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Brief report

Social media charity campaigns and pro-social behaviour. Evidence from the Ice Bucket Challenge☆

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ABSTRACT

Social media use plays an important role in shaping individuals' social attitudes and economic behaviours. One of the first well-known examples of social media campaigns is the *Ice Bucket Challenge* (IBC), a charity campaign that went viral on social media networks in August 2014, aiming to collect money for research on amyotrophic lateral sclerosis (ALS). We rely on UK longitudinal data to investigate the causal impact of the *Ice Bucket Challenge* on pro-social behaviours. In detail, this study shows that having been exposed to the IBC increases the probability of donating money, and it also increases the amount of money donated among those who donate at most £100. We also find that exposure to the IBC has increased the probability of volunteering and the level of interpersonal trust. However, all these results, except for the result on the intensive margins of donations, are of short duration and are limited to less than one year. This supports the prevalent consensus that social media campaigns may have only short-term effects.

1. Introduction

Research shows that social media platforms have several impacts on social activities, such as the development of collective actions (Enikolopov, Makarin, & Petrova, 2020), the expansion of social movements (Levy & Mattsson, 2020), and the strengthening of anti-minority sentiments (Müller & Schwarz, 2020), among many others. In the last few years, social media platforms have also been used to encourage pro-social behaviours through the launch of awareness or charity campaigns worldwide (Adena & Huck, 2020; Perroni et al., 2022; Van der Linden, 2017). One such example is the *Ice Bucket Challenge* (IBC). This involved posting a video on social media showing individuals pouring iced water over themselves and challenging other individuals to do the same. The goal was to donate funds raised for the Amyotrophic Lateral Sclerosis (ALS) association. The IBC went viral during the summer of 2014, with the participation of many celebrities, and collected millions of dollars worldwide to continue research into ALS (Sohn, 2017; Vaidya, 2014).

Although social media may trigger key determinants of pro-social behaviour, such as peer pressure and social image concerns (Bénabou & Tirole, 2006; Enikolopov, Makarin, Petrova, & Polishchuk, 2020), the determinants and the consequences of social media charity campaigns are still debated and largely unknown (Agerström et al., 2016; Lacetera, 2016; Lacetera et al., 2016; Van der Linden, 2017). New research shows that online fundraising through social media (Facebook) increases donations (Adena & Hager, 2022), however, the effects of social media charity campaigns on other forms of pro-social behaviours have received little attention. In this paper, we try to fill this gap by investigating the effects of the IBC on charitable giving, volunteering, and interpersonal trust also discussing the duration of such effects.

To identify the effect of the IBC, we draw on panel data from the UK Household Longitudinal Study (UK-HLS). Since we cannot observe individuals who actually participated in the social media charity campaign, we use an intention-to-treat approach, defining as treated those individuals with a social network account in the relevant period. We then exploit the interactions between this variable and a set of time dummy variables to conduct a study event. We include a broad set of controls to rule out the potentially confounding effect of marital status, age, personal income, education, job status, household size, and region of residence. Most importantly, our data allow us to control for individual fixed effects, so that we get rid of any time-invariant unobservable characteristic that might influence our results, such as altruism, risk aversion, personality traits, and moral values.

Our results suggest that the IBC has increased the probability of donating money to charities, while it has affected the amount of financial donations only among those who donate at most £100. We also find that the IBC increased the probability of participating in volunteering activities and levels of interpersonal trust. The empirical findings suggest that these are mostly short-term effects that expire in less than a year.

Although our data do not allow us to pinpoint all the different aspects related to the IBC, our findings may help to shed light on the effects of a viral social media charity campaign on pro-social behaviours. Recent research shows that people may avoid making a financial donation, even if they are specifically asked to donate (Andreoni et al., 2017; DellaVigna et al., 2012; Lacetera, 2016; Sautua, 2022). We add to this literature by showing the effect of an explicit request to donate through social media.

The economic literature investigates the relationship between time and donating money, finding a positive correlation between the two (Bauer et al., 2013; Cappellari et al., 2011; Dittrich & Mey, 2021; Feldman, 2010; Yeomans & Al-Ubaydli, 2018). We contribute to this debate by showing that exposure to social media charity campaigns increases the probability of donating money and time. Furthermore, we show that social media campaigns increase interpersonal trust, contributing to the ongoing research investigating the relationship between social media usage and interpersonal trust (Antoci et al., 2019; Geraci et al., 2022).

Finally, we relate to the emerging debate on commitment and donation behaviour. Recent research suggests that few people keep the pledge that they have made on social media to donate (Lacetera et al., 2016). Meyer and Tripodi (2021) find similar results in an offline setting. The authors show by means of a field experiment that due to social image concerns, people are more likely to pledge a donation if the pledge is visible to friends or family members. However, the authors show that all the subjects within the experiment in fact renege on their pledge to make a donation. We contribute to this interesting line of research by showing the effects of a social media campaign that implies a pledge to donate money to a specific charity. Although a considerable shortcoming of our study is that we cannot observe whether or not individuals who were challenged with the IBC accepted the challenge (by pledging a donation), we can at least offer an aggregate perspective on how such challenges affect donation behaviour and pro-social behaviour in general.

2. The ice bucket challenge in the UK

The IBC began in the US in July 2014. It soon spread around the globe and went particularly viral in the UK, Ireland, and Canada. Fig. 1 shows the intensity of the Google searches for 'Ice Bucket Challenge' in 2014 worldwide and it appears that the intensity of searches in the UK, Canada, and Ireland was even higher than in the US.

The substantial interest in the IBC in the UK led to a significant increase in donation intentions. According to Google trends, the notable increase in searches for 'Ice Bucket Challenge' in August 2014 goes hand-in-hand with searches related to financial donations, such as 'donation', 'how to donate to charity', and 'how to donate'. Fig. 2 shows the searches of these words from January 2004 to August 2021, and a clear spike in August 2014 can be observed for all terms. Interestingly, the intensity of searches for 'donation' and 'how to donate' in August 2014 is even higher than that in March 2020, when the COVID-19 pandemic took hold, fostering a wave of solidarity toward socio-economic groups most harshly hit by its economic consequences. This qualitative evidence is of particular interest if read in light of the literature showing that online salience is predictive of real donation behaviour (Perroni et al., 2022).

Research suggests that only a small fraction of those who interact with charity campaigns on social media actually end up donating money (Lacetera et al., 2016). However, the Motor Neuron Disease Association (MNDA), which is the association nominated in the IBC in the UK, received more than 750,000 donations, collecting more than £6 million in August 2014 only.[1]

According to the survey run by the Charities Aid Foundation in 2014, 30% of young people and 17% of the total population, which equates to about 10 million people, participated in the IBC and one-in-ten people made a financial donation, resulting in an estimated total amount of donations worth £10 million (CAF, 2015). Overall, thanks to its diffusion, the involvement of celebrities, and peer pressure exerted, the IBC is considered to be the most successful fundraising social media campaign to date (Vaidya, 2014)[2]

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[1] The full statement can be found at this link: https://bit.ly/3ArhBJX.
[2] https://fundraising.co.uk/2019/03/06/why-did-the-ice-bucket-challenge-do-so-well/
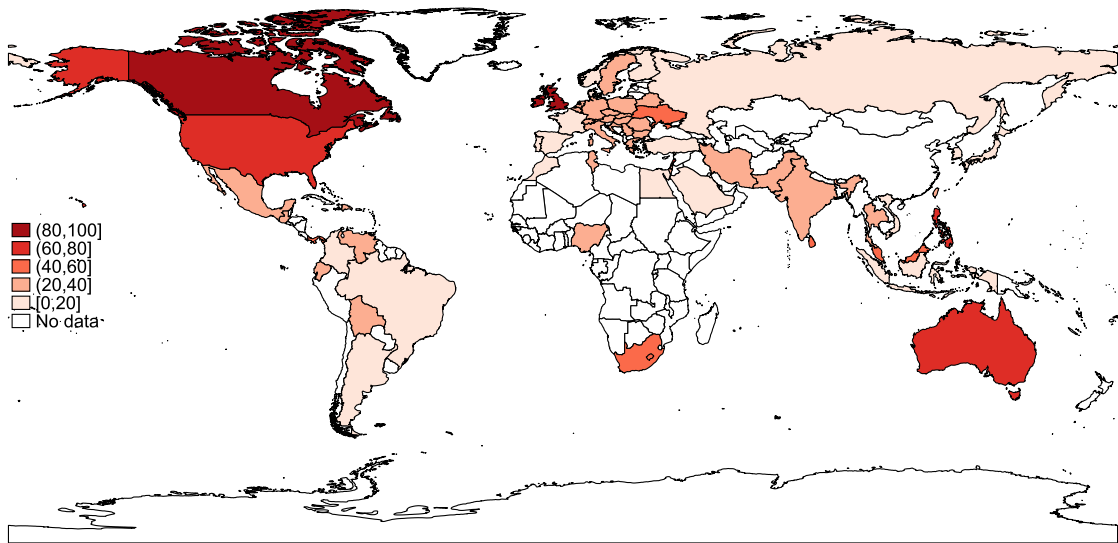
Fig. 1. Google searches for Ice Bucket Challenge.
Notes: The figure shows the relative searches, standardized by country from 0 to 100, for the 'Ice Bucket Challenge' in 2014.
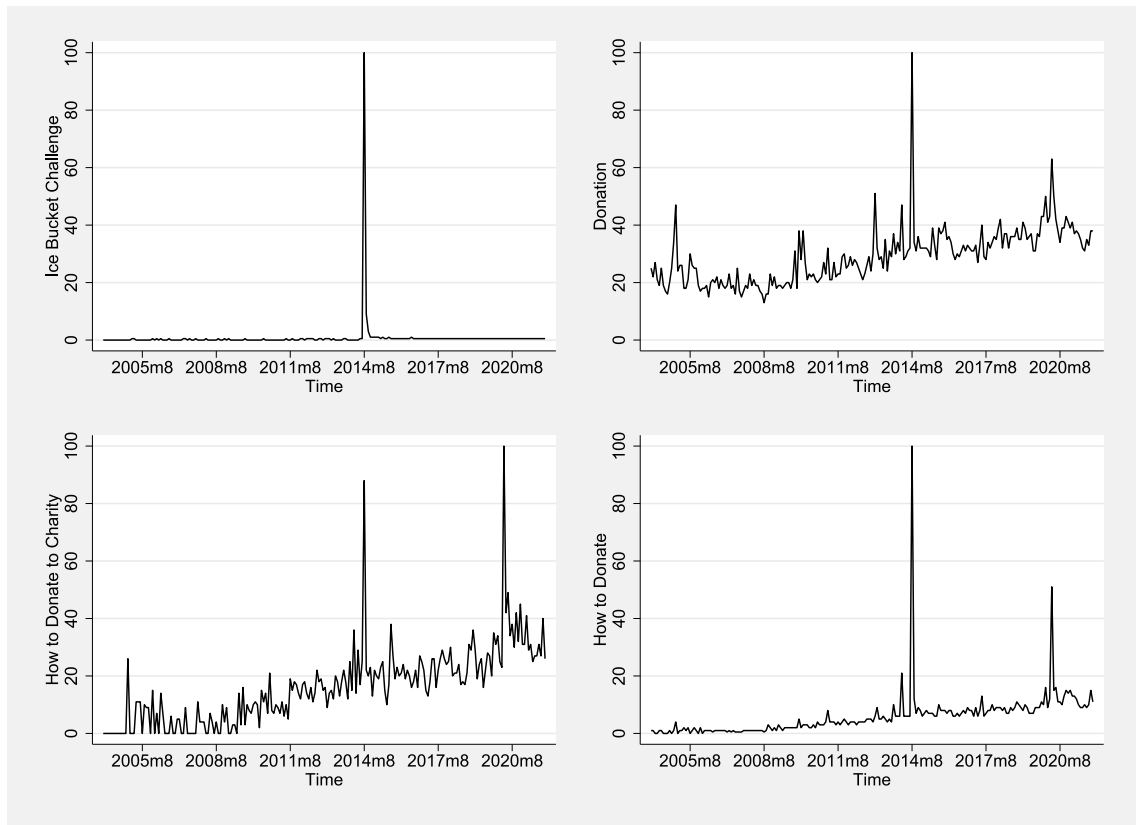
Fig. 2. Google searches for Ice Bucket Challenge and financial donations.
Notes: The figure shows the monthly relative searches, standardized over time from 0 to 100, in the United Kingdom since 2004.

Nevertheless, it is interesting to note that the informative and descriptive reports all focus on the short-term effects of IBC on making a financial donation, without questioning its potential long-term effects and its impact on other pro-social behaviours.

In the following sections, we investigate the possible impact that the IBC had on engaging volunteers and on interpersonal trust, in addition to the impact on donation behaviour.

3. Data and empirical strategy

In this section, we describe the data and the empirical strategy employed to study the effect of the IBC on pro-social behaviour.

3.1. Data, main variables and summary statistics

The survey. We use data from the United Kingdom Household Longitudinal Study (UK-HLS), which is a representative survey of the UK population. The UK-HLS, also known as *Understanding Society*, started in 2009 and interviews around 40,000 households per wave, with each wave covering two to three years (see Table A.2 in Appendix A). The UK-HLS interviews each household member older than 16 and collects information, such as labour force participation, educational level, attitudes, and political orientation, to name a few. Concerning our variables of interest, information on donation behaviour and volunteering activities are collected in waves 2, 4, 6, and 8, while information on interpersonal trust is collected in waves 3 and 6. Finally, information on the use of social networks is collected in waves 3, 6, and 9.

Social networks. Since we cannot observe whether or not individuals in our sample actively participated in the IBC, we follow an intention-to-treat approach. We assume that individuals with a social network account have been exposed to the IBC, while those not belonging to a social network account have not been exposed to the IBC. Hence, our main treatment variable is built around a question asking whether an individual belongs to a social networking website (SNS). The treatment variable takes a value equal to 1 for everyone who declared belonging to a SNS in wave 6 (mainly referring to 2014), and 0 otherwise. As a robustness check, we use the same treatment variable, considering as treated those individuals with a social network account both in wave 3 (mainly referring to 2011) and in wave 6, in order to rule out the possible selection bias of individuals who registered with a social network *because of* the IBC.

Donation behaviour. The main outcome of interest is whether individuals change their behaviour on making a financial donation when exposed to the IBC. The relevant question in the survey is the following: *In the last 12 months, have you donated any money to charities or other organizations?* From answers to this question we create a dummy variable taking a value equal to 1 for those who declare to have donated and 0 otherwise. Those who declare to have donated money are also asked: *Approximately how much money in total have you given to charities or other organizations in the last 12 months?* We use answers to this question to evaluate the possible impact that the IBC had on the intensive margin of donations; that is, on the amount that people actually devolved.

Volunteering. To measure involvement in volunteering activities, we use the following question: *In the last 12 months, have you given any unpaid help or worked as a volunteer for any type of local, national or international organization or charity?* Using the answers, we create a dummy variable that equals 1 if the respondents declare to have been involved in volunteering, and 0 otherwise.

Interpersonal trust. The survey asks individuals if they agree with a series of statements on a scale from 1 to 5. We use answers to the following statement: *People in this neighbourhood can be trusted.* We proxy interpersonal trust with answers to this statement and generate a 5-point Likert scale variable where 1 corresponds to 'strongly disagree' and 5 to 'strongly agree'.

Descriptive statistics. The descriptive statistics of our sample can be found in Table 1. After the data cleaning process, our sample is composed of 30,401 individuals,[3] each one interviewed on average 3.3 times, for a total of 100,063 observations. On average, individuals in our sample are 49 years old, and 56% of the sample are female. Around 72% of the sample respondents declare to have donated money, while those who are involved in volunteering activities are at 20%. Around 56% of individuals in the sample have a social network account.

3.2. Empirical strategy

In order to test whether the IBC has had a causal impact on the outcomes described above, we implement an event study estimation strategy using an intention-to-treat (ITT) approach. In a nutshell, we test whether individuals belonging to either of the two groups (*potentially* exposed to the IBC or not, as defined in the previous section) experience different outcomes during and immediately after the IBC in the summer of 2014. Such methodology relies on the assumption that there are parallel trends between the two groups; that is, pro-social behaviours differ among the two groups *only* because of the potential exposure to the IBC. The baseline model is as follows:

$$Y_{irt} = \alpha + \beta \left(T_t \times E_{ir14} \right) + \gamma X_{irt} + T_t + \eta_r + \theta_i + \varepsilon_{irt} \tag{1}$$

where Y_{irt} is the outcome of interest for individual i living in region r and interviewed at time t. Such an outcome depends on whether or not the individual is potentially exposed to IBC in wave 6 (the treatment variable E_{ir14}) interacted with a set of dummy

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[3] Our treatment variable builds on a question asked in wave 6 on social network sites belonging. Around 37,411 individuals answer this question. We then select individuals who have also answered our dependent and control variables in all the other waves we use (2, 4, 8) ending up with 30,401 individuals.

Table 1
Summary statistics.

Variable	Mean	Std. Dev.	Min.	Max.	N
Female	0.561	0.496	0	1	100063
Age	48.68	17.846	16	102	100063
Monthly Income (gross)	1763.138	1580.683	0	27472.699	100063
Married	0.539	0.498	0	1	100063
University Degree	0.256	0.437	0	1	100063
Employed	0.489	0.5	0	1	100063
Unemployed	0.044	0.206	0	1	100063
Number of Children	0.734	1.077	0	12	100063
SNS Belonging	0.557	0.497	0	1	100063
Amount Donated to Charity	222.081	563.714	1	9999	66520
Charity	0.717	0.45	0	1	100063
Volunteering	0.206	0.405	0	1	100063
Trust in Neighbours	3.71	0.796	1	5	49030

variables identifying the year of the interview (T_t), and on a set of individual time-varying characteristics (X_{irt}) which include age, income, marital status, education, job status, number of children in the household. Finally, T_t, η_r and θ_i are time, region and individual fixed effects, respectively, and ε_{irt} is the usual idiosyncratic error term. Since the question on financial donations refers to the 'last 12 months', individuals exposed to IBC from July 2014 report financial donations in the 'last 12 months' from July 2014 to June 2015. For this reason, we define time t as the 12 months period from July of each year to June of next year rather than according to the calendar year.[4]

The identification strategy relies on the comparison over time among single individuals belonging to two groups: those who are *potentially* exposed to the IBC; and those who are not. The outcomes of these two groups should not be statistically different from each other (when conditional on some controls) before the summer of 2014. However, they are expected to show different values in 2014 and possibly into the next periods, depending on the duration of the effect of IBC. Thanks to the panel nature of our data, we are able to rule out any time-invariant characteristics possibly related to making a financial donation, volunteering, and to the decision of having a social media account or not. The richness of information also allows us to control for a wide set of time-varying characteristics that may affect the propensity to donate time or money, such as income, occupational status, and the number of young children.

The ITT nature of our approach is based on the fact that we do not know whether each individual actively participated in the IBC, but only whether or not they had a social network account in wave 6. As such, the ITT leads to an under-estimation of the results, since not all individuals classified as treated had actually participated in the IBC,[5] and the results presented in the next section should therefore be interpreted as a lower bound. Although we are aware of the limitation of the ITT strategy, this is a common approach when investigating the relationship between internet or social media exposure on behavioural outcomes using observational data. One of the first papers employing an ITT strategy in this literature is Bauernschuster et al. (2014). The authors compare households with high-speed internet (treated group) with households without high-speed internet (control group), by taking advantage of a technological error in the broadband roll-out in Germany. The households who live in an area where high-speed connection arrived earlier are *intended as treated*. A similar approach has since been adopted by several authors in this literature (see e.g. Adema et al., 2022; Geraci et al., 2022; Rotondi et al., 2017).

Finally, for the sake of simplicity, we treat all dependent variables as continuous, interpreting as linear probability models the models that have money donations and volunteering as dependent variables.

4. Results and discussion

The following paragraphs discuss the results of the regression models, described in the previous section and displayed in Table 2 and Fig. 3, in light of the most recent literature. All the reported results remain virtually unchanged when using the alternative, more restrictive, treatment that considers potentially exposed to IBC individuals declaring to belong to a social network account both in wave 6 and in wave 3 (see Table A.1 and Figure A1 in Appendix A). This finding supports the lack of reverse causality from IBC to the creation of a social network profile, but relies on a significantly smaller sample size.[6]

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[4] Since the number of individuals and observation changes over time (see Appendix B for more details), we choose 2010/2011 or 2011/2012 as the baseline period, depending on the dependent variable.

[5] Since we have no information on whether individuals actually participated in the IBC, and the IBC has been covered also by radio and television, we have to understand the possible impact of other traditional media in triggering pro-social behaviour. We do this in Tables A.8 and A.9 in Appendix A. Results appear to suggest no effect of traditional media on pro-social behaviour.

[6] In Appendix A, we also check whether specific socio-demographic groups drive the results. To check for this possibility, we split the sample according to gender and job status as reported in wave 6 (Tables A.7–A.13 in Appendix A). Overall, the results are not driven by specific socio-demographic groups. However, there are possibly mild gender differences: the IBC appears to increase donations among men, while complementary evidence suggests how volunteering and trust are more positively affected among women.

Table 2
Main results.

	Money donation	Amount donated	Amount (≤ £100) donated	Volunteering	Trust in neighbours
2010–2011 × Treated	.	.	.	.	−0.090
	.	.	.	.	(0.058)
2011–2012 × Treated	−0.017	−20.486	0.317	−0.026	.
	(0.016)	(23.248)	(2.157)	(0.013)	.
2012–2013 × Treated	−0.012	−23.568[a]	0.049	0.011	−0.096
	(0.009)	(11.288)	(1.105)	(0.007)	(0.051)
2013–2014 × Treated	0.002	−9.605	−0.028	0.005	−0.086
	(0.015)	(23.068)	(2.108)	(0.013)	(0.057)
2014–2015 × Treated	0.030[b]	−17.290	2.478[a]	0.027[c]	0.044[b]
	(0.009)	(11.811)	(1.151)	(0.008)	(0.015)
2015–2016 × Treated	0.015	−31.310	2.198	0.007	−0.049
	(0.016)	(23.163)	(2.135)	(0.013)	(0.051)
2016–2017 × Treated	−0.009	−9.935	3.647[b]	0.012	.
	(0.010)	(14.576)	(1.320)	(0.009)	.
2017–2018 × Treated	−0.006	−38.113	2.586	0.014	.
	(0.017)	(25.900)	(2.361)	(0.014)	.
Individual fixed effects	Yes	Yes	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes	Yes	Yes
Regional fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	100063	66520	41556	100063	49030
Individuals	30401	26216	21105	30401	24515

[a]p-value < 0.001.
[b]p-value < 0.01.
[c]p-value < 0.05.
Notes: Treatment: having a social network account in wave 6. Standard errors clustered at the individual level are reported in parentheses. A table showing the control variables can be found in Appendix A.

Probability of making a financial donation. The primary result is that individuals potentially exposed to IBC appear to have a significantly greater probability of donating money in the period July 2014–June 2015 with respect to the control group. Specifically, the (potential) exposure to the IBC increased the probability of donating money by 3 percentage points ($p < 0.01$), corresponding to the 4.2% of the mean. A back-of-the-envelope calculation leads to the result where approximately 1,600 people decided to donate because of the IBC in our sample, which equals about 1 million individuals in the UK.[7]

Such results could be interpreted along with the substantial descriptive evidence that charitable associations reported. According to the Charities Aid Foundation (CAF, 2015), one over six people have participated in the IBC, and one over 10 people have donated money, resulting in an estimated total amount of donations worth £10 million. Our results inform this descriptive evidence since, to the best of our knowledge, this is the first attempt to estimate a causal effect of the IBC on charitable giving.

Furthermore, the link between the IBC and the increase in donations can be understood in light of the literature on social media. Some aspects of social media might easily encourage charitable giving. Agerström et al. (2016) suggest that the success of the IBC can be related to its diffusion and the level of public awareness of the challenge. Research shows that an individual's decision to donate is influenced by the amount donated by their peers (Sasaki, 2019; Smith et al., 2015). Enikolopov, Makarin, Petrova, and Polishchuk (2020) show that social media boost peer pressure, which is a key determinant of charitable giving. Meer (2011) finds that individuals are more willing to donate, and to donate more, if they are asked to give from a person belonging to their social ties. These elements were all present in the IBC, since people had to be nominated by their acquaintances on social networks in order to perform the challenge, and the amount of donation was usually fixed at £5.

Amount of donation. When investigating the intensive margin, we find no significant effects. Column 2 of Table 2 shows no effects of the IBC on the amount of donation made among the sub-sample of individuals who actually made the donation. However, results in Column 3 of Table 2 suggest that if we restrict our sample to those who donate at most £100,[8] we find an increase in the amount of donations of around £2.5.[9] Interestingly, this effect also persists in subsequent years, which may suggest that those who donate at most £100 per year may have decided to keep donating to the MNDA or to similar social media charity campaigns.

This finding appears to confirm that social pressure was a driver of the IBC, as the literature shows that social pressure mostly affects small donations (DellaVigna et al., 2012).

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[7] This computation is calculated considering that the effect increased donations by 3 percentage points for the treated individuals and that the treated group is about 55% of the total sample/population.

[8] In Figure A4 in Appendix A, we replicate this estimation at different amounts donated to check the stability of this result. Furthermore, in Figure A5 we bring further evidence showing that light donors who started donating due to the IBC kept donating in the following periods.

[9] The plot of the coefficients for both the main results and the robustness check can be found in Figure A2 in Appendix A.
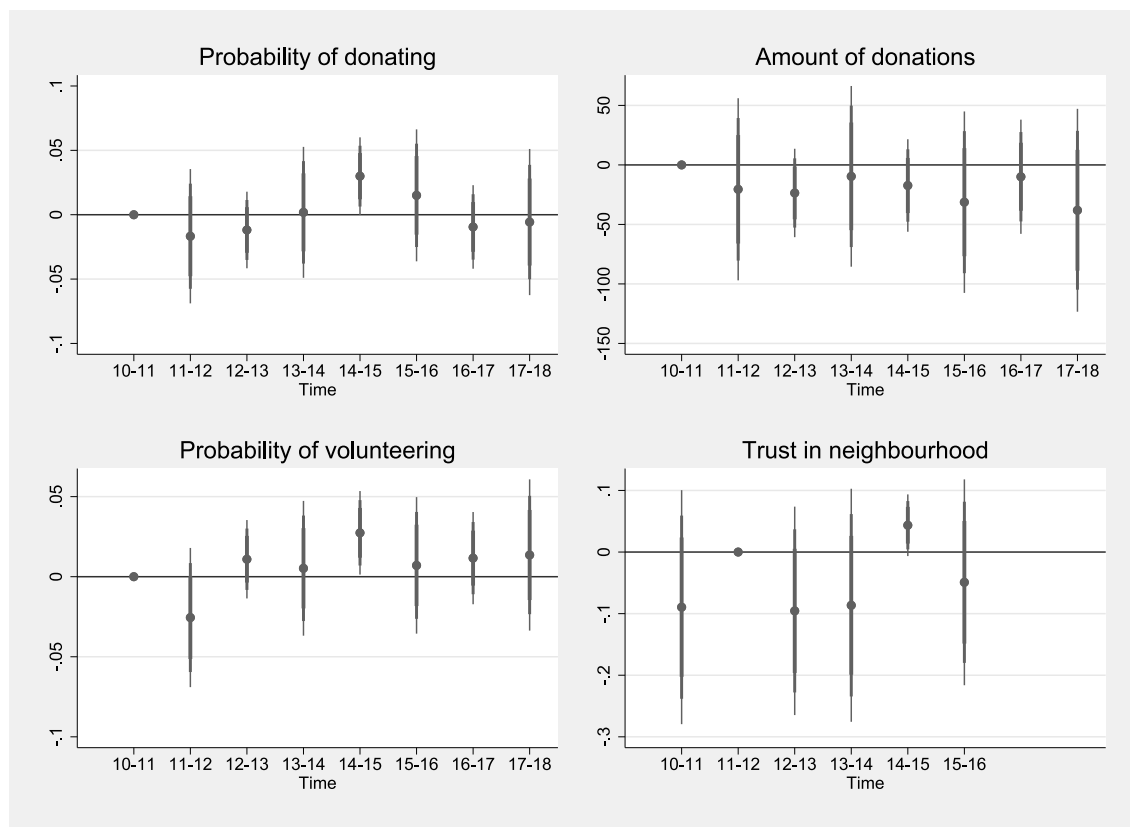
Fig. 3. Main results. Effects of having a social network account in wave 6 on outcomes of interest.
Notes: dots represent the point estimations; line thickness represents 99.9%, 99% and 95% confidence intervals, respectively. The baseline period is July 2010–June 2011 or July 2011–June 2012.

Volunteering. We also find a significant effect of the IBC on volunteering activities: the exposure to the IBC increased the probability of undertaking volunteering activities by 2.7 percentage points ($p < 0.001$), corresponding to the 13% of the mean. A back-of-the-envelope calculation suggests that the IBC encouraged approximately 0.9 million people to join volunteering activities.

These results could be considered in light of the literature suggesting a positive and significant correlation between donations of time and money. Using US survey data, Feldman (2010) finds that a tax deduction on money donations, increases both time and money donations. Such an effect is possibly driven by several mechanisms through which an increase in money donations leads to an increase in time donations; e.g. when people increase money donations information on charitable activities increases, and this acquisition of additional information may encourage people to also become in volunteering activities. Bauer et al. (2013) finds a strong positive correlation between the voluntary giving of time and money across European countries. However, such a correlation is not homogeneous and varies across countries and types of charitable organizations, with religious organizations and states with lower levels of social spending showing the strongest correlation between donations of time and money. By means of a field experiment, Yeomans and Al-Ubaydli (2018) show that when invited to make a donation, long-term volunteers do not decrease their time donation, however, the findings of the study suggest some decline in time donations among newer volunteers. Overall, the authors conclude that they rarely find a substitution between donations of time and money. Given this strong evidence, it is plausible that such complementarity also took place in the IBC. We provide some evidence of this mechanism by regressing volunteering across two different samples: first, those who donated in wave 6; and second, those who did not donate in wave 6. The results shown in Table A.4 in Appendix A suggest that the exposure to the IBC increased volunteering only among those who donated in wave 6.

Interpersonal trust. Finally, we find that the IBC has increased individuals' interpersonal trust by 0.04 units ($p < 0.01$), corresponding to 1% of the mean. This effect relates to the growing literature on the effects of social media on social capital and trust. The effects of social media on social (offline) behaviour it is still under investigation, and the literature has underlined both the positive and negative effects of social media on people's behaviour. Allcott et al. (2020) show through a field experiment that social media

deactivation increases life satisfaction, decreases political polarization, and increases offline socialization. Enikolopov, Makarin, Petrova, and Polishchuk (2020) finds that social media boosts participation in collective actions, such as political protests, and find no effects on political polarization. Studies using UK data find that internet penetration has decreased voter turnout -especially among low-educated voters- as well as civic and political engagement (Gavazza et al., 2019; Geraci et al., 2022). More specifically, recent studies show that sentiments spread in social media affect real-life behaviour. Müller and Schwarz (2020) find that the spread of tweets related to anti-minority sentiments leads to an increase in hate crimes against minorities. Antoci et al. (2019) show through an experiment that when individuals are exposed to a civil environment in social media their levels of interpersonal trust increase. A suggestive explanation of our result[10] on the IBC leading to higher levels of interpersonal trust is that the IBC has had a positive effect on the prevailing sentiment in the social media environment. It may be that the growing interest in social issues slightly modified the environment in social media. As an example, Facebook introduced the possibility of launching individual charity campaigns on the occasion of one's birthday in 2015, shortly after the IBC. Figure A3 in Appendix A shows that in August 2014, searches on Google for 'Facebook donate' and 'how donate Facebook' spiked. This qualitative evidence suggests that social media (Facebook, in this case) during August 2014 may have been widely used also to make visible donations to charity. Consequently, exposure to positive content might have increased the levels of interpersonal trust.

As a final remark, it must be highlighted that the duration of the effects seems to be limited, since none of the coefficients remain statistically different from 0 after the period July 2014-June 2015. The only exception is represented by the sample of people who donate at most £100 a year. Overall, the duration of our effect appears to be consistent with the rather scant literature that has investigated the duration of the effect of online fundraising (Lewis & Reiley, 2014). This is also consistent with the fact that such campaigns usually attract one-off donations from new donors, as in Adena and Hager (2022). Furthermore, the Google trends displayed in Fig. 2 seem to suggest that the donation behaviour related to the IBC and the popularity of the IBC itself has had a limited duration.

5. Conclusion

This paper investigates the effects of a social media charity campaign on pro-social behaviour. We rely on the exceptional diffusion of the IBC to understand the possible impact of such campaigns on pro-social behaviour.

The literature on the effects of social media is growing rapidly and does not always agree on the effects of social media on people's behaviour. This lack of agreement is due both to the fact that the advent of social media is relatively new, and that the use of social media may have contrasting effects when it comes to aspects related to pro-social behaviour or social capital (Allcott et al., 2020; Bauernschuster et al., 2014; Enikolopov, Makarin, Petrova, & Polishchuk, 2020; Geraci et al., 2022; Rotondi et al., 2017). Our results help to shed light on a specific activity carried out on social media; that is charitable giving campaigns.

Using an ITT approach, we find an overall positive effect of the IBC on pro-social attitudes. Specifically, we find that the IBC increased the number of people willing to donate to a charity. It also increased the probability of joining volunteering activities, and the level of interpersonal trust. However, the IBC appears to have only a short-term effect on pro-social behaviour.

In general, our results suggest that social media charity campaigns might have positive effects on pro-social behaviour.

On the other hand, the nature of our data and the focus on a specific campaign leaves many open questions for future research. Specifically, it would be interesting to understand whether or not our results showing social media charitable giving increases pro-social behaviour can be generalized to other campaigns launched on social media. Moreover, further research may more precisely pinpoint the mechanisms that lead people to donate on social media. As an example, it would be interesting to determine whether the popularity of the IBC or the peer pressure induced by the challenge encouraged so many people to donate, and the precise duration of the effects related to the IBC.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

Appendix A. Supplementary data

Supplementary material related to this article can be found online at https://doi.org/10.1016/j.joep.2023.102624.

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[10] Unfortunately, this mechanism is only speculative, since it is not possible to test this channel with the data at hand, and we are not aware of other data that may help us to investigate this mechanism in our framework.

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