

Seeking Likes while saving the planet: Extending the Theory of Planned Behaviour to investigate the relationship between climate-related Instagram posts and Pro-Environmental Behaviours

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Abstract

Given the ubiquity of social media and the growing literature on curated self-identity in online posts, a question arises: do Instagram posts reflect actual behaviours? Extending the Theory of Planned Behaviour, this study investigates the relationship between climate change-related posts on Instagram and offline pro-environmental behaviours (PEBs). Specifically, it examines the influence of like-seeking and subjective norms on ‘pro-environmental conspicuous virtue signalling’ (PE CVS), as this study considers pro-environmental posts as a form of CVS. It also explores the influence of PE CVS on PEBs. Findings from a sample of 436 Instagram users show a significant influence of like-seeking and subjective norms on PE CVS, which in turn is positively associated with offline PEBs, in particular with political actions. The findings show a path for those seeking to motivate real world PEBs among those who post about this topic on Instagram.

Keywords: *Theory of Planned Behaviour, Instagram Like-Seeking, Pro-Environmental Behaviours*

Track: *Social Responsibility and Ethics*

1. Introduction

Human behaviour is considered a major contributor to environmental issues such as climate change, pollution, or changes in biodiversity (Stern, 1992). Behaviours that mitigate or exacerbate these outcomes have been discussed under different names. One such term is pro-environmental behaviour (PEB), which incorporates engaging in acts that benefit the natural environment (e.g. recycling), as well as omitting acts that harm the environment (e.g. minimising air travel) (Lange & Dewitte, 2019). The Theory of Planned Behaviour (TPB) (Ajzen, 1988; 1991) has frequently been applied to understand why people engage in PEBs (Yuriev, Dahmen, Paillé, Boiral, & Guillaumie, 2020). However, research has suggested that the explanatory power of the TPB would be increased if it considered self-identity, as there are some behaviours, such as being a ‘green’ consumer, for which self-identity is a determinant of intention (Smith et al., 2007).

With the ubiquity of social media, the concept of the self, and the virtual self-identity has received greater attention (Lee & Borah, 2020). One focus of social media research is on impression management through curated self-presentation (Dumas, Maxwell-Smith, Davis, & Giulietti, 2017; Sheldon & Bryant, 2016). Interestingly, a dissonant relationship between expressions of identity through virtual self-presentation and real world behaviours has been suggested (Wallace, Buil, & de Chernatony, 2017). This idea has been extended to the concept of ‘doing good’, with recent studies exploring conspicuous virtue signalling (CVS) through posting about charities (Wallace, Buil, & de Chernatony, 2020). That nascent research draws on the concept of conspicuous donation behaviour (CDB), defined as “the act of donating to charitable causes via the visible display of charitable merchandise or the public recognition of the donation” (Grace & Griffin, 2009, p. 16). CDB can be motivated by the desire to seek intrinsic benefits (i.e., self-oriented) or to display good behaviour to others (i.e., other-oriented). Just as individuals mentioning charities on social media may receive public recognition, without ever donating in the real world (as revealed by Wallace et al., 2017), we suggest that conspicuous consumers seeking to enhance their online identity may post about climate change on their social network, without engaging in PEBs.

Beyond self-presentation and self-promotion, individuals on social media also seek to gain attention and validation from others via ‘Likes’. As such, research suggests that social media users engage in different behaviours (e.g., uploading pictures to social media or purchasing followers), for the purposes of increasing the number of Likes received for their posts (Dumas et al., 2017).

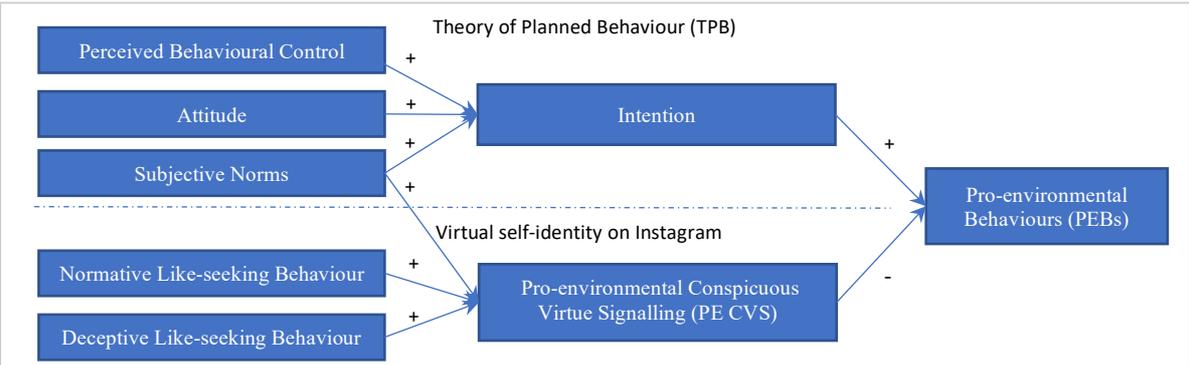
Although previous research has examined self-presentation, social attention and validation on social media, to date, there have been no efforts to explore how these processes might impact on PEBs. Therefore, drawing on studies of self-identity, virtual self-identity on social media, and the TPB, this study asks: When people post about climate change on Instagram, does this reflect real PEBs, or are they simply trying to seek Likes and engage in CVS? To answer this question, this study adopts the term pro-environmental conspicuous virtue signalling (PE CVS), which builds upon the concept of CVS proposed by Wallace et al. (2020) and suggests that individuals post about PEBs cognisant of the opinions of others in response to their post. Thus, this study examines the real world PEBs of those who post about climate change on Instagram and proposes a model that extends the TPB by investigating whether presentation of the self on social media is associated with PEBs. In particular, it explores the relationship between like-seeking behaviours, PE CVS and PEBs.

The study offers several contributions to the literature. First, it provides new insights into the relationship between behavioural intentions and PEBs. Second, it extends the TPB by explaining the relationship between online posts and offline behaviours. Third, it considers how like-seeking behaviours and PE CVS may influence PEBs. The study therefore advances extant literature which suggests that self-interested motives (e.g., financial incentives) could predict PEB (Evans et al., 2013), extending the concept of self-interested behaviour to attain more Likes or popularity on Instagram. Finally, the study broadens understanding of PE CVS on Instagram.

2. Research hypotheses

Figure 1 presents the conceptual framework. It investigates the relationship between TPB and PEBs for those who post about climate change on Instagram. It also considers like-seeking as an antecedent of PE CVS, and a negative relationship between PE CVS and PEBs.

Figure 1. Conceptual framework



A central factor in the TPB is the individual's intention to engage in the behaviour. Behavioural intentions are key to understanding actual behaviour (Liu, Du, Southworth, & Ma, 2017). In the context of PEBs, Yuriev et al. (2020) advocate further research to consider any intention-behaviour gap. In general, they argue, TPB is used to measure the intention to behave in a pro-environmental way, rather than behaviour. Drawing on the TPB, we posit:

H1. Intention to engage in PEBs is positively associated with PEBs.

Behavioural intention is dependent on three direct predictors: perceived behavioural control, attitude, and subjective norms (Ajzen, 1991). Perceived behavioural control relates to "people's perception of the ease or difficulty of performing the behaviour of interest" (Ajzen, 1991, p. 183). Attitude toward a behaviour refers to "the degree to which a person has a favourable or unfavourable evaluation or appraisal of the behaviour in question" (Ajzen, 1991, p. 188). Finally, subjective norms refer to "the perceived social pressure to perform or not to perform the behaviour" (Ajzen, 1991, p. 188). In line with the TPB, we propose:

H2. Perceived behavioural control is positively associated with intention to engage in PEBs.

H3. Positive attitude is positively associated with intention to engage in PEBs.

H4. Subjective norms are positively associated with intention to engage in PEBs.

Extant research has considered the role of identity in predicting PEB. On social media, one can present a virtual self which is different to one's material reality (Schau & Gilly, 2003). Does the self-presentation of a green self on social media translate into PEB?

Recent literature has suggested that users of social media, such as Instagram, may be so focused on validation or attention through Likes, that they engage in manipulative behaviours in order to attain more Likes (Dumas et al., 2017). Therefore, it is possible that Instagram users post about PEB as a form of like-seeking, without engaging in PEB. In their study of Instagram users, Dumas et al. (2017) distinguish between normative like-seeking behaviours (e.g., upload a picture or use a hashtag), which involve actions "widely accepted" among individuals and deceptive like-seeking behaviours, which involve "less normative, and more dishonest actions to secure Instagram likes (e.g., buying likes/followers)" (Dumas et al., 2017, p. 7), and reveal that over 90% of participants engage in behaviours to gain Likes.

Cognisant of this need for validation and attention on social media, a way for individuals to attain Likes is to signal their good deeds to others through online posts (Wallace et al., 2020). Therefore, considering the possibility that individuals may seek to attain Likes through their posts on Instagram (Dumas et al., 2017), and CVS may offer a

means to virtue-signal on social media (Wallace et al., 2020), we suggest that PE CVS may be motivated by like-seeking behaviour. Thus, we hypothesise:

H5. Normative Like-seeking behaviour is positively associated with PE CVS.

H6. Deceptive Like-seeking behaviour is positively associated with PE CVS.

Furthermore, cognisant that subjective norms may have a stronger influence when individuals are concerned about the opinions of others (Dixon, Deline, McComas, Chambliss, & Hoffmann, 2015), we consider whether subjective norms may be associated with individuals posting about climate change on social media, for the purpose of displaying that behaviour to others. Thus, we hypothesise:

H7. Subjective norms are positively associated with PE CVS.

Finally, recent research on CVS behaviour that is focused on highlighting this behaviour to others has revealed a negative relationship between CVS on social media and real world altruistic intentions and behaviour (Wallace et al., 2020). Building on this nascent research, we posit:

H8. PE CVS is negatively associated with PEBs.

3. Method

We recruited a general adult sample of 521 individuals via Amazon's Mechanical Turk (MTurk). MTurk samples are reliable and comparable to traditional samples. MTurk also provides a diverse pool of participants (Buhrmester, Kwang, & Gosling, 2011). To ensure accurate responding, we included an attention check in the questionnaire. Only data from those participants who correctly answered the attention check and completed the survey at a reasonable length of time were used. These checks resulted in 436 participants.

Participants were asked two screening questions: 1) whether they had an Instagram account, accessed in the previous month, and 2) whether they had posted about climate change on Instagram in the past six months. Participants who met these criteria were allowed to complete the survey. 64.7% of respondents were male and the mean age was 33.67 years. Most participants worked full time outside the home (89%), and 54.4% held an Undergraduate Degree or Diploma. 15.4% of participants had up to 100 followers on Instagram and 20.9% had between 101 and 300 followers. 41.3% spent up to one hour on Instagram daily.

Well-established scales were employed to measure the constructs in this study.

TPB constructs were measured using the scales by Ajzen (1991; 2006) on 7-point Likert scales (1 = strongly disagree, 7 = strongly agree), except attitude which was measured with 6 bipolar 7-point scales. Sample items included: “I feel that I am able to make changes to my lifestyle to adopt pro-environment actions” (perceived behavioural control), “Thinking about the pro-environmental behaviours you might make, do you think those actions would be unpleasant/pleasant?” (attitude), “The people in my life whose opinion I value would think that I should take pro-environment actions” (subjective norms), and “I will try to take one or more pro-environment actions in the forthcoming month” (intention).

Instagram like-seeking behaviour was measured using the 11-item scale by Dumas et al. (2017). Items such as “uploaded a picture at a certain time of day” measured normative like-seeking behaviour, and items such as “purchased likes” measured deceptive like-seeking behaviour, using a 5-point scale (1 = never, 5 = nearly always).

PE CVS was measured using 5 items adapted from Grace and Griffin’s (2009) scale for other-oriented CDB. The items were measured on a 7-point Likert scale (1 = strongly agree, 7 = strongly disagree) and included the following: “I like to post about climate change on Instagram so that people know I am a good person”, and “I like to mention climate change on Instagram because it makes me look good”.

Finally, *PEB* was measured using 17 items proposed by Whitmarsh and O’Neill (2010) on a 5-point scale (1 = never, 5 = nearly always). Based on prior research and Whitmarsh and O’Neill’s (2010) work, behaviours from five categories were included: eco-driving/transport actions, eco-shopping and eating, waste behaviour, conservation, and political actions.

4. Results

The model was tested using partial least squares structural equation modeling with SmartPLS 3.0 (Ringle, Wende, & Becker, 2015). The use of PLS is appropriate when the model is complex and includes reflective (i.e., intention, perceived behavioural control, attitude, subjective norms, and PE CVS) and formative (i.e., normative and deceptive like-seeking behaviours and PEB categories) measures (Chin 2010; Hair, Ringle, & Sarstedt, 2011), as in this study.

First, the formative measurement model was assessed. In line with previous research (Bissing-Olson, Fielding, & Iyer, 2016; Hand 2020), the five PEB categories were conceptualised as first-order formative constructs, as there is no reason to expect that all items present strong correlations. Participants could engage in some behaviour, such as sharing a car

journey with someone, but not others such as walking, cycling or taking public transport for short journeys. Following the same reasoning, normative and deceptive like-seeking behaviours were conceptualised as first-order formative constructs. The external validity of the formative measurement model was analysed by assessing the indicators' weights and loadings. The weights of the indicators should ideally be statistically significant. However, Hair, Hollingsworth, Randolph and Chong (2017) argue that indicators with non-significant weights but high loadings should be retained. Following this criterion, two indicators were removed. The model was then re-estimated. External validity was acceptable (Hair et al., 2017). In addition, VIF values were lower than 5, which indicates that the model has no multicollinearity problems (Hair et al., 2011).

The reflective measurement model was then analysed. All factor loadings were above 0.70 and statistically significant at 1%. The results showed that all composite reliability values were above 0.7. Thus, all the constructs were internally consistent. The average variance extracted values were above 0.50, which indicates that the convergent validity criteria was supported. Discriminant validity was also supported since the AVE values were higher than the squared estimated correlations for all pairs of constructs and the HTMT ratios were below 0.85.

To assess the significance of the path coefficients, a bootstrapping procedure with 5000 subsamples was employed. The model explains 57.9% of the intention variance, 47.5% of PE CVS, 36.8% of eco-driving/transport actions, 39.4% of eco-shopping and eating, 29.6% of waste reduction, 20.2% conservation and 39.7% of political actions. The Q² values for the dependent variables were positive, indicating that the model has predictive relevance. Table 1 presents the structural model results with the five PEB categories as dependent variables.

Table 1. Structural model results

	Hypotheses	β	t-value	Supported
H1	Intention → PEB: Eco-driving/transport actions	0.388	7.538***	Yes
	Intention → PEB: Eco-shopping and eating	0.408	6.729***	
	Intention → PEB: Waste reduction	0.360	6.817***	
	Intention → PEB: Conservation	0.357	5.093***	
	Intention → PEB: Political actions	0.218	5.427***	
H2	Perceived behavioural control → Intention	0.093	1.461	No
H3	Attitude → Intention	0.267	4.655***	Yes
H4	Subjective norms → Intention	0.526	9.631***	Yes
H5	Normative like-seeking behaviour → PE CVS	0.320	4.655***	Yes
H6	Deceptive like-seeking behaviour → PE CVS	0.227	4.900***	Yes
H7	Subjective norms → PE CVS	0.317	7.151***	Yes
H8	PE CVS → PEB: Eco-driving/transport actions	0.260	5.063***	No
	PE CVS → PEB: Eco-shopping and eating	0.277	5.432***	
	PE CVS → PEB: Waste reduction	0.193	3.566***	
	PE CVS → PEB: Conservation	0.141	2.147**	
	PE CVS → PEB: Political actions	0.352	8.284***	

Note: ***p<0.01; **p<0.05.

5. Discussion

This study shows that intention to engage in PEB is associated with PEB, supporting the contention that intention leads to behaviour (Liu et al., 2017). Likewise, intention to engage in PEB is influenced by attitude and subjective norms. Extending the TPB, this research seeks to explain the relationship between online posts and offline PEBs. We show that individuals engage in PE CVS, influenced by both subjective norms and like-seeking behaviour. Therefore, results suggest that there is a normative motivation to posting about climate-change on Instagram. Furthermore, contrary to what was expected, findings indicate that respondents' PE CVS is positively associated with real-world PEBs. We assert that the influence of subjective norms on both intention and PE CVS is revealing, as it is likely that individuals feel moral obligation to engage in PEBs, due to current norms. Results also show that, although PE CVS posts on Instagram may be motivated by self-interested motives (Evans et al., 2013) such as seeking Likes for posts (Dumas et al., 2017), these posters nevertheless engage in PEB in the real world.

We therefore broaden understanding of CVS in the online context. Unlike Wallace et al. (2017), who found that other-oriented CVS was not associated with charitable donation intention, we find that PE CVS is positively associated with all forms of PEB. That is, those who post about climate change are likely to engage in real world PEBs also. It is possible that real world PEB is a more conspicuous behaviour than charitable donation, which may explain why our study's findings differ from those of Wallace et al. (2017).

By considering the five PEBs that were investigated in previous research (Whitmarsh & O'Neill), we show that outcomes for PEB are different when considering PE CVS as an antecedent. While TPB indicates stronger relationships between intention and the behaviours eco-driving/transport actions, eco-shopping and eating, and waste reduction, PE CVS is more strongly associated with political actions. While this is a relatively new area of study, we suggest that political actions, such as going on a march, are public, and potentially more self-expressive or conspicuous in nature. It is also possible that those who engage in political actions may subsequently post about their actions on Instagram. Therefore, there may be a virtuous cycle between like-seeking motives, PE CVS on Instagram, engaging in real world PEBs, and then posting about those PEBs on Instagram. Although one could contend that the initial motive for PE CVS was impression management, these actions nevertheless result in PEB. We advocate this area as an interesting avenue for further study. Moreover, managers

seeking to harness Instagram to encourage PEBs could appeal to the virtual signalling value of those behaviours, because PE CVS is positively associated with real world PEB.

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