McPhetres, J.; Zhang, Y.; Lu, J.G.; Rand, D.G. Fighting COVID-19 misinfor-
- 499 mation on social media: Experimental evidence for a scalable accuracy-nudge intervention.
- 500 *Psychological science* **2020**, 31, 770–780.
- 501

26. Kim, J.; Giroux, M.; Gonzalez-Jimenez, H.; Jang, S.; Kim, S.; Park, J.; Kim, J.E.; Lee, J.C.; Choi, Y.K. Nudging to reduce the perceived threat of Coronavirus and stockpiling intention. *Journal of Advertising* **2020**, pp. 1–15.
27. Milkman, K.L.; Patel, M.S.; Gandhi, L.; Graci, H.N.; Gromet, D.M.; Ho, H.; Kay, J.S.; Lee, T.W.; Akinola, M.; Beshears, J.; others. A megastudy of text-based nudges encouraging patients to get vaccinated at an upcoming doctor's appointment. *Proceedings of the National Academy of Sciences* **2021**, 118.
28. Ceylan, M.; Hayran, C. Message Framing Effects on Individuals' Social Distancing and Helping Behavior During the COVID-19 Pandemic. *Frontiers in psychology* **2021**, 12, 663.
29. Samuelson, W.; Zeckhauser, R. Status quo bias in decision making. *Journal of risk and uncertainty* **1988**, 1, 7–59.
30. Allcott, H. Social norms and energy conservation. *Journal of public Economics* **2011**, 95, 1082–1095.
31. Ayres, I.; Raseman, S.; Shih, A. Evidence from two large field experiments that peer comparison feedback can reduce residential energy usage. *The Journal of Law, Economics, and Organization* **2013**, 29, 992–1022.
32. Rothschild, D.; Malhotra, N. Are public opinion polls self-fulfilling prophecies? *Research & Politics* **2014**, 1, 2053168014547667.
33. Fiske, S.T. *Social beings: Core motives in social psychology*; John Wiley & Sons, 2018.
34. Deutsch, M.; Gerard, H.B. A study of normative and informational social influences upon individual judgment. *The journal of abnormal and social psychology* **1955**, 51, 629.
35. Sunstein, C.R. The ethics of nudging. *Yale J. on Reg.* **2015**, 32, 413.
36. Loewenstein, G.; Chater, N. Putting nudges in perspective. *Behavioural Public Policy* **2017**, 1, 26.
37. Romano, A.; Sotis, C. Odi et Amo: A nudge to reduce the consumption of single-use carrier bags. *Waste Management* **2021**, 120, 382–391.
38. Crandall, C.S.; Eidelman, S.; Skitka, L.J.; Morgan, G.S. Status quo framing increases support for torture. *Social Influence* **2009**, 4, 1–10.
39. Lang, C.; Weir, M.; Pearson-Merkowitz, S. Status quo bias and public policy: evidence in the context of carbon mitigation. *Environmental Research Letters* **2021**, 16, 054076.
40. Eidelman, S.; Crandall, C.S. Bias in favor of the status quo. *Social and Personality Psychology Compass* **2012**, 6, 270–281.
41. Hardmeier, S. The effects of published polls on citizens. *The SAGE handbook of public opinion research* **2008**, pp. 504–513.
42. Barnfield, M. Think twice before jumping on the bandwagon: Clarifying concepts in research on the bandwagon effect. *Political Studies Review* **2020**, 18, 553–574.
43. Drews, S.; Exadaktylos, F.; van den Bergh, J.C. Assessing synergy of incentives and nudges in the energy policy mix. *Energy Policy* **2020**, 144, 111605.
44. Brandon, A.; List, J.A.; Metcalfe, R.D.; Price, M.K.; Rundhammer, F. Testing for crowd out in social nudges: Evidence from a natural field experiment in the market for electricity. *Proceedings of the National Academy of Sciences* **2019**, 116, 5293–5298.
45. Hilton, D.; Charalambides, L.; Demarque, C.; Waroquier, L.; Raux, C. A tax can nudge: The impact of an environmentally motivated bonus/malus fiscal system on transport preferences. *Journal of Economic Psychology* **2014**, 42, 17–27.
46. Schall, D.L.; Wolf, M.; Mohnen, A. Do effects of theoretical training and rewards for energy-efficient behavior persist over time and interact? A natural field experiment on eco-driving in a company fleet. *Energy Policy* **2016**, 97, 291–300.
47. Panzone, L.A.; Ulph, A.; Zizzo, D.J.; Hilton, D.; Clear, A. The impact of environmental recall and carbon taxation on the carbon footprint of supermarket shopping. *Journal of Environmental Economics and Management* **2018**.
48. Van der Werff, E., e.a. I am what I am, by looking past the present: the influence of biospheric values and past behavior on environmental self-identity. *Environment and Behavior* **2013**, 42, 1–32.
49. Cialdini, R.B, e.a. Preference for consistency: the development of a valid measure and the discovery of surprising behavioral implications. *Journal of personality and social psychology* **1995**, 42, 318–328.
50. Klockner, C.A., e.a. Positive and negative spillover effects from electric car purchase to car use. *Transportation Research D: Transport and Environment* **2013**, 42, 32–38.

- 560 51. Garrett, P.M.; White, J.P.; Lewandowsky, S.; Kashima, Y.; Perfors, A.; Little, D.R.; Geard, N.;
561 Mitchell, L.; Tomko, M.; Dennis, S. The acceptability and uptake of smartphone tracking for
562 COVID-19 in Australia. *Plos one* **2021**, *16*, e0244827.
- 563 52.
- 564 53. WorldBank. Population, female (% of total population) - United States. Online at <https://data.worldbank.org/indicator/SP.POP.TOTL.FE.ZS?locations=US>, 2019.
- 565 54. Messaggero. Mario Draghi: «Italia avrà il suo Green pass prima di quello europeo». Online
566 at https://www.ilmessaggero.it/video/politica/draghi_italia_avra_green_pass_prima_di_europeo-5974701.html, 2021.
- 567 55. MarketingDive. 6-second TV ads command more attention per second than traditional
568 spots. Online at <https://www.marketingdive.com/news/6-second-tv-ads-command-more-attention-per-second-than-traditional-spots/525770/>, 2018.
- 569 56. Mullinix, K.J.; Leeper, T.J.; Druckman, J.N.; Freese, J. The generalizability of survey experi-
570 ments. *Journal of Experimental Political Science* **2015**, *2*, 109–138.
- 571
- 572
- 573