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# CREATING COMPASSION: HOW VOLUNTEERING WEBSITES ENCOURAGE PROSOCIAL BEHAVIOUR

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## **Abstract**

*Organisations increasingly use websites to promote prosocial behaviour such as volunteering, philanthropy, and activism. However, these websites often fail to encourage prosocial behaviours effectively. To address the lack of relevant research, we develop, then refine, a design model that identifies the user experience factors that create intention to engage in prosocial behaviour on websites. We test an initial model developed from the literature, by interviewing forty participants, each of whom visited and compared six volunteering websites. Our analysis of the participants' user experience reveals eighteen elements that interplay to create intention to engage in prosocial behaviour. Our refined design model comprises ten website features (interaction, factual, anecdotal, external recognition, organisational expression, value suggestion, explanatory content, visual media, written media and, website design), seven perceptions (ease of use, aesthetics, information quality, trust, negative affect, positive affect, and argument strength), and one motivation (egoism). These findings provide novel insights into how to design Information and Communications Technology (ICT) to encourage prosocial behaviour.*

**Keywords:** Website design; Prosocial behaviour; Volunteering; Philanthropy; Persuasion; Design research.

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# 1 Introduction

Social change organizations have accelerated social progress in countless ways (Garrett, 2006): the suffragettes helped to win the vote for women (McQuiston, 1997), the civil rights movement gained greater legal rights for African Americans (Morris, 1986), and the environmental movement catalysed pro-environmental actions and initiatives (McCormick, 1991). However, despite these notable successes, many social issues still remain, and with them, many movements and organisations that are trying to address them (MacAskill, 2015; Singer, 2015).

Social change organizations succeed by collecting, coordinating and directing many individual contributions of attention, time, and money toward specific social problems. Historically, their success has depended on their ability to engage supporters using fundraisers, campaigns, rallies and talks. However, with the proliferation of the internet, the success of social change organizations is increasingly dependent on their ability to harness the unprecedented reach and richness of Information and Communications Technology (ICT) (Garrett, 2006).

To harness ICT, organisations have become increasingly reliant on websites (Bennett, 2009; Faseur & Geuens, 2010; Shier & Handy, 2012). Organisations use websites to advertise their policy, practice, and performance and to attract visitors using search engine listings, content and social media. Websites are also used to encourage and enable visitors to engage in a range of target behaviours, such as sharing on social media, requesting information, making commitments, and engaging in supportive behaviour (Creedon, 2014; Gertler, 2015; Parker, 2015).

Many social change websites target prosocial behaviour, such as volunteering, philanthropy, and activism. Promoting prosocial behaviour can be difficult: often it requires “asking people to donate some resource (e.g., time, money, blood) with

little or no commensurate reward in return” (Bendapudi, Singh, & Bendapudi, 1996, p. 33). Additionally, it may be even more difficult to promote prosocial behaviour online as the use of mediated communication can reduce the social presence and pressure that encourage helping behaviour in face-to-face contexts (Shin, Lee, & Kim, 2015).

Social change websites often fail to encourage prosocial behaviours effectively. They are often outdated and poorly designed (Estes & Nielsen, 2011), and informational rather than persuasive (Horvath, 2011). These limitations can significantly impede their effectiveness at encouraging target behaviour (see Econsultancy, 2011; Young-Powell, 2013). For instance, Estes and Nielsen (2011) found that 13% of participants were unable to determine how to donate on one or more of the non-profit websites they tested. Bosrédon (2012) reported that 47% of their participants abandoned a donation due to a poor user experience. A loss of between 13% to 47% of revenue would be deeply problematic for any organisation. However, the loss of revenue for organisations acting for social good is particularly concerning as these lost dollars may also lead to lost lives (Kirk, Abrahams, & Ractham, 2016).

The failure of social change organisations to use websites effectively may be due, at least in part, to an absence of research that explains how website user experiences encourage prosocial behaviour. For example, Gertler (2015) notes that research on online fundraising seems “particularly un- or underdeveloped in the literature thus far” (p. 64) and several researchers and groups have called for better understanding of how website features promote and encourage prosocial behaviour (e.g., Bosrédon, 2012; Gleasure & Feller, 2016a; Kristin & Abrahams, 2017; National Volunteering Strategy Consultation, 2011).

We use a design science approach to help to address the lack of guidance for how to promote prosocial behaviour through websites. Design science is an appropriate methodology as it “creates and evaluates IT artifacts intended to solve identified organizational problems” (Hevner, March, Park, & Ram, 2004, p. 77), including models and methods for design (Gregor & Hevner, 2013). Our research objective is to develop, then refine, a design model that identifies the user experience factors that create intention to engage in prosocial behaviour on websites. We present this model with the expectation that it will be tested, improved and extended over future research and design iterations.

The paper has the following structure. Section 2 reviews literature on prosocial behaviour and the role of websites in encouraging it. Section 3 outlines the i) design science approach, ii) initial design model, and iii) research method used to demonstrate the model. Section 4 evaluates and refines the initial model, discussing the eighteen factors (ten features, seven perceptions and one motivation) that emerged as important for promoting volunteering through websites, and how these factors appeared to interrelate. Section 5 discusses the findings, contributions to research and practice, the limitations, and the opportunities for future research.

## **2 Literature review**

### ***2.1 Prosocial behaviour***

Prosocial behaviour is “voluntary behaviour primarily aimed at benefitting another” (Nielson, Padilla-Walker, & Holmes, 2017, p. 91). Prosocial behaviour has long interested researchers because of its role in supporting socially beneficial initiatives, such as poverty eradication (Werlin, 2009), disaster relief (Zagefka & James, 2015) and research initiatives of value to society (Glaser, 1992). The largest category of prosocial behaviour is activism, i.e., acting to address social problems (Martin,

Hanson, & Fontaine, 2007). Within the category of activism there are two broad subclasses of prosocial behaviour: philanthropy, which generally refers to offering financial aid to prosocial causes (Schuyt, Bekkers, & Smit, 2010), and volunteering, which refers to investing time in addressing a prosocial cause (e.g. James, 2006). Because all activism involves committing time or money, we hereafter examine it indirectly by focusing on volunteering and philanthropy.

After extensive analysis of relevant literature, Batson suggests that there are four underlying motivations to act prosocially: egoism, altruism, collectivism and principlism (see Batson, 1994; Batson, 2011; Batson, Ahmad, & Stocks, 2011). Egoism is a motivation for increasing one's own well-being (see Batson, 2011; R. Cialdini, Baumann, & Kenrick, 1981; R. Cialdini, Darby, & Vincent, 1973; R. Cialdini et al., 1987). Egoism can motivate prosocial behaviour in counterintuitive ways. For instance, people may act prosocially to resolve negative emotional experiences from seeing another's suffering (Batson et al., 1989; R. Cialdini et al., 1987). It is generally held that egoism drives most, if not all prosocial acts (Simpson & Willer, 2008). However, not all scholars agree with this: Batson and colleagues have performed more than thirty experiments which suggest that egoistical motivations alone cannot fully explain prosocial acts (see Batson et al., 2011). Based on this they suggest three other motivations.

Altruism is a motivation for increasing the welfare of another without expecting a personal benefit for doing so (see Batson, 2011; Piliavin, 1981). The case for altruism is strongest for prosocial acts that cannot easily be linked to an expected benefit for the performer, such as helping geographically distant and unrelated individuals (Simpson & Willer, 2008). Collectivism is a motivation for increasing the welfare of a valued group or collective, without expecting a personal benefit for

doing so (see Batson, 2011; Schwartz, 1990; Van Lange, De Bruin, Otten, & Joireman, 1997). Although there is some evidence for collectivism (Dawes, Van de Kragt, & Orbell, 1990), there have been concerns around how, and whether, it can be disentangled from egoism and altruism (see Batson et al., 2011). Principlism is a motivation for increasing the welfare of another due to a desire to uphold a moral principle, such as justice or utilitarianism (see Batson, 2011; Batson et al., 2011). Currently, there is still little evidence that principlism is a terminal moral goal rather than an instrumental goal as part of achieving self-benefit (Batson et al., 2011).

Many other factors also influence an individual's choice of whether to engage in prosocial behaviour and, if they engage, how much time and money they will invest. For instance, these include personal factors such as the benefactor's emotions (Farley & Stasson, 2003), capacity for empathy (Nicovich, Boller, & Cornwell, 2005) and needs (Wilson, 2012). They also include situational factors such as the visibility of the act (Hardy & Van Vugt, 2006), the type of people it will be visible to (Böhm & Regner, 2013), and the perceived gender (Raihani & Smith, 2015), and identifiability (Small & Loewenstein, 2003), of the beneficiaries.

## ***2.2 Using websites to encourage prosocial behaviour***

Websites are widely used for promoting prosocial behaviours (Arrillaga-Andreessen, 2015; Switzer, 2012), such as activism (Shin et al., 2015), volunteering (Sproull, 2011), and philanthropy (Kristin & Abrahams, 2017; Zagefka & James, 2015).

However the supporting research has been limited: only a small body of research has explored ways in which websites encourage prosocial behaviour. Bennett (2009) highlighted the benefits of matching informative and emotive website features to donors' needs. Shier and Handy (2012) found that donors' perceptions of a website's accessibility and trustworthiness were not linked to their probability of

donation to the organisation. Grimm and Needham (2012) found that website layout and appearance, informational and visual content, and buzzwords and exciting language influenced decisions to volunteer with an organisation. Consequently, we still know relatively little about how to promote prosocial behaviour on websites (e.g., Gleasure & Feller, 2016a, 2016b; Kwampaiboon, Jevtic, & Pyshnyak, 2014; McMahon, Seaman, & Lemley, 2015; Warren et al., 2017).

We can identify at least four causes for this research gap. First, little academic research has examined how to encourage prosocial behaviour - considerably less than has explored how to encourage commercial behaviour (cf. Bendapudi et al., 1996; Rothschild, 1979, 1999). Second, little research has examined how to persuade via newer mediated communication contexts, such as websites (cf. Guadagno & Cialdini, 2005; Guadagno & Cialdini, 2007). Third, research domains that discuss how to promote prosocial behaviour, such as volunteering and philanthropy, generally overlook the role of websites (cf. Penner, Dovidio, Piliavin, & Schroeder, 2005; Wilson, 2012). Fourth, areas that examine websites, generally examine commercial contexts (Zhang, Gutierrez, & Mathieson, 2010).

Nonetheless, several areas of research provide insights that are useful for understanding how to design websites to encourage prosocial behaviour. Behaviour (of any sort, in any context) occurs as the result of an individual being prompted by a trigger (internal or external) to do something that they are sufficiently motivated and capable of doing (Fogg, 2009). The literature on prosocial behaviour therefore helps to explain individuals' motivations to engage in prosocial behaviour (see Batson et al., 2011). Similarly, the Information Systems (IS) literature helps to explain how websites trigger, motivate, and simplify behaviour in commercial contexts (e.g., Geiger, Rosemann, & Felt, 2011; Kane, Alavi, Labianca, & Borgatti, 2014; Moore &

Benbasat, 1991).

However, these insights do not demonstrate how to design websites to encourage prosocial behaviour effectively. The literature on prosocial behaviour rarely examines websites and mediated communication contexts. Accordingly, it fails to explain how to use websites to most effectively encourage prosocial action. The IS research generally examines commercial contexts. However, the best practice for commercial websites is unlikely to also be the best practice for social change websites: there are established differences in what is effective for promoting commercial, as opposed to prosocial, behaviour (Bendapudi et al., 1996; Rothschild, 1979, 1999). For instance, organisations that promote prosocial behaviour are judged differently from organisations promoting commercial behaviour when using the same types of marketing (Greitemeyer & Sagioglou, 2018) and operations (Mathmann, Pohlmeier, Higgins, & Weeks, in press).

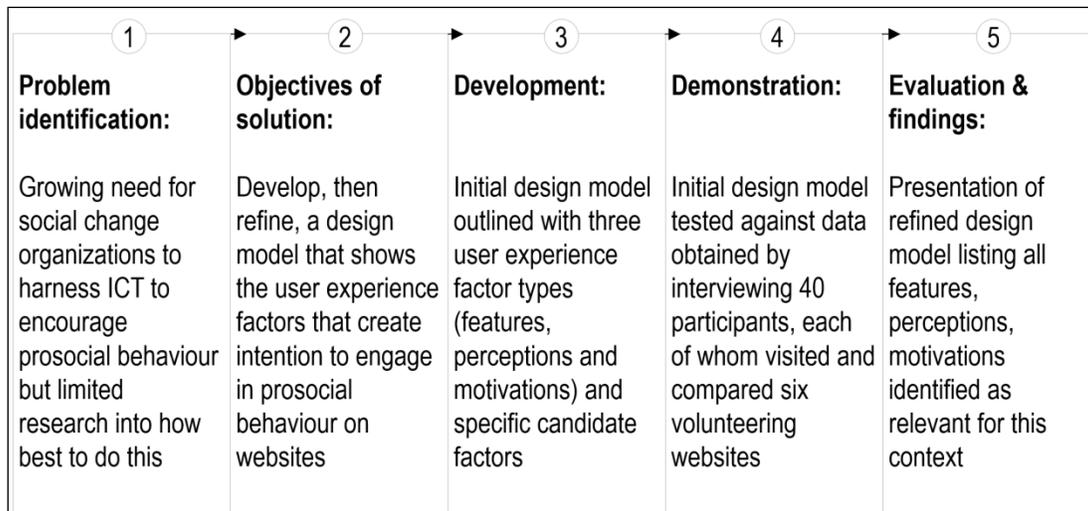
As a result, an effective social change website may need to be designed to create a very different user experience from an effective commercial website. To motivate without providing a material reward, it may need features that leverage, or create, motivational drivers such as empathy (cf. Einolf, 2008), group identity (cf. Penner et al., 2005), or social responsibility (cf. Benabou & Tirole, 2010). To reduce uncertainty related to overseas donation or volunteering, it may require content that increases trust in operations, ethos, ethics, and social vision. To simplify the sustained engagement required to understand all operations and impacts, it may require rich and more detailed information (e.g., visuals) and a design that makes such information easy and rewarding to process. In the absence of strong internal triggers (e.g., habits) to drive the prosocial actions it targets, it may need to focus on providing more calls to action, or triggering smaller related commitments (such as

subscriptions, likes or shares).

### 3 Research approach

#### 3.1 Design science

To help to address the lack of guidance for how to promote prosocial behaviour through websites, we develop, then refine, a design model that identifies the user experience factors that create intention to engage in prosocial behaviour on websites. We base our design science approach on the framework outlined by Peffers, Tuunanen, Rothenberger, and Chatterjee (2007). Phases one to five from Peffers et al. (2007) are described in this paper (see Figure 1). Phase six (communication) is manifest as this paper and other forms of dissemination.



**Fig 1.** Design research stages (adapted from Peffers et al. (2007))

#### 3.2 Development of initial design model

Using a website to promote any form of behaviour is primarily about creating the right user experience. Research suggests that user experience involves at least three factor types: i) [website] features (e.g., images, text, shapes); ii) [user] perceptions (e.g., trust, positive emotion), and; iii) [user] motivations (e.g., what they desire) (e.g., Chung & Zhao, 2004; Hassenzahl & Tractinsky, 2006; Rains &

Karmikel, 2009). We now discuss each factor type in more detail.

A user experience starts when the user interacts with website stimuli (e.g., text and imagery contained on webpages). Drawing on other research (e.g., Lehto & Oinas-Kukkonen, 2010; Nicolaou & McKnight, 2011; Sun, 2012), we refer to website stimuli as website features. For the purposes of this research, we draw from the Oxford Dictionary (2015), to define our factor type of *features* as “distinctive attribute[s] or aspect[s] of the website”.

A user’s interactions with a website’s features leads them to develop impressions of the website. Interaction with the same features can lead to very different impressions across users. For instance, two website users can interact with the same features on a website but differ widely in whether they trust the website or find it usable (e.g., Rains & Karmikel, 2009). As per prior research (e.g., Burner, Menchine, Kubicek, Robles, & Arora, 2014; Lehto, Oinas-Kukkonen, Pätäilä, & Saarelma, 2012) we explore users’ interpretations of websites using the concept of *perceptions*. For the purposes of this research, we draw from the Oxford Dictionary (2015), to define our factor type of perceptions as, “ways in which a website is regarded, understood, or interpreted”.

User perceptions are persuasive where they align with the user’s personal goals. For instance, perceptions of sadness may only increase prosocial behaviour in individuals with particular underlying goals (e.g., a principle of care; Wilhelm & Bekkers, 2010). Drawing on past research we use the concept of *motivations* to examine how personal goals interact with perceptions to influence intention and behaviour. In particular, we draw on Batson et al. (2011), to define our motivations factor type as “goal-directed forces which affect how a website is regarded, understood, or interpreted”.

The interplay of these three factor types (features, perceptions, and motivations) creates a given user experience (e.g., Chung & Zhao, 2004; Haidt, 2001; Rains & Karmikel, 2009). For instance, pre-existing perceptions and motivations guide the user's initial engagement with the website's features. Engagement with the website's features updates the user's perceptions and motivations. The updated perceptions and motivations then guide the user's future engagement with the website. This cycle continues over the duration of the time that the user experiences the website.

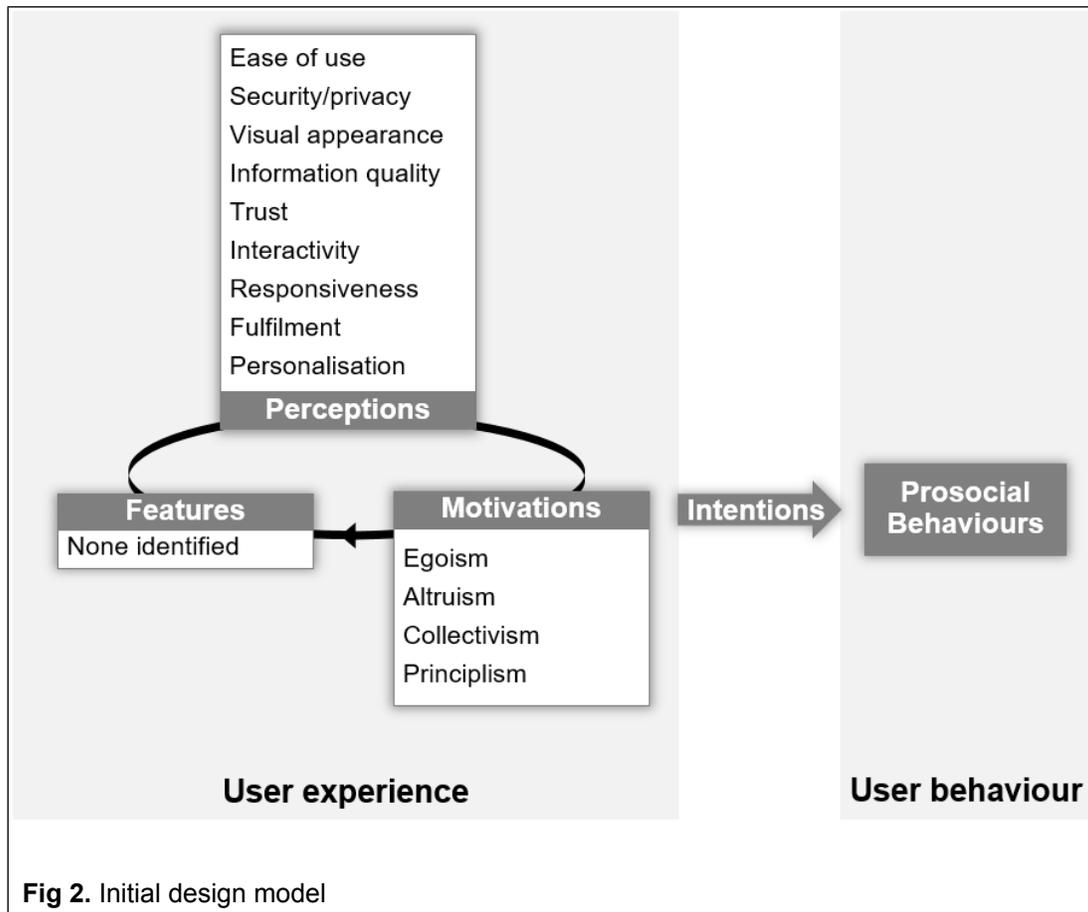
A positive user experience (i.e., interplay of features, perceptions, and motivations) may lead a visitor to form an intention (an "action-directing goal" (Chapman, 2001, p. 815)) to engage in prosocial behaviour. Where the intention is realised, the visitor will engage in *prosocial behaviour* on the website (e.g., by clicking to donate, or to commit to volunteer). Engaging in behaviour on the website will influence the interplay of features, perceptions and motivations and affect user experience. For instance, donating to an organisation may affect a user's motivations by changing their self-identify (e.g., DeJong & Oopik, 1992; Kraut, 1973).

Having outlined our understanding of user experience, we next identify relevant candidate factors for each of the three factor types identified. To identify relevant factors we searched for authoritative lists of features, perceptions, and motivations. For features, we did not identify any candidate factors, perhaps because features are particularly context-specific (cf. Harris, McBride, Ross, & Curtis, 2002; Roitman, 2010). Though we identified some papers that examined website features (e.g., Abdallah & Jaleel, 2014; Bai, Hu, & Jang, 2007; Blake, Neuendorf, & Valdiserri, 2005; Yoon & Occeña, 2015), none of these were relevant for using websites to encourage prosocial behaviour. Given our inability to find candidate features, we

committed to identifying relevant features *de novo* as part of our data analysis process. We identified nine candidate perceptual factors based on Park and Gretzel (2007), who reviewed over 150 studies examining perceptual factors to find the most common perceptual factors that influence online behaviour (see Table 1).

<b>Table 1</b>	
Candidate perceptions from Park and Gretzel (2007)	
<b>Factors</b>	<b>Definitions</b>
Ease of use	Ease of use perceptions involve an individual's assessment of the effort involved in using an artefact (e.g., Venkatesh, 2000). Considerable research shows that ease of use affects user experience during website usage (e.g., Murray & Häubl, 2011; Xie Jimmy, Kerstetter, Mattila, Buzinde, & Morais, 2012).
Security/Privacy	Security/privacy perceptions involve individuals' perceived sense of control or influence over their personal information (e.g., Bélanger & Crossler, 2011). Extensive research shows that security and privacy evaluations influence user experience, particularly users' willingness to input data on the website or perform website-mediated behaviours (e.g., Bélanger & Crossler, 2011; Jiang, Heng, & Choi, 2013).
Visual appearance	Perceptions of visual appearance are assessments of a website's aesthetic appearance (e.g., van der Heijden, 2003). IS research has repeatedly shown that visual attractiveness is important for user experience during website usage (e.g., Sanchez-Franco & Rondan-Cataluña, 2010; Tractinsky, Cokhavi, Kirschenbaum, & Sharfi, 2006).
Information quality	Information quality perceptions are individuals' interpretations of whether a website conveys information that is relevant, understandable, accurate, concise, complete, current, timely, and usable (e.g., Petter, DeLone, & McLean, 2008). Repeated research has shown that information quality influences user experience during website usage (e.g., Setia, Venkatesh, & Joglekar, 2013; Xu, Benbasat, & Cenfetelli, 2013).
Trust	Trust perceptions are the degree to which website interaction creates trust beliefs, such as integrity, benevolence, ability, and predictability about the website and associated entities (e.g., Gefen, Karahanna, & Straub, 2003). Extensive research shows trust influences user experience and that it is weighted heavily when evaluating options for website-mediated behaviour (McKnight & Chervany, 2001).
Interactivity	Interactivity perceptions are assessments of the degree to which two or more communicating parties can synchronously act on each other and the communication medium (e.g., Liu & Shrum, 2002). Research has shown that interactivity perceptions can influence user experience (e.g., Chung & Zhao, 2004; Dennis, Fuller, & Valacich, 2008; Sicilia, Ruiz, & Munuera, 2005).
Responsiveness	Responsiveness perceptions are interpretations of how rapidly and satisfactorily the website and associated entities will react to communication (e.g., Palmer, 2002). Responsiveness has been shown to be an important consideration for user experience, particularly website re-use (e.g., DeLone & McLean, 2003).
Fulfilment	Fulfilment perceptions involve assessments of whether the website has delivered services as expected (e.g., Voss, 2000). Fulfilment perceptions influence user experience through effects on satisfaction and loyalty (e.g., Semeijn, van Riel, van Birgelen, & Streukens, 2005).
Personalisation	Personalisation perceptions refer to assessments of a website's ability to tailor products and experiences to suit users' personal preference (e.g., Dai, Wen, Singh, & Iyer, 2012). Research suggests that personalised websites create better user experiences than non-personalised websites, particularly over multiple visits (e.g., Fan & Poole, 2006; Vodanovich, Sundaram, & Myers, 2010).

We identified four candidate motivational factors from the literature on prosocial motivation (see Batson, 1994; Batson, 2011; Batson et al., 2011). By synthesising our factor types and thirteen candidate factors we create our initial model for demonstration and evaluation (see Figure 2).



**Fig 2.** Initial design model

### 3.3 *Demonstration*

In this section, we describe the process used to demonstrate our initial model. We begin by explaining how we selected the websites and the study participants. We then describe the use of Repertory Grid (RG) interviews to collect data on participants' user experience, as well as the open and axial coding used to categorise this data and evaluate where it matched, and differed, from our initial model.

### **3.3.1 Website selection**

RG interviews involve a process where participants are presented with a set of elements and asked to differentiate between them based on a given criteria. For our set of elements we used six active volunteering websites: websites that primarily target volunteering behaviour (though they may also target other prosocial behaviours). We examined volunteering websites because these generally target more prosocial behaviours than donation websites: many volunteering websites seek philanthropy but most charitable websites do not seek volunteers. Our criteria of interest was how the websites encouraged prosocial behaviour.

In RG interviews, the elements within the set should differ from each other in ways that are relevant to the research objective. Based on our research objective we deliberately selected elements (i.e., volunteering websites) that varied in their use of persuasion techniques. To do this we used a randomisation process to select 100 volunteering websites from ALEXA (the leading website categorisation service; Perez, 2013). We coded these websites for their use of persuasion techniques (see Appendix A). After doing this we chose four that used persuasion techniques frequently and two that rarely used persuasion techniques. We chose more websites that used persuasion techniques frequently as these were arguably more likely to provide examples of how websites encourage prosocial behaviour. The websites chosen are described in Table 2.

<b>Usage</b>	<b>Website</b>	<b>Description</b>
High	<a href="#"><u>GoEco</u></a>	GoEco is a leading eco-tourism company with a selection of over 150 overseas volunteer projects, including work with conservation, wild life sanctuaries, medical institutes and educational institutes.
	<a href="#"><u>Inter-Cultural Youth Exchange UK</u></a>	Inter-Cultural Youth Exchange is an international volunteering organisation that provides opportunities to volunteer in countries throughout Africa, Asia, Europe and Latin America on project such as women's empowerment, human rights and environmental conservation.
	<a href="#"><u>Coral Cay Conservation</u></a>	Coral Cay Conservation is an award winning NGO that specialises in the organisation of community based coral reef and tropical forest volunteer expeditions.
	<a href="#"><u>Volunteers of America</u></a>	Volunteers of America provides volunteering opportunities to help Americans to rebuild their lives and reach their full potential. Most issues are related to seniors, veterans, children, youth, and families, substance abuse, corrections, homelessness, and developmental disabilities.
Low	<a href="#"><u>Volunteers for Rural Development</u></a>	Volunteers for Rural Development is a workcamp service for volunteers who want to carry out environmental and social work on a long and short term basis in Ghana.
	<a href="#"><u>The International DRH Movement</u></a>	The International DRH Movement provides 12-month opportunities to volunteer to train teachers in disadvantaged areas. These opportunities exist across a range of different international locations.

### 3.3.2 Participant selection

We selected participants who were students, regular Internet users (more than 10 hours weekly), and fluent speakers of English. Students are an appropriate demographic to examine as they commonly use websites for volunteering and other forms of prosocial behaviour (Cousins, 2007; Dote, Cramer, Dietz, & Robert Grimm, 2006). It was important that participants were Internet users and English speakers to ensure that they could operate the websites. To reduce self-selection bias (see Heckman, 1979) we used a recruitment message that obscured the type of website examined. Our final sample contained 40 participants. Their average age was 21 (the range was 18-34), 55% were female, and 80% had previously volunteered. Participants reported an average of 29 hours of Internet use per week.

### **3.3.3 Data collection**

We collected data for one month using Repertory Grid (RG) interviews: a cognitive mapping technique where participants are presented with a set of elements and asked to differentiate between them based on a given criteria (Kelly 1955a, 1955b). We used RG interviews because they provide a richer understanding of individuals' cognition than other interview techniques (Curtis, Wells, Lowry, & Higbee, 2008). There are multiple ways to use RG interviews to collect and analyse data (Jankowicz, 2003) and the technique is often used for website evaluation (Tan, Tung, & Xu, 2009). Here, we drew on similar studies (e.g., Moynihan, 1996; Schmidt & Rosenkranz, 2015; W. Watson, Ponthieu, & Doster, 1995) to use the RG process to generate data for content analysis. We used the outcome of this content analysis process to evaluate and refine our initial model. Based on Curtis et al. (2008) we now discuss the four stages of our RG interview process: pre-interview, interview, post-interview, and analysis.

#### *Pre-interview*

It is recommended that participants have prior experience with the elements involved in RG interviews (Lai Lai, Yun, & Tan, 2009; Tan et al., 2009). Accordingly, we required participants to visit each website one day before their interview. When doing this they were required to examine a volunteering opportunity (for at least five minutes) and to answer several questions about this opportunity. We also explained the RG method and important terms to each participant before their interview. When doing this we emphasised that we aimed to understand how the websites differed in their ability to create intention for, and actual participation in, prosocial behaviour.

#### *Interview*

We conducted face-to-face RG interviews that were recorded using audio and typed

notes. During interviews, we used the triadic elicitation process (cf. Curtis et al., 2008) in which participants compare triads of elements (i.e., three volunteering websites) in a consistent predefined order. To help our participants to compare websites, we displayed them side by side on computer screens and allowed participants to interact with them using a mouse and keyboard.

RG interviews aim to elicit *constructs*: bipolar contrasts that explain how participants differentiate elements. For instance, an individual might differentiate job applicants using the construct “*experienced with management vs inexperienced with management*”. To understand how our participants differentiated volunteering websites we used the elicitation question: “With respect to how these websites persuade you to engage in prosocial behaviour, how are two alike, but different from the third?”. The participant would respond along the lines of “these two websites do Y, but this one does X”. This contrast would be recorded as an elicited construct. If the participant’s explanation failed to explain which approach they preferred, we would ask a clarifying question: “Which approach most persuades you to engage in prosocial behaviour?”, and record the response. It should be noted that participants sometimes indicated that the contrasting approaches were persuasive but in different ways. Where relevant we *laddered* elicited constructs by asking follow up questions (Jankowicz, 2003). For instance, we *laddered up* by asking participants why and how an approach effected their intention to engage in prosocial behaviour, and *laddered down* by asking why and how website features underpinned a given approach. We recorded these responses as laddered constructs, above, and below, the elicited construct. Table 3 provides a detailed example of the interview process which shows how we collected and recorded information. The bottom row of the table shows the elicitation question and resultant constructs recorded based on the

participant's answers. The rows above show the laddering questions and the related laddered constructs.

<b>Table 3</b> Interview process example			
<b>Stages</b>	<b>Questions</b>	<b>Constructs</b>	
		<i>Website 1 &amp; 2</i>	<i>Website 3</i>
<i>Laddering up</i>	Why does not knowing as much about what will be involved make you less persuaded to volunteer?	Not sure if it will be nice	
	Why does the website having more relevant information persuade you to engage in prosocial behaviour?		I can see what I will do so I know I will have a good time
	Why does having fewer pictures on the website make you less persuaded to engage in prosocial behaviour?	I don't know as much about what will be involved	
	Why does the website having many pictures persuade you to engage in prosocial behaviour?		Provides more relevant information
<i>Construct elicitation</i>	With respect to how these websites persuade you to engage in prosocial behaviour, how are two alike, but different from the third?"	(-) Have few pictures	(+) Has many pictures

#### *Post-interview*

Our interviews ended when the participant had laddered all constructs, expressed a desire to stop, or began displaying signs of cognitive fatigue. The participant then reviewed and revised the recorded constructs until they were satisfied that this information accurately represented their views. In total we recorded 54 hours of interview data and identified 1702 constructs (954 of which were laddered constructs). On average, each participant provided 42 constructs (ranging from 14 to 81).

#### *Analysis*

To evaluate and refine our initial model, we coded and categorised the identified constructs into relevant analytical categories (i.e., features, perceptions and motivations). We coded and categorised feature factors *de novo* because we had

not identified any candidate features. In contrast, when we coded and categorised the data for perception and motivation factors, we considered the candidate factors that we had previously identified.

Coding and categorisation involved both open and axial coding. Open coding is an “interpretive process by which data are broken down analytically” (Corbin & Strauss, 1990, p. 423). Axial coding is where “categories are related to their subcategories, and these relationships tested against data... along with further development of categories” (Corbin & Strauss, 1990, p. 423). Though open and axial coding are associated with grounded theory, they can be used without adopting the grounded theory method of analysis and with or without guidance from prior theory (e.g., Lings & Lundell, 2005).

Our open coding involved examining each construct sequentially to determine if “feature”, “perception”, or “motivation” open codes should be assigned to it. Table 4 provides a worked example. The left side shows the constructs discussed in our earlier example. The right side shows the “feature”, “perception”, and “motivation” open codes assigned.

<b>Table 4</b> Example of open coding process				
<b>Elicited constructs</b>		<b>Open codes assigned</b>		
<i>Website 1 &amp; 2</i>	<i>Website 3</i>	<i>Feature</i>	<i>Perception</i>	<i>Motivation</i>
Not sure if it will be nice	I can see what I will do so I know I will have a good time			Egoism
I don't know as much about what will be involved	Provides more relevant information		Information quality	
(-) Have few pictures	(+) Has many pictures	Pictures		

Throughout the open coding process, we summarised data using memoing: collecting notes and making diagrams to capture the relationships between data. To ensure that our codes captured the data effectively we used constant comparison:

repeated evaluation of codes against new data, other codes, and potential alternatives. Appendix B provides a comprehensive set of open coding examples.

At the end of the open coding process we had identified 154 feature codes, 7 perception codes and one motivation code. To aggregate this data into more inclusive and informative categories, we conducted axial coding on the *feature open codes*. We did not axial code our *perception* and *motivation open codes* as we had identified relatively few of these.

To axial code our *feature open codes* we repeatedly re-evaluated, reworked and reclassified them into groups at varying levels of abstraction. This process resulted in the emergence of a representative set of ten *axial feature codes*. Table 5 explains our axial coding process. The first column shows examples of feature open codes. The second column shows *the feature axial code* used to categorise them.

<b>Table 5</b> Axial coding example	
<b>Feature open codes</b>	<b>Feature axial codes</b>
Pictures	Visual media
Video	
Changing picture	
Pictures of what you will be doing	
...	
Search	Website design
Contact box on the homepage	
Menu of volunteering options	
Contact information on the homepage	
...	
Discussion of their values	Organisational expression
A discussion why they are unique	
No advertisements on page	
Many available volunteering choices	

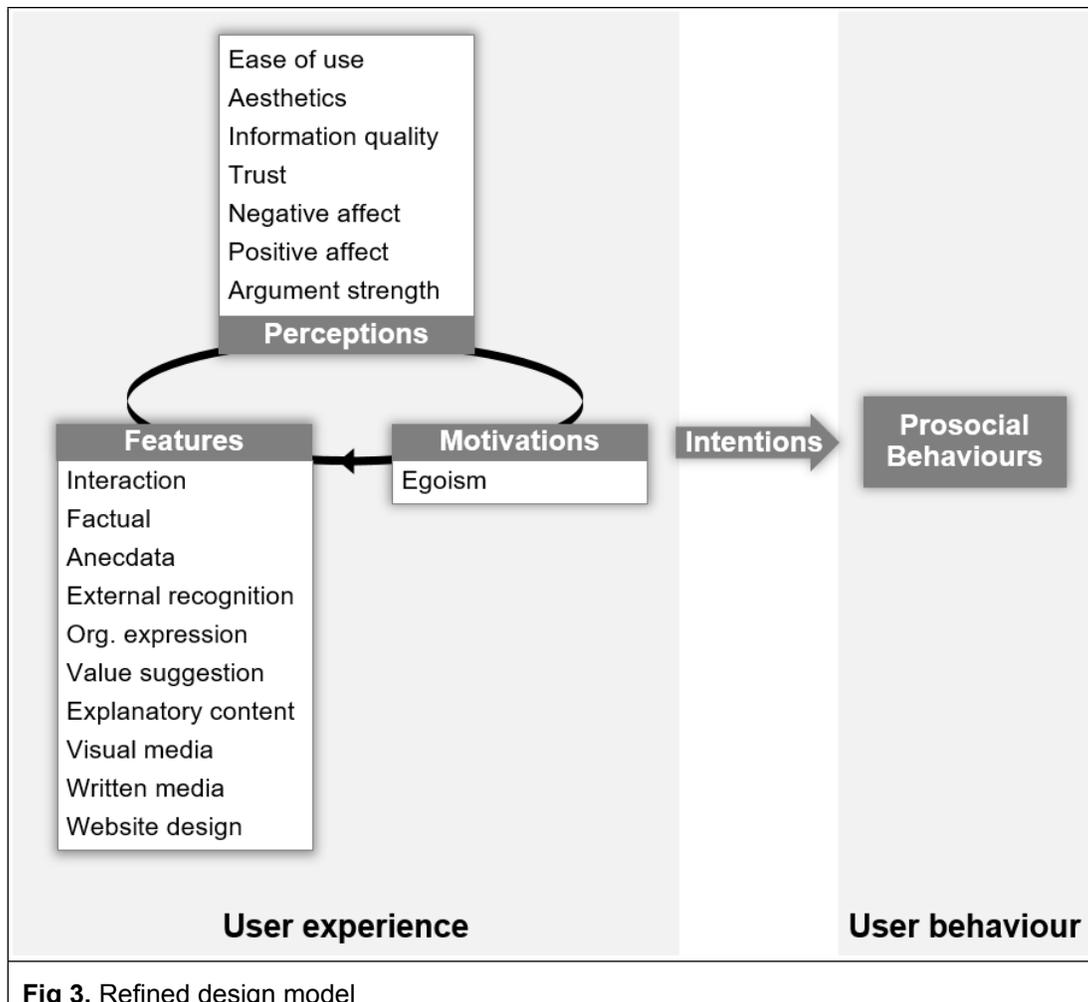
To further synthesise our data, we examined the linkages between the feature, perception, and motivation codes identified. This process identified several linkages that explain how features, perceptions, and motivations interplay to create intention to engage in prosocial behaviour. In Table 6 we provide a worked example of the

analysis process. The left side shows open and axial codes assigned to a set of constructs. The right side shows the linkage pattern inferred from examining these codes: that visual media features were linked to perceptions of information quality and that information quality appeared to be persuasive due to egoism related motivations.

<b>Table 6</b>			
Axial coding example			
<i>Feature</i>	<b>Open Codes</b>		<b>Linkage pattern</b>
	<i>Perception</i>	<i>Motivation</i>	
		<b>Axial Codes</b>	
		Egoism	Websites with more “visual media” lead to perceptions of “information quality”. Information quality is persuasive due to “egoism”.
	Information quality		
Pictures		Visual media	

#### 4 Evaluation and findings

Our analysis identified eighteen user experience factors that influenced intention to engage in prosocial behaviour: ten features, seven perceptions, and one motivation. Figure 3 captures these within our refined design model.



**Fig 3.** Refined design model

Our findings also revealed 28 links between features and perceptions and seven links between perceptions and motivations. Over the remainder of this section we discuss our findings in more detail. We start by discussing the identified features and perceptions and the links between them.

#### **4.1 Features identified**

Table 7 explains the ten features identified and provides some examples of supporting quotes.

<b>Table 7</b> Features identified		
<b>Feature</b>	<b>Explanation</b>	<b>Supporting quote</b>
Interaction	Interaction features enabled users to interact with the organisation	"I've found that with instant chat, I'm much more willing to ask a simple question...because it's so accessible, and I know I can get an answer immediately, I'm more likely to ask" (Chang)
Factual	Factual features enabled users to view factual information	"They have a whole page for statistics and trends. I personally find the statistics very motivating for me" (Jingfei)
Anecdota	Anecdota features enable users to view social, first person, and word of mouth, content	"I'm more likely to trust an individual person that I hear than just the organisation advertising it. I trust what the volunteers say, more than what is written on the site by the company" (Sam)
External recognition	External recognition features show recognition from external entities	"I like the registered charity number because it builds credibility...The government or a larger organisation recognises that they're registered, and they meet criteria." (Pamela)
Organisational expression	Organisational expression features enable users to learn about the organisation	"These are the values of organization... They believe in the same things that I do and that's why I want to be helping them" (Bowen)
Value suggestion	Value suggestion features market volunteering to users.	"This one tells you why their volunteering is worthwhile and why you should get involved. What's important. These two they just tell you about their volunteering, but they don't tell you why this volunteering is so critical" (Ross)
Explanatory content	Explanatory content features explain the process of volunteering to users.	"If an organization is like come with us for three weeks and you will build houses and that's all the information they are telling you, how am I going to do that? It persuades me to volunteer because it provides me more information that gives me peace of mind or something like that along those lines. Gives me security in my decisions." (Ross)
Visual media	Visual media features enable users to view visual media.	"Pictures show me evidence that they are doing something. It shows me the proper setting... Also it shows that it is a legitimate organization." (Flora)
Written media	Written media features enable users to view written media.	"Through text they are conveying to you what they actually do...they've got people's stories about how they've been impacted. It's a lot more persuasive" (Taner)
Website design	Website design features are affordances related to the website's design.	"I'm not going to go overseas to Africa with an organization that can't even put up a decent website kind of thing." (Chen)

There are many ways to display, sequence and structure stimuli on websites, each

of which creates a user experience that optimises for different outcomes. The features identified are website design approaches and groups of stimuli that reliably promoted intention to engage in prosocial behaviour amongst our participants when used effectively. For instance, effective website design simplified, motivated and triggered prosocial behaviour by prioritising, structuring and sequencing information across the website as a whole and on specific webpages. Rich visual media reduced users' uncertainty, and increased their emotional connection to victims. Accessible and salient interaction features enabled and prompted target behaviours such as initiating communication, submitting personal details and subscribing to social media.

#### **4.2    *Perceptions identified***

Table 8 defines the seven perceptions identified and provides examples of supporting quotes.

<b>Table 8</b> Perceptions identified		
<b>Factor</b>	<b>Definition</b>	<b>Example</b>
Ease of use	Ease of use perceptions involve an individual's assessment of the effort involved in using an artefact.	"These two are easier to navigate around to find the information ... [It] persuades me to know these guys actually are interested. They value your help and they actually want you to help and that's why they have made it easy for you to find information." (Pablo)
Aesthetics	Aesthetics perceptions are assessments of a website's aesthetic appearance.	"I find these two a lot more visually appealing ...their color schemes seem a lot more natural ... [and] the pictures are a lot more attractive...it intrigues me and make me want to volunteer more" (Emma)
Information quality	Information quality perceptions are individuals' interpretations of whether a website conveys information that is relevant, understandable, accurate, concise, complete, current, timely, and usable.	"It's a significant decision to go away for an organization for three weeks... I want to know what I'm getting myself into... [the website] persuades me to volunteer because it provides me more information that gives me peace of mind [and] security in my decisions. That I know what I'm getting myself into." (Colin)
Trust	Trust perceptions are the degree to which website interaction creates trust beliefs, such as integrity, benevolence, ability, and predictability about the website and associated entities.	[Asked "Why does it matter when they are endorsed by big companies"] "That's credibility. Like if the Guardian is going to put their weight behind it and say what these guys do is good. I'm going to believe that rather than if their uncle said these guys are good. Yeah, trust." (Elia)
Negative affect	Negative affect perceptions refer to an impression that the website created unpleasurable emotional engagement, such as sadness and guilt.	[Talking about sad pictures and their effect] "It just makes me sympathise, draws on your senses, make you feel sad, makes you want to help. [why does it persuade you to volunteer?] "because it makes you feel guilty!" [why does making you feel guilty persuade you to volunteer?] "it makes you want to do something about that guilt" (Mei)
Positive affect	Positive affect perceptions refer to an impression that the website created pleasurable emotional engagement, such as excitement and happiness.	"[Pictures make me] get excited and motivated...seeing things in action is always more compelling...seeing other people act on something makes me want to act on something." (Andrew)
Argument strength	Argument strength perceptions refer to an impression that the website made arguments that were convincing or valid.	"This one tells you the reason that the organization does what it does. These ones, they just tell you what they do".[When asked: Why is this persuasive?] "... it gives my volunteering a reason." (Patricia)

The seven perceptions in Table 8 are user interpretations of website features that reliably linked to intention to engage in prosocial behaviour. Four of these

perceptions (ease of use, aesthetics, information quality and trust) were previously identified and defined in our literature review. In our analysis we identified three new perceptions. The first, *negative affect*, refers to cases where participants had an impression that the website created unpleasurable emotional engagement, such as sadness and guilt (e.g., D. Watson, Clark, & Tellegen, 1988). The second, *positive affect*, refers to cases where participants had an impression that the website created pleasurable emotional engagement, such as excitement and happiness (e.g., D. Watson et al., 1988). The third, *argument strength*, refers to cases where participants had an impression that the website made arguments that were convincing or valid (e.g., Cacioppo, Petty, & Morris, 1983).

#### **4.3 *Interplay between features and perceptions***

Several uses of features regularly influenced perceptions. Table 9 summarises these interplays. Features are represented as rows and perceptions as columns. For instance, the first row shows that *visual media* features were linked to *trust* perceptions: that when websites' *use visual content to demonstrate work*, it generally creates perceptions of trust. Over the remainder of this section we explain how features influenced perceptions.

<b>Table 9</b> How features create perceptions							
<b>Website Perceptions</b>							
<b>Website Features</b>	<i>Ease of use</i>	<i>Trust</i>	<i>Negative affect</i>	<i>Positive Affect</i>	<i>Aesthetics</i>	<i>Information quality</i>	<i>Argument strength</i>
<i>Visual media</i>		Use visual content to demonstrate work	Use sad visual content	Use cheerful and exciting visual content	Use lots of attractive visual content	Use visuals to convey information	Use visual content to convince
<i>Written media</i>		Present written media well	Tell sad stories about the problem	Write to excite about the opportunity	Use attractive and well-formatted text	Use well-written content to explain	Provide reasons to volunteer
<i>Anecdota</i>		Show that individuals support the organisation	Give individuals' accounts of their problems			Give explanations from individuals	Use arguments from individuals
<i>Factual</i>		Give facts to show the organisation's competence	Give facts to show the severity of the focal issue			Use factual information	Use factual arguments
<i>Website design</i>	Sequence and structure content well	Have a professional design				Prioritise relevant information	
<i>External recognition</i>		Show support from other organisations					
<i>Explanatory content</i>						Explain relevant information extensively	
<i>Value suggestion</i>							Provide reasons to volunteer
<i>Organisational expression</i>		Discuss all aspects of the organisation					
<i>Interaction</i>	Make it easy to interact with the organisation						

#### 4.3.1 Ease of use

The *ease of use* perception was linked to two features: website design and interaction. *Website design* features were linked when websites distributed, displayed, and categorised information effectively. For example, it was a “time saver” for Ross to find the organisation’s values on the homepage. Similarly, a website “made things easier” for Yvette by categorising projects into those that were long-term and short-term. *Interaction* features were linked where websites provided participants with easy ways to immediately communicate with the organisation, such

as prominent contact information, Skype plugins, or instant chat. Participants preferred when they didn't have to go through "too many steps" (Patricia) to make contact. For instance, Felix stated a preference for a website that provides "the enrolment process straight away so I know exactly what to do".

#### **4.3.2 Trust**

The *trust* perception was linked to six features: visual media, written media, anecdotal, factual, website design, external recognition, and organisational expression. *Visual media* features were linked where websites' used visual media (e.g., pictures and video) to allow users to observe where and how the organisation worked. For example, Mei stated that visual media enabled her to see that "the organisation really does what they say they do, [that] the work is real". *Written media* features were linked where websites' written content was well-formatted and well-written with no typos, so that it was easy to read. Participants' believed that written media reflected the quality and trustworthiness of the organisation behind it. Demonstrating this, Felix argued, "if they have taken the time to pick a good font then it seems like you are in good hands". *Anecdotal* features were linked to perceptions of trust where websites enabled users to view supportive content from identifiable individuals such as testimonials, personal blogs, feedback from beneficiaries, and social media content. As Mehdi argued, participants were "more likely to trust an individual than the organisation".

*Factual* features were linked when websites used facts such as achievements and statistics as evidence to support their claims. For instance, as Jingfei argued, most participants felt that when the website "has statistics [it] seems more legitimate and makes you trust them more". *Website design* features were linked where websites had professional designs, for example, an attractive logo, complete pages, a

consistent modern design and no broken links. As Miriam argued, when an organisation is “more professional in how they structure the website, it is more credible, and you can trust that funds won’t be misused”.

*External recognition* features were linked when websites were recognised or endorsed by other organisations, for example, through partnerships, mentions, recommendations, accreditations, or awards. For instance, as Chang stated, when a website “displays sponsors and organisations which support the volunteer organisation [it] increases legitimacy”. *Organisational expression* features were linked where websites provided a lot of information about aspects of an organisation, such as their staff, mission statements, annual reports, values and history. Participants generally trusted organisations in proportion to how much they knew about them. For instance, Elia argued that the “more information you have on the company, the more reliable it feels to you”.

#### **4.3.3 Negative affect**

Four website features (visual media, written media, anecdotal, and factual) were linked to the *negative affect* perception. These all involved websites using different approaches to create negative emotional responses such as guilt, anger, and sadness. *Visual media* features were linked where websites used pictures and videos to create emotional responses, such as when a “gripping emotional video” made Geraldine “feel guilty I am not doing enough”. *Written media* features were linked where websites used “sad” narratives, like telling sad stories that “touch a person’s compassionate side” and make “you want to help” (Lucy).

*Anecdotal* features were linked where websites used personal accounts from individuals to create sadness or guilt. For example, Geraldine argued that showing “personal stories from other people who volunteered...impacts you harder on an

emotional level”. *Factual* features were linked where websites used factual content such as statistics to convey the magnitude of the problem they were addressing. As an example, Geraldine argued that “seeing the numbers makes it hit you harder on an emotional and mental level”.

#### **4.3.4 Positive affect**

The *positive affect* perception was linked to two features on the websites: visual media and written media. *Visual media* features were linked where websites showed images of nice places, and positive volunteering outcomes to create excitement and happiness. As Jeff stated, “seeing all the things you can do, photographs of the people you will help, and pictures of the area makes you more excited and gives you anticipation of your experience”. *Written media* features created positive affect where websites used written content to make volunteering seem exciting and fun. For instance, as Elia argued, while some websites just “let you know what you will be doing rather than hyping it up”, others were more persuasive as they “used a lot of buzzwords [and were] more sensationalist with their descriptions”.

#### **4.3.5 Aesthetics**

Two features (visual media, and written media) were linked to the *aesthetics* perception. *Visual media* features were linked where websites used high-quality images and video, with interesting and attractive content. Demonstrating this, Jeff differentiated between websites by stating “I just think this website is more attractive [because] there are a lot of pictures [of] different things and they actually get me interested”. *Written media* features were linked to the *aesthetics* perception where websites used text that was well structured, written, and presented, for instance with appropriate paragraph breaks, sizing, and font usage. For instance, Yvette argued that a website that used “different fonts and [had] variation in spacing and

positioning of content” was less persuasive than another, as it “doesn't look nice”.

#### **4.3.6 Information quality**

The perception of *information quality* was linked to six features on the website: visual media, written media, anecdotal, factual, website design, and explanatory content. *Visual media* features were linked where visual content was to convey information such as where the volunteer would work, who they would work with, and what they would do. For example, Patricia argued that “images speak louder than words [making it easier to] see a reflection of your own experience”.

*Written media* features were linked to perception of *information quality* when websites used written content to effectively convey information. For instance, this included having “text that is really easy to read” (Amy), and “highlighting key words [and linking] you to pages which say more” (Keerthana). *Anecdotal* features were linked to information quality perceptions when websites provided a lot of information from named individuals. Participants generally valued information from individuals more highly than they valued unattributed information or information attributed to a collective. For instance Mehdi argued that he tended “to trust a first-hand account more”. *Factual* features were linked when a website provided information backed by believable facts and statistics. For example, Rajvir argued that he “wanted to make decisions based on facts” and therefore “needed empirical rational content”.

*Website design* features were linked when websites effectively prioritised relevant information, for instance by showing the latest news, and providing relevant images and information about projects. As an example, Amy differentiated between two websites by stating “This one has [...] a latest news thing which probably provides more up-to-date information of what they are doing now [...] whereas these guys... some of this stuff I don't even know when it is updated”. *Explanatory content* also

played a crucial role in creating perceptions of information quality. Participants appreciated extensive and clear explanations and features such as Frequently Asked Questions (FAQs) and reports. For example, Miriam preferred one organisation over two others as it was “transparent about how they would use your money” and gave her “clearer information about what they are doing”.

#### **4.3.7 Argument strength**

Five features on the website (visual media, written media, anecdotal, factual, website design, and value suggestion) were linked to the *argument strength* perception.

*Visual media* features were linked because websites’ use of visual media was generally perceived as being effective for promoting prosocial behaviour. For instance, Jeff argued: “Having the promotional video is better because it’s probably more motivating [...] you actually [...] see the kids [and] you might have an emotional attachment to them”.

*Written media* features created perceptions of argument strength when website content was written with “a lot of persuasive text; trying to grab the audience’s attention” (Elia). For example, Pamela identified that on certain websites arguments were written “in a more gripping fashion [that] keeps you reading”. *Anecdotal* features were linked where websites used information from individuals to argue for action. For instance, when asked “Why does hearing firsthand experience persuade you?” Taner stated: “I’m more likely to trust an individual person [than] the organisation advertising [the opportunity]”.

*Factual* features were linked when arguments were presented using “real evidence” (Chen), such as statistics, awards and past achievements. *Value suggestion* features were linked when websites gave explicit reasons to volunteer such as a scholarship, opportunity to meet a celebrity, or the suggestion that volunteers would

get rewarded as they would “have a good time” (Jeff) or “feel good from helping” (Amy).

#### **4.4 Motivation identified**

Egoism (i.e., motivation for increasing one's own well-being) was the motivation that was most clearly and consistently linked to intention to engage in prosocial behaviour. Participants generally explained intention to volunteer through consideration of how volunteering would impact their personal welfare. For instance Jose stated “I want to do real volunteering rather than a vacation because that will show me that I'm actually making an impact - the whole point of volunteering. The selfish point is that you want to feel good [by having] an impact on someone's life or an organization's life.” Similarly, several participants expected to benefit from the pleasure of helping others, or by “feeling better” by overcoming the guilt that the website was making them experience.

Several participants hinted at the presence of motivation other than *egoism*. For instance, several stated that they were driven by empathy or responsibility, statements that could reflect altruism or principlism. However, such statements could also be interpreted as being egoistical in nature as they did not specify the ultimate motivation for helping. For example, these statements might have reflected a self-serving intention to act on one's empathy or moral principles to avoid feeling bad. We next outline how egoism interacted with all seven perceptions to create intention to engage in prosocial behaviour.

#### **4.5 Interplay between perceptions and egoism**

*Egoism* interacted with *ease of use* perceptions to create intention to engage in prosocial behaviour because participants associated easy to use websites with professional and reliable organisations that would give them a better volunteering

experience. For example, Ilic argued that when a website was “very user-friendly”, it showed that the organisation was “better organised” and that volunteers were “in safe hands”. *Egoism* interacted with *trust* as participants felt that trustworthy websites and organisations would be more likely to give them the outcomes they desired, such as making an impact, having a good time, and being safe. For instance, as Jeff argued, when there is “no trust”, “you are not sure if it will be a positive experience” as you get the “sense that something will go wrong”.

*Egoism* interacted with *negative affect* perceptions to create intention to engage in prosocial behaviour because participants who experienced unpleasurable emotional engagement, such as sadness and guilt, generally desired to act to relieve these emotions, a behaviour referred to as negative-state relief (e.g., Batson et al., 1989; R. Cialdini et al., 1987). For example, Jingfei argued that when a website had “sad pictures of people [it] makes you want to help [because] you feel guilty [and] want to do something about that guilt”. *Egoism* interacted with *positive affect* as pleasurable emotional engagement gave participants the impression that volunteering was going to be fun. For example, Rajvir claimed that a website using “a lot of positive imagery... makes you feel you will get something back from it; that you will get the intrinsic reward of helping and will feel good about yourself”.

*Egoism* interacted with *aesthetics* perceptions to create intention to engage in prosocial behaviour because participants had the impression that aesthetically pleasing volunteering websites were associated with professional and reliable organisations. For instance, Eithne stated that when a website “looks more professional [you] feel you will be taken care of better, and will be safer”. *Egoism* interacted with *information quality* as participants believed that websites that had high-quality information would allow them to make better decisions, which would

increase the probability that they would have a good volunteering experience. For instance, Miriam argued that when a “website gives you more information about what you will be doing [it is more persuasive as] you know what you are signing up for [and won’t] go there and be let down and disappointed”. *Egoism* interacted with *argument strength* because participants tended to “pick the more personally beneficial option when volunteering” (Emma), for example, the one that best argued why volunteers would have fun, find meaning, and become more employable.

## **5 Discussion and implications**

Social change organisations have become increasingly reliant on using websites to attract resources and enlist support (Garrett, 2006). This involves encouraging prosocial behaviour such as volunteering, philanthropy, and activism (Bennett, 2009; Faseur & Geuens, 2010; Shier & Handy, 2012). However, little research has explored how to use websites to encourage prosocial behaviour. To address this research gap, our research objective was to develop, then refine, a design model that identifies the user experience factors that create intention to engage in prosocial behaviour on websites. Our initial model was developed from existing theory. This model outlined three types of user experience factors (features, perceptions, and motivations) that interplay to lead to intention to engage in prosocial behaviour. Based on reviewing relevant literature we proposed thirteen specific candidate factors for these three factor types (zero features, nine perceptions and four motivations). To demonstrate our model we evaluated how well it captured 40 participants’ user experience across six volunteering websites. After comparing our data against our initial design model, we refined the model to include ten specific website features, seven perceptions, and one motivation. We also identified 35 interactions between specific features, perceptions and motivations. We now

discuss the implications of these findings.

### **5.1     *Implications for practice***

Social change organisations are often resource constrained and there is no doubt that there are cases where they lack the capacity to design and maintain an attractive and effective website. However, there also appear to be many cases where organisations fail to make simple improvements that would be likely to significantly improve the performance of their website (Horvath, 2011).

Our findings strengthen the business case for social change organisations to invest resources in assessing and improving the quality of their website (Estes & Nielsen, 2011; Horvath, 2011). They suggest that organisations with high quality websites are more likely to convince visitors to offer resources and support. The findings show that visitors use the website as a source of information about the social change organisation and also as a means to assess the quality of that organisation – sometimes even relating the acceptability of a font choice to the organisation’s reliability and performance.

Our design model provides practitioners with a high level overview of the factors and processes that are involved when an individual uses a social change website. The specific components of the design model also give practitioners detailed insights into how to optimise their website user experience. The features provide clear design principles, such as the recommendation to use visual media to explain and illustrate the organisation’s work. The perceptions suggest a set of user impressions that social change organisations should target, such as trust and positive affect. The linkages between features and perceptions elaborate on how to use features effectively, for instance, recommending the use of testimonials to increase

perceptions of trust. Our discussion of motivations suggests that prosociality is primarily driven by egoism. This implies that social change organisations should make prosocial acts appear socially, personally, and emotionally rewarding. Our discussion of linkages between perceptions and motivations elaborates on where egoism interacts with user impressions to create prosocial intention. This further explains how and why perceptions drive prosocial behaviour, for instance, why an experience of negative affect can create a desire to help others to relieve that negative experience.

## **5.2     *Implications for research***

Our study has many implications for research. We know relatively little about how to encourage prosocial behaviour - far less than we know about how to convince people to act out of self-interest (cf. Bendapudi et al., 1996; Rothschild, 1979, 1999), and even less about how to promote prosocial behaviour in newer contexts, such as via websites and other forms of mediated communication (Gleasure & Feller, 2016a, 2016b; Kwampaiboon et al., 2014; McMahan et al., 2015; Warren et al., 2017). Our study helps to address this research gap as our design model synthesises research and participant input to outline key factors, processes and considerations that are involved in creating prosocial intention on websites. Furthermore, our findings also show how specific features, perceptions, and motivations interact to create intention.

The components of our design model shed light on how to optimise website user experience. Prior literature did not provide strong evidence that specific features were important for websites promoting prosocial behaviour. The prior research that explores how website features promote prosocial behaviour (e.g., Bennett, 2009; Grimm & Needham, 2012; Shier & Handy, 2012) does not focus strongly on website features or discuss these in detail. Our findings therefore provide the first detailed

explication of how website features and content influence intention to engage in prosocial behaviour. The ten features identified (interaction, factual, anecdotal, external recognition, organisational expression, value suggestion, explanatory content, visual media, written media and, website design) provide a comprehensive set of design principles for further evaluation. They support Grimm and Needham (2012) who argued that website layout and appearance, informational and visual content, and buzzwords and exciting language, increased website visitors' intention to volunteer.

Previous research had generally focused on the role of perceptions in user experience within *commercial* domains – an area of application involving different use cases (Zhang et al., 2010) and motivations (Bendapudi et al., 1996). This study provides the first extensive theorisation of role of perceptions in user experience within *prosocial* domains. The seven perceptions identified (ease of use, aesthetics, information quality, trust, negative affect, positive affect, and argument strength) diverge from the perceptions Park and Gretzel (2007) outlined as part of their analysis of commercial websites as we did not find strong evidence for the importance of interactivity, responsiveness, fulfilment, or personalisation. We discuss reasons for this difference within our sections on limitations and future research. Our findings also differ from Shier and Handy (2012) who found that their participants' perceptions of an organisation's website's accessibility and trustworthiness were not linked to their probability of donation to that organisation. Our findings illustrate how a website visitor's motivation interacts with a website's features and perceptions to increase or decrease their intention to engage in prosocial behaviour. Previous research examined features and perceptions and motivations in isolation rather than exploring how they interacted within the context

of using a prosocial website. In contrast, this research reveals 28 novel links between features and perceptions and seven links between perceptions and motivations. These links help to explain how and why specific features and perceptions drive prosocial behaviour, for instance, how features, such as images help to satisfy user needs.

Our findings give insight into how attempts to encourage behaviour should differ between commercial and prosocial contexts. Social marketing research had argued that different appeals and approaches are required for encouraging prosocial and commercial behaviour (e.g., Bendapudi et al., 1996, Rothschild, 1979, Rothschild, 1999). However, the implications for website design were unclear as there was little evidence to show where prosocial websites should mirror the approaches of commercial websites, or should instead pursue different design priorities. Because little research had examined prosocial online domains (e.g., Kwampaiboon et al., 2014; Warren et al., 2017), it was unclear what was effective for prosocial websites, or how this compared to what was effective for commercial websites. Our research helps to resolve this uncertainty. For example, we find that negative affect appears to increase intention to volunteer in our study despite this perception being dissuasive in commercial contexts (e.g., Hong et al., 2013). However, we also find that egoism is the most commonly expressed motivation for prosocial behaviour. This suggests that visitors to prosocial and commercial websites share similar overarching motivations but that their needs are satisfied in different ways.

### **5.3     *Limitations and future research***

We hope that future research will reassess and improve our findings and design model. We assessed how website design and perceptions influenced our participants' intent to engage in prosocial behaviour. Intention is a widely-used proxy

for behaviour because intention predicts behaviour (e.g., Huang & Kao, 2011; Teo, Wei, & Benbasat, 2003; White, MacDonnell, & Ellard, 2012). However, because intention does not always lead to behaviour (Limayem, Hirt, & Cheung, 2007), it would be valuable for future research to reassess our findings using methods that examine behaviour rather than intention only.

One limitation with RGT is that the comparative approach can exclude factors that are relevant if they are not observed within the set of elements compared (Hassenzahl & Wessler, 2000). This may explain why we did not identify interactivity as an important perception: The websites used were generally not interactive, so interactivity may not have been noted as a comparative advantage. As website technology has improved, interactivity has become more widespread. It would therefore be valuable for future research to reassess the findings using newer websites with greater interactive functionality. Future research should also examine if there are features that improve user experience that were not mentioned by participants as they were not on any of the websites compared.

Our research context also did not enable participants to meaningfully compare websites based on their responsiveness, fulfilment, or personalisation. Future research should address this by examining interactions between participants and organisations over a longer timeframe.

Our research design involved interviewing participants and asking them to self-report their mental state. This may have reduced our ability to identify cases where motivations other than egoism were present as individuals are not always able to understand or fully explain what drives their behaviour (Nolan, Schultz, Cialdini, Goldstein, & Griskevicius, 2008). For instance, some of our participants who expressed sentiments such as “I want to help because I feel bad”, may actually have

wanted to help with no expectation of getting a reward or because a situation violated their moral principle. However they may not have been able to understand or express their actual motivation. It would therefore be valuable for future research to categorise participants by underlying motivations before testing how website content enables or disables such motivations. For example, this categorisation could be based on the outcome of experimental manipulation (e.g., Batson et al., 2011).

Our findings suggest a need to further explore the differences in best practice website design between prosocial and commercial domains. For example, features that created negative affect, such as sad images and narratives, increased intention to volunteer in our study. However, similar features would likely dissuade individuals considering a purchase in most commercial contexts (e.g., Hong et al., 2013).

Similarly, seeing an expression of an organisation's values may be important for an individual choosing whether to donate to an organisation but less important for a visitor to a commercial website. Future research may consider examining how these behaviour drivers differ across commercial and prosocial websites by mapping them across models such as COM-B (Tombor & Michie, 2017), the Fogg Behaviour Model (Fogg, 2009), or the persuasive systems design model (Oinas-Kukkonen & Harjumaa, 2009).

As people may generally prefer commercial behaviour (e.g., to shop) to prosocial behaviour (e.g., to volunteer), it may be the case that persuasion is more important in prosocial than commercial domains (cf. Rothschild, 1979). It is therefore possible that strong arguments and affective appeals may be more important in prosocial than commercial domains. We recommend that research should investigate this further.

It would also be valuable to explore how the relevance, or relative importance, of

factors (e.g., features, perceptions and motivations) differs based on the type of prosocial behaviour involved. It has been suggested that volunteering is emotion-driven, while philanthropy is more information-driven (Michel & Rieunier, 2012). It is therefore possible that evaluations of website security may be more important for driving donation behaviour than volunteering behaviour. Similarly, volunteering behaviour may be more influenced than donation behaviour by visual media that creates an emotional reaction.

It is probable that culture or gender (Cyr, Head, Larios, & Pan, 2009; Guadagno & Cialdini, 2007), mediates the importance of different factors, for example, that cultures, or genders, will differ in their response to emotional appeals. Accordingly, research should also examine how optimal website design differs by demography.

We encourage future research to further examine the perceptual measures that we identified. This research should examine how each perception effects different types of prosocial behaviour, in different contexts. We also encourage research to examine our perceptions in greater detail. For instance, *negative affect* is a broad concept and certain types of *negative affect* such as frustration, are unlikely to drive prosocial behaviour. Future research should therefore examine how different aspects of *negative affect* influence behaviour. Several of the perceptions that we identified (*ease of use, trust, aesthetics, and information quality*) link to “website quality” literature within IS, such as the WebQual framework (Barnes & Vidgen, 2002; Barnes & Vidgen, 2000). Others, such as *argument strength* and *positive affect* and *negative affect*, are more about motivating behaviour. In time, both sets of findings could be developed into a framework extending website quality with “motivational quality”.

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## Appendix A. Persuasion techniques used to code websites

Drawing from established sources (R. B. Cialdini, 2009; Dolan, Hallsworth, Halpern, King, & Vlaev, 2010) the websites were coded for eight widely accepted persuasion techniques (summarised in Table A1).

<b>Table A1</b> Persuasion techniques	
<b>Technique</b>	<b>Description and examples</b>
Scarcity	Scarce resources are commonly valued more highly than plentiful ones (West, 1975; Worchel & Arnold, 1973; Zellinger, Fromkin, Speller, & Kohn, 1975)
Reciprocity	People generally feel obliged to repay a favour (Becker, 1956; Gouldner, 1960; Regan, 1971)
Social proof	People are usually swayed by the actions of those around them (Asch, 1951; Bandura & Menlove, 1968; Milgram, Bickman, & Berkowitz, 1969)
Liking	Someone who is liked by their target has better chance of persuading them (Chaiken, 1979; Drachman, deCarufel, & Insko, 1978; Emswiller, Deaux, & Willits, 1971)
Authority	Authority figures can often persuade people to do things they wouldn't do otherwise (Hofling, Brozman, Dalrympl. S, Graves, & Pierce, 1966; Milgram, 1963, 1974)
Commitment & Consistency	People usually feel obliged to remain consistent with prior commitments (Freedman & Fraser, 1966; Howard, 1990)
Incentives	Incentivising a behaviour is will encourage people to engage in the behaviour (Marteau, Ashcroft, & Oliver, 2009; Volpp et al., 2009)
Creating Negative Affect	Experiencing negative emotion can make people act to reduce it by doing something for others (R. Cialdini et al., 1973; Piliavin, 1981)
Creating Positive Affect	Experiencing negative emotion can make people easier to persuade (R. B. Cialdini, 2009; Guéguen & De Gail, 2003).

## Appendix B. Examples of open coding

To give insights into our coding process, Table B1 shows examples of how some of our constructs were open coded. From the left, the columns show i) category of open code, ii) open code assigned, iii) negative construct pole, and iv) positive construct pole. The category of code column shows which type (i.e., features, perceptions, motivations) of open code was assigned. The open code column shows an open code that was applied to the construct. The negative construct pole column shows the participant's explanation as to why one/two website(s) were less persuasive than the other(s). The positive construct pole column shows the participant's explanation as to why one/two website(s) were more persuasive than the other(s).

	<b>Open code</b>	<b>Negative pole</b>	<b>Positive pole</b>
Features	The ability to sign up on the website	Have to contact them via email and postbox	really easy to sign up; just takes a few clicks
	Statistics	Don't give any statistics on volunteers	Gives statistics and trends on volunteers
	Information about Facebook comments	Doesn't have social media	Can see how many people are involved through Facebook, can see more information has social media
	Support from recognised organisations	Isn't noticeably supported by any well-known and well-respected institutions	Is supported by well-known and well-respected institutions
	Discussion of their values	Doesn't show their mission values and belief on homepage	Have mission values and beliefs on the homepage in short summary
	Reasons why you should volunteer	Just gives you options to volunteer	Gives reasons why you should volunteer
	Changing picture	Has only one picture	Gives you moving pictures; Shows many different projects they undertake
	Pictures	Home page has a few pictures which don't change	Homepage changes pictures quite often; If you like what you see, you will want to do it
	FAQ section	Doesn't have any FAQ section	Has all the frequently asked questions; can find most answers to questions here
	Search	Doesn't have a search by category function that allows you to easily search by	Has a search by category function that allows you to easily search by region and interest

<b>Table B1</b>		
Constructs and open coding		
<b>Open code</b>	<b>Negative pole</b>	<b>Positive pole</b>
	region and interest	
Ease of use	Have to browse to see volunteers	Has projects from the very beginning, easy to see details; easy to find information
Trust	Look very simple, not eye-catching	More attractive, more professional; Less likely to be dodgy, seems more reliable
Negative affect	Just shows people having a good time	Uses more imagery of people in need; You take pity, makes you feel fortunate so you want to help
Positive affect	Focus is not on pictures that try to inspire people to help	As the main focus of page it shows pictures that try to inspire people to help; picture of volunteers with those they are helping etc
Aesthetics	Homepage is a boring colour, a colour which doesn't attract attention; makes me bored	Has a nice colourful homepage; Will favour the colourful page as more attractive
Information quality	No video on homepage	Has a video showing what it is like to be in poverty: Brings you into the context
Argument strength	Has no stats	Has real evidence and stats about about how serious the situation is and how badly they need your help: Numbers are more convincing for me
Egoism	Doesn't show that it works with recognisable organisations	Shows it works with recognisable organisations and companies: Better for you for your personal gain