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Mackay, Stacey, White, Katherine, & Obst, Patricia (2016) Sign and share: What influences our participation in online microvolunteering. *Cyberpsychology, Behavior, and Social Networking*, *19*(4), pp. 257-263.

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https://doi.org/10.1089/cyber.2015.0282

Sign and share: What influences our participation in online micro-volunteering

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Author Disclosure Statement: No competing financial interests exist.

Abstract

Micro-volunteering is bite-size volunteering with no commitment to repeat and minimum formality, involving short and specific actions. Online micro-volunteering occurs via an internet-connected device. University students' online micro-volunteering decisions were investigated using an extended theory of planned behaviour (TPB) comprising attitudes and normative and control perceptions, with the additional variables of moral norm and group norm. Participants (N = 303) completed the main TPB questionnaire and 1-month follow-up survey (N = 171) assessing engagement in online micro-volunteering. Results generally supported standard and additional TPB constructs predicting intention. Intention predicted behaviour. The findings suggest an important role for attitudes and moral considerations in understanding what influences this increasingly popular form of online activity.

Keywords: Online micro-volunteering, Theory of Planned Behaviour, moral norm, group norm.

Author Disclosure Statement

No competing financial interests exist for the authors.

Micro-volunteering has been defined as "bite-size volunteering with no commitment to repeat and with minimum formality, involving short and specific actions that are quick to start and complete".¹ Online micro-volunteering occurs via an internet-connected device. Examples include smartphone applications ('apps') that allow organisations to crowdsource or use a micro-volunteering platform (e.g., 'Help From Home' [http://helpfromhome.org]) and acts of activism and support like signing an online petition or liking a 'cause' on Facebook. Online micro-volunteering has several advantages such as convenience and flexibility, engagement of a wide range and large number of people, and may act as a gateway to further participation. Further, it offers computer literate populations such as university students (referred to as digital natives²) a quick and easy way to participate in causes.

Online micro-volunteering research is limited. Kim and Lee explored the notion of volunteering through Social Networking Sites (SNSs). They discussed how SNSs provide an avenue for not-for-profit organisations to engage people in online micro-volunteering activities (i.e., liking and sharing causes on social media).³ Using the Theory of Reasoned Action (TRA)⁴, they found that subjective norms (perceived social pressure) was the strongest predictor of intention to volunteer through SNSs, likely due to the unique SNS context where volunteer activity is broadcasted to peers online.

University students have the potential for great volunteer participation.⁵⁻⁶ Online microvolunteering offers a quick and easy form of volunteering for those requiring flexibility. Given that students are usually familiar with technology and value flexibility as part of their lifestyle choices, they are likely to find online micro-volunteering particularly appealing.

A commonly utilised framework to examine people's decision making, including for altruistic behaviours (e.g., civic participation⁷) is Ajzen's Theory of Planned Behaviour (TPB).⁸ Like the TRA, the TPB proposes human behaviour is a function of intention to

perform that behaviour, which is influenced by *attitude* (positive/negative evaluations about performing the behaviour), and *subjective norm* (perceived social pressure to engage/not engage in a behaviour). The TPB includes an additional construct: *perceived behavioural control* (PBC, perceived control over performing the behaviour; also directly predicting behaviour). Ajzen added PBC due to the TRA's limitation in dealing with behaviours not under complete volitional control.⁸ Since there are factors that may hinder or facilitate people's ability to micro-volunteer online (e.g., smart phone possession), utilising a framework that includes a measure of control is warranted.

These three constructs are influenced by underlying beliefs. Attitudes are formed from behavioural beliefs, (consequences, positive or negative, of performing the behaviour); subjective norm from normative beliefs (expectation that important referent individuals/groups will approve/disapprove of performing the behaviour); and PBC from control beliefs (presence or absence of factors that may help/hinder performing the behaviour as opposed to those who do can be targeted in campaigns that encourage behaviour change among non-performers. ⁹ The TPB has been supported in a meta-analytic review of 185 studies examining a range of social and health behaviours, where, on average, the TPB predicted 39% of the variance in intention and 27% of the variance in behaviour. ¹⁰ The percentage of variance explained in people's intentions and behaviours can often be increased by adding theoretically-relevant additional variables to the TPB. ^{8,11}

Subjective norm has been identified as the TPB's weakest predictor of intentions,^{6,10} prompting the exploration of other normative predictors like moral norm. Moral norm gauges personal feelings of moral obligation or responsibility to engage or not engage in a behaviour. ⁸ A meta-analysis based on 27 studies examining various social and health behaviours (e.g., blood donation, smoking) found that moral norm explained, on average, a statistically significant proportion of variance in intention (3%), over and above standard TPB constructs. ¹² Moral norm is a better predictor of behaviours with an obvious moral dimension¹³ like volunteering. Moral norm has predicted variance in volunteering intentions, over and above standard TPB constructs, among university students and older adults.^{6,14}

Group norm is another normative predictor often added to TPB frameworks exploring a range of health and social behaviours (e.g., attending study sessions, binge-drinking).¹⁵⁻¹⁷ Individuals are influenced by the actual behaviour of others, not just by the perceived approval from others (subjective norm). Group norm research is based on social identity and self-categorisation theories, which propose that individuals form their identity from the social groups they identify with.¹⁸⁻¹⁹ Thus, individuals tend to behave in ways that maximise the similarities between themselves and their reference group. Group norm may increase an individual's intention to perform a given behaviour when the behaviour is consistent with the norms of their reference group (e.g., Johnston & White¹⁷). Group norm has predicted variance in older adult volunteering intentions, over and above standard TPB constructs.¹⁴ For online micro-volunteering, a particularly relevant reference group for university students is their friends and peers who are ever present in online contexts.

The Present Study

The present study aims to assess the utility of an extended TPB, with the standard variables of attitude, subjective norm, and PBC, and the extended variables of moral norm and group norm, to predict university students' decisions to engage in online micro-volunteering. Additionally, underlying TPB beliefs will be explored (see Figure 1).

Insert Figure 1 here

Figure 1. Diagram of an Extended Theory of Planned Behaviour for Predicting Engagement in Online Micro-Volunteering.

Hypothesis 1

The standard TPB constructs (attitude, subjective norm, and PBC) will predict intention to engage in online micro-volunteering.

Hypothesis 2

Intention and PBC will predict behaviour.

Hypothesis 3

Based on the findings of Hyde and Knowles⁶ and Warburton and Terry¹⁴, the extended predictors of moral norm and group norm will explain additional significant variance (over and above the standard TPB) in intention.

Hypothesis 4

Underlying TPB beliefs (behavioural, normative, and control) will be explored to identify those beliefs distinguishing between participants who online micro-volunteered versus those who did not.

Method

Procedure

Following ethical approval, a qualitative elicitation study (focus groups) was conducted to establish the salient beliefs of university students for online micro-volunteering consistent with TPB conventions⁸ and a prospective quantitative study examined the TPB variables. Students from multiple universities in Brisbane Australia were recruited via an online research participants system, via email with a link to the online survey, or face-to-face on campus. Four weeks after the main questionnaire, those who consented to be recontacted completed a follow-up questionnaire to assess behaviour over the previous month.

Participants

Focus groups participants (N = 21) were university students recruited via an online research participants system (compensation via course credit) or through snowballing (compensation: AUD \$5 voucher). Participants were aged 17 to 58 years (M = 27) and were 85% female. Main study respondents (N = 303) were university students completing the questionnaire online (n = 283), or by hard copy (n = 20). Demographic data were collected for descriptive purposes. Ages ranged from 17-70 years (M = 25). Participants were mainly female (72%), Caucasian (79%), single (65%), employed (68%), studying full-time (87%), and comprised postgraduates (23.4%) and undergraduates (76.6%) from various university faculties.

Of the students who consented to be recontacted a month after the main questionnaire (n = 252), 67% completed the follow-up questionnaire (n = 171). Sample sizes for both questionnaires were deemed appropriate for the analyses utilised, based on Tabachnick and Fidell's formula for calculating minimum sample size for conducting regression analyses.²⁰ Students who completed both questionnaires received course credit towards a first year psychology subject or were eligible to donate \$AUD1 to their choice of one of three charities. **Measures**

Elicitation study. Initially, focus groups aimed to explore students' understanding of the target behaviour. Once an agreed upon definition was established, subsequent focus groups focused on eliciting students' salient beliefs about the target behaviour.

Main questionnaire. A questionnaire assessed the direct components of the extended TPB. All scales were developed in line with TPB⁸ guidelines with alpha levels above .7 and bivariate correlations above .4, confirming adequate levels of reliability (see Table 2). The questionnaire also included the indirect beliefs of the TPB derived from the elicitation study. Online micro-volunteering was defined in the questionnaire as outlined in Table 1.

Insert Table 1 here

Table 1

Definition of Online Micro-Volunteering from the Main Questionnaire

Past Behaviour. Past behaviour was assessed: "Have you micro-volunteered online in the past month?"; *no/yes*.

Extended TPB measures. Standard TPB items were based on Ajzen.⁶ Unless otherwise stated, questions began with "Thinking about micro-volunteering online in the next month,...", followed by specific questions with 7-point Likert scales. Scales were from 1 *strongly disagree* to 7 *strongly agree* unless stated otherwise.

Intention. Intention was measured using three items (e.g., "I intend to micro-volunteer online in the next month").

Attitude. Three 7-point semantic differential scales (reverse-scored) assessed attitude: "I think micro-volunteering online in the next month would be..."; 1 *worthwhile* to 7 *pointless*; 1 *satisfying* to 7 *not satisfying*; and 1 *favourable* to 7 *unfavourable*.

Subjective Norm. Two items measured subjective norms (e.g., "Important people in my life would think that I should micro-volunteer online).

Perceived Behavioural Control. Two items measured PBC (e.g., "I am confident that I could micro-volunteer online if I wanted to").

Moral Norm. Four items measured moral norm based on Robinson, Masser, White, Hyde, and Terry¹⁶: "I believe I have a moral obligation to micro-volunteer online", "It is in line with my principles micro-volunteer online", "My personal values encourage me to micro-volunteer online", and "I have a responsibility to micro-volunteer online".

Group Norm. One item measured group norm based on Johnston and White¹⁵: "Thinking about your friends and peers, how many of them do you think would microvolunteer online in the next month?"; 1 *none* to 7 *all*.

Indirect TPB Measures. The salient behavioural, normative, and control beliefs assessed in the quantitative study were based on the elicitation study. All belief item (see Table 5) scales were: 1 *extremely unlikely* to 7 *extremely likely*.

Follow-up questionnaire. One month after the initial survey, participants were asked if they had micro-volunteered online in the past month (*no/yes*).

Results

Descriptives

To assess the reliability of the measures before the main hypothesis testing, a confirmatory factor analysis was performed on the measurement model which included the key latent constructs and their respective observed variables. The results of the confirmatory factor analysis showed a good fit ($\chi^2 = 192.28$, df = 64, p < .001; GFI=.92, TFI=.96, CFI=.97). All indicators significantly loaded (all loadings > .77, p < .001) on their corresponding constructs.

Table 2 displays the means, standard deviations, and bivariate correlations of all variables. Checks for any systematic differences between (1) hard copy responses and online responses and (2) the responses of those who completed the survey at time one only versus those who completed the survey at both time points did not reveal any significant differences.

Insert Table 2 here

Table 2

Descriptive Analysis for Online Micro-Volunteering: Means, Standard Deviations, Bivariate Correlations and Scale Reliabilities for Extended TPB Constructs (N = 303)

Main Analyses

Predicting intention. Table 3 displays a hierarchical multiple regression analysis. Attitude, subjective norm, and PBC were entered at step 1 to determine the strength of the standard TPB variables in predicting intention (Hypothesis 1) and moral norm and group norm were entered at step 2 to ascertain whether the additional variables explained variance beyond the standard TPB variables (Hypothesis 3). At the first step, the standard TPB variables accounted for 56.1% (55.7% adjusted) of variance in intention to micro-volunteer online, $R^2 = .561$, F(3, 299) = 127.61, p < .001, with attitude, subjective norm, and PBC as significant predictors. The final step was significant, F(5, 297) = 179.49, p < .001, explaining an extra 19% of variance, $\Delta R^2 = .19$, $\Delta F(2, 297) = 113.41.67$, p < .001. The significant predictors at this step were attitude, PBC, moral norm, and group norm.

Insert Table 3 here

Table 3

Hierarchical Multiple Regression Analysis Predicting Student Intentions to Engage in Online Micro-Volunteering.

Predicting behaviour. A binary hierarchical multiple logistic regression analysis was conducted (Table 4). Intention and PBC were entered at step 1 to determine whether intention and PBC predicted behaviour (Hypothesis 2) and attitude, subjective norm, moral norm, and group norm were entered at step 2 to check if the other standard and extended TPB variables directly predicted behaviour. At the first step of the logistic regression, the model was a significantly better predictor of behaviour than with no predictors added, χ^2 (2, N = 303 = 57.13, p < .001 and explained 38.8% of the variance (Nagelkerke $R^2 = .388$). Hosmer and Lemeshow's test confirmed that the model did not predict outcomes significantly different to observed $\chi^2(8, N = 303) = 13.23$, p = .104. The model correctly classified 74.9% of cases overall, with 81.5% specificity and 63.5% sensitivity, but incorrectly classified 20.7% of yes cases as no (false negative) and 33.3% of no cases as yes (false positive). Only intention was a significant predictor of behaviour at the first step. For every one unit increase in intention, students were 2.6 times more likely to have microvolunteered online in the past month. At the second step of the logistic regression, the overall change in the model since the previous step was not significant, $\chi^2(4, N = 303) =$ 2.09, p = .734, and intention remained as the only significant predictor.

Insert Table 4 here

Table 4

Hierarchical Multiple Logistic Regression Analysis with Standard and Extended TPB Constructs Predicting Student Engagement in Online Micro-Volunteering.

The influence of past behaviour. To check the influence of past behaviour, it was included in separate analyses for both intention and behaviour. Past behaviour emerged as a significant predictor of intention but not behaviour. Importantly, the pattern of results for the extended TPB variables was consistent with that of the original regressions.

Follow-Up Behaviour Information

Of the 171 participants who completed the follow-up questionnaire, 63 had microvolunteered online. On average, those who micro-volunteered online in the past month did so 5.1 times, for 5.58 minutes each time. The majority of tasks completed involved social media activity (e.g., sharing a cause on Facebook) and signing online petitions. Participants microvolunteered mostly for community service agencies (e.g., supporting vulnerable groups) and environmental agencies.

MANOVA Results for Online Micro-Volunteering Beliefs

Four exploratory one-way between groups MANOVAs were conducted to identify differences in behavioural, normative, and control beliefs for those who did and did not micro-volunteer online in the past month as reported at follow-up (Hypothesis 4). Behaviour was entered as the independent variable and belief sets as the dependent variables. Significant effects were found between volunteers and non-volunteers for behavioural beliefs, $\lambda = .89$, F(4, 166) = 4.86, p = .001, partial $\eta^2 = .12$; normative beliefs, $\lambda = -.90, F(6, 123) = 2.31, p = .038$, partial $\eta^2 = .10$; control beliefs (assist), $\lambda = .89, F(2, 168) = 10.25, p < .001$, partial $\eta^2 = .11$; and control beliefs (prevent), $\lambda = .95, F(2, 168) = 4.22, p = .016$, partial $\eta^2 = .05$. Bonferroni adjusted univariate tests for belief items (see Table 5) revealed that volunteers and non-volunteers significantly differed on a number of beliefs.

Insert Table 5 here

Table 5

Comparison of Participants who Online Micro-Volunteered versus those who did not on Behavioural, Normative, and Control Beliefs

Discussion

This study applied an extended TPB with the additional predictors of moral norm and group norm to predict university student engagement in online micro-volunteering. The standard TPB variables explained 56.1% of variance in intentions, above the average (39%) reported in Armitage and Conner's meta-analysis.¹⁰ All standard TPB variables were significant predictors of intention, consistent with Hypothesis 1. In partial support of Hypothesis 2, intention significantly predicted behaviour. Intention and PBC as a step explained 38.8% of the variance in online micro-volunteering behaviour, a percentage greater than the average reported (27%) in prospective studies.¹⁰ Hypothesis 2 was not fully supported as PBC did not significantly predict behaviour, suggesting that performing the behaviour may have been considered within the students' control.

Hypothesis 3 was supported as the extended TPB variables explained an additional significant proportion of variance in students' intentions to engage in online micro-volunteering, over and above the standard TPB variables. Subjective norm was only a significant predictor of intention in the first step, suggesting that it had shared variance with the other normative predictors (moral norm and group norm.). This finding aligns with previous TPB studies that have identified subjective norm as the weakest predictor of intentions in the TPB^{6, 10} and supports the predictive ability of other conceptualisations of norms within the TPB.^{12,22} This finding, however, contradicts Kim and Lee's result where subjective norm was the strongest predictor of intention to volunteer through SNSs.² Social pressure was likely less of an influence in the current study due to online micro-volunteering

including actions that may occur outside of the SNSs context (e.g., 'apps' etc). Further, they did not include other norms nor PBC, variables that accounted for a large proportion of variance in this study.

Moral norm was the strongest predictor of intention to engage in online microvolunteering, adding to the literature supporting the predictive ability of moral norm in extended TPB studies for behaviours with a moral undertone.^{6,12-14} The efficacy of group norm as an additional predictor was also established, supporting the role of group norm in attitude-behaviour relations from a social identity and self-categorisation theory perspective¹⁷⁻¹⁹ and offering evidence that friends and peers are an important reference group for online micro-volunteering among university students. Not-for-profit organisations seeking online support can utilise the information from this study. The findings suggest that, for online micro-volunteering intentions, a major influence is a sense of moral obligation. Online micro-volunteering campaigns might advise students that, as responsible citizens, they are obligated to act to assist a particular cause. Specific underlying beliefs could be targeted by not-for-profit organisations in their recruitment and retention strategies. The results of the exploratory belief-based analyses identified behavioural, normative, and control beliefs that distinguished participants who online micro-volunteered versus those who did not (Hypothesis 4). Messages could remind students that online micro-volunteering is a quick and easy way to help (volunteers M = 5.92, non-volunteers M = 4.96), highlight how appeals might align with people's personal values (volunteers M = 5.98, non-volunteers M = 5.04), and make it clear that volunteers will not receive requests for further action unless they consent to (volunteers M = 4.73, non-volunteers M = 5.39). Organisations may also benefit from incorporating a partner's approval into the volunteering process (e.g., suggestions to email/message a partner to let them know of your actions following an online volunteering action (volunteers M = 3.98, non-volunteers M = 2.89).

The current results should be assessed in the context of the limitations inherent in self-reported measures and the female and Caucasian bias of the sample. Overall, the study supported the utility of an extended TPB including moral and group norms in predicting university student engagement in online micro-volunteering and are pertinent for not-for-profit organisations wishing to engage student volunteers in online activities.

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Table 1

Definition of Online Micro-Volunteering from the Main Questionnaire

Online Micro-Volunteering Bite-size volunteering with no commitment to repeat and with minimum formality, involving short and specific actions that are quick to start and complete.

• Micro-volunteering can be completed on-site or online for not-for-profit organisations, however, for the following questions please think of micro-volunteering that is done online only.

Examples include:

- Participating in an online based petition for Amnesty International Australia
- Liking a 'cause' page on Facebook. This **only** includes causes with charitable intentions.
- MySmartEye App: Allows volunteers from anywhere in the world to reply to images posted by visually handicapped individuals. The replies are then converted from text to speech for the visually handicapped person instantaneously.

Table 2

Descriptive Analysis for Online Micro-Volunteering: Means, Standard Deviations, Bivariate Correlations and Scale Reliabilities for Extended TPB

Constructs (N = 303)

	1	2	3	4	5	6	7
1. Intention	-						
2. Attitude	64***	-					
3. Subjective Norm	.57***	.56***	-				
4. PBC	.47***	.22***	.25***	-			
5. Moral Norm	.83***	.67***	.65***	.37***	-		
6. Group Norm	.39***	.20**	.25***	.39***	.29***	-	
7. Behaviour ^c	.53***	.33***	.24***	.25**	.39**	.18*	-
М	4.33	4.74	4.52	5.86	4.31	3.28	1.37
SD	1.70	1.56	1.30	0.99	1.44	1.54	0.48
Scale Reliability	(.96) ^a	(.91) ^a	(.70) ^b	(.57) ^b	(.91) ^a		

Note. *p < .05. **p < .01. ***p < .001; All *p* values are two-tailed.

^aCronbach's alpha for scale reliability; ^bBivariate correlation for scale reliability. $^{c}N = 171$

Table 3

Hierarchical Multiple Regression Analysis Predicting Student Intentions to Engage in Online Micro-Volunteering.

Step	Variable	В	95% CI	SE	β	R^2	ΔR^2	sr ²
1	Attitude	0.48	[.0.38, 0.58]	0.05	.44***	.561***	.561***	.13
	Subjective Norm	0.31	[0.19, 0.43]	0.06	.24***			.04
	PBC	0.52	[0.39, 0.66]	0.07	.31***			.09
2	Attitude	0.18	[0.10, 0.27]	0.04	.17***	.751***	.190***	.01
	Subjective Norm	-0.02	[-0.12, 0.08]	0.05	02			.00
	PBC	0.26	[0.15, 0.37]	0.06	.15***			.02
	Moral Norm	0.75	[0.65, 0.86]	0.05	.64***			.17
	Group Norm	0.13	[0.06, 0.20]	0.04	.12***			.01

Note. **p* < .05. ***p* < .01. ****p* < .001.

23

Table 4

Hierarchical Multiple Logistic Regression Analysis with Standard and Extended TPB Constructs Predicting Student Engagement in Online

Micro-Volunteering.

Step	Variable	В	SE	Wald	р	Exp(B)	95% CI	Nagelkerke R ²	$Model \chi^2$	Hosmer and Lemeshow's χ^2
1	Intention	0.96	0.18	26.89	.000	2.60	[1.81, 3.73]	.388	57.13***	13.23
	PBC	-0.05	0.29	0.03	.861	0.95	[0.54, 1.68]			
2	Intention	1.17	0.27	18.32	.000	3.21	[1.88, 5.47]	.399	2.01	6.87
	PBC	-0.06	0.29	0.04	.852	0.95	[0.53, 1.68]			
	Attitude	0.05	0.19	0.08	.777	1.06	[0.73, 1.53]			
	Subjective Norm	-0.06	0.20	0.08	.777	0.95	[0.64, 1.34]			
	Moral Norm	-0.31	0.27	1.37	.242	0.73	[0.43, 1.24]			
	Group Norm	0.05	0.14	0.12	.732	1.05	[0.80, 1.36]			

Note. Model χ^2 = overall change in the model since the previous step. *p < .05. **p < .01. ***p < .001.

Comparison of Participants who Online Micro-Volunteered versus those who did not on Behavioural, Normative, and Control Beliefs

Dependent Variable	Volunteers	Non-Volunteers	F	Sig.	Partial
	M(SD)	M (SD)			η^2
Behavioural Beliefs:					
1. Would be a quick and easy way to help	5.92 (1.08)	4.96 (1.65)	16.92	.000*	.09
2. Would attract large numbers of volunteers very quickly	5.03 (1.58)	4.61 (1.66)	2.65	.106	.02
3. Would not be a very meaningful form of volunteering	3.41 (1.62)	4.03 (1.74)	5.21	.024	.03
4. Would desensitize me to future online micro-volunteering opportunities	3.24 (1.56)	3.75 (1.45)	4.67	.032	.03
Normative Beliefs:					
1. Partner	3.98 (1.82)	2.89 (1.70)	11.52	.001**	.08
2. Parents	3.67 (1.48)	3.05 (1.69)	4.47	.036	.03
3. Friends	4.13 (1.36)	3.46 (1.56)	5.94	.016	.04
4. Older people	3.54 (1.29)	3.09 (1.56)	2.90	.091	.02
5. Employers/potential employers	3.59 (1.54)	3.30 (1.64)	0.96	.328	.01
6. Charities/not-for-profit organisations	5.57 (1.36)	5.37 (1.73)	0.44	.507	.00
Control Beliefs (Assist)					
1. Alignment of online micro-volunteering causes with my values	5.98 (0.98)	5.04 (1.59)	18.23	.000*	.10
2. Notification of the outcome of my online micro-volunteering efforts	5.33 (1.45)	5.06 (1.54)	1.27	.262	.01
Control Beliefs (Prevent)					
3. Ongoing requests for further action from the organisation	4,73 (1,57)	5.39 (1.39)	17.27	.005*	.05
4. Concerns for my individual privacy	4.95 (1.68)	5.23 (1.65)	3.10	.291	.01
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Note. *p < .0125. (Bonferroni-adjusted alpha level for behavioural and control belief items). **p < .008 (Bonferroni-adjusted alpha level for normative belief items).

List of Figures

Figure 1. Diagram of an Extended Theory of Planned Behaviour for Predicting Engagement in Online Micro-Volunteering

