How others’ behaviours affect visitors’ pro-environmental behavioural intention: a research model based on the case of beach cleaning

Taketo Naoi* · Akira Soshiroda** · Shoji Iijima***

Abstract
This study proposed a model that could elucidate the effects of others’ pro-environmental behaviour on visitors’ pro-environmental behavioural intention, using beach cleaning as others’ behaviour. The model relied on knowledge of tourism studies and environmental psychology, especially the concept of Motivation Towards the Environment (MTE) as well as the effects of others’ pro-environmental behaviour, as suggested with reference to social dilemma theory and the concept of social norm. The model aimed to examine the effects of information regarding others’ pro-environmental behaviour on visitors’ MTE and ‘desire to be away’, effects of the motivations on visitors’ pro-environmental behavioural intention, and indirect effects of the intervention on visitors’ pro-environmental behavioural intention.

I. Introduction
There seems to be much social recognition that visitors are often environment unfriendly. As Dolnicar and Grün (2009) empirically elucidated, tourism as a context may help direct the same person towards less pro-environment practice on a trip than at home. Anonymity is regarded as a possible reason for their environment-unfriendly nature, in light of the likely absence of familiar others outside one’s daily environment. In other words, the presence of others, and their pro-environmental behaviour, may have a fostering effect on visitors’ pro-environmental behavioural intention. This study proposed a research model to elucidate the effects of others’ pro-environmental behaviour on visitors’ pro-environmental behavioural intention, drawing mainly upon literature on human pro-environmental behaviour in tourism studies and environmental psychology.

The present work placed much emphasis on theoretical reviews and arguments for the establishment of the research model. Nevertheless, this study’s potential managerial contribution should be advocated to ensure its practical significance. The study aimed to offer clues for the effective use of such information to motivate visitors’ pro-environmental behaviour, which can be regarded as, in Schwinghammer’s (2014) words, a soft measure, compared with structural measures that typically employ incentives and penalties, to change human knowledge and mind-set. Such a measure seems feasible; it is unlikely to result in much financial burden and impede visitors’ satisfaction.

Beach cleaning at a bathing beach was selected as the others’ pro-environmental behaviour in light of the need to alleviate environmental issues, such as inappropriate waste disposal, both to conserve the environment and secure safety for bathers, who touch sands, sea water (Williams & Micallef, 2011), and other constituents such as beach litters with their skin. Litter may affect creatures, for example through ingestion and/or entanglement (Santos et al., 2005). It may also cause a lot of harm to sea bathers. Indeed, many studies have seen litter as a cause of injuries (Grenfell & Ross, 1992; Santos et al., 2005). Beach cleaning was chosen not only because of its efficacy in physically removing litter but also its possible enlightenment effect with appropriate design of information on it. The effects of beach cleaning information on bathers’ pro-environmental behavioural intention were thus investigated.

II. Literature review
Tourism studies on visitors’ pro-environmental behaviour
as well as studies on human pro-environmental behaviour in general were reviewed to detect research gaps and lay the foundations for the research model.

2.1 Visitors’ pro-environmental behaviour

Tourism studies have focused on different types of visitors’ behaviours: the pro-environmental behaviour of visitors at nature tourism destinations (Ballantyne et al., 2008, 2018; Hu et al., 2018; Kim & Weiler, 2013; Liu et al., 2014; Zhang et al., 2018), particularly their willingness to pay for park conservation (López-Mosquera & Sánzhez, 2012); potential guests’ choice of environment-friendly hotels (Chen & Peng, 2012; Han, 2015) and eco-cruises (Han et al., 2019); guests’ patronage intention of green hotels (Gupta et al., 2019); guests’ actual reuse of offerings (Dolnicar et al., 2017, 2019; Gössling et al., 2019) and reuse intention (Han & Hyun, 2018); and visitors’ pro-environmental behaviour not tied to specific tourism products (Huang et al., 2016; Kiatkawsin & Han, 2017). To the authors’ best knowledge, no empirical studies on sea bathers’ pro-environmental behaviour have been conducted.

As to theoretical models, scholars have applied Theory of Planned Behaviour (TPB) (López-Mosquera & Sánzhez, 2012; Song et al., 2012) and Values-Beliefs-Norms Model (VBN) (Kiatkawsin & Han, 2017; López-Mosquera & Sánzhez, 2012; Hu et al., 2018) as well as a combination of them (Han, 2015) with some modifications. The Norm Activation Model (NAM) with incorporation of Value-Attitude-Behaviour (VAB) hierarchy was applied by Han et al. (2019) and a combination of parts of NAM and TPB was applied by Zhang et al. (2018). To examine the effects of perceived quality of services, Mehrbani and Russel’s (1974) Stimulus-Organism-Response (S-O-R) paradigm has been applied (Gupta et al., 2019). Other researchers have constructed models that incorporated variables of their target, such as social capital (Liu et al., 2014), place attachment (Ramkisson et al., 2013), as well as reflective engagement and cognitive and affective learning outcomes (Ballantyne et al., 2018). A recent attempt applied Qualitative Comparative Analysis to detect the effects of combinations of variables covered by TPB and VBN as well as demographic variables (Olya & Akhshik, 2019). Meanwhile, other studies have examined the effects of external reinforcing stimuli on behaviour (Dolnicar et al., 2017; Gössling et al., 2019; Huang et al., 2016).

The abovementioned tourism studies highlighted two research gaps. First, many of them have targeted visitors who are likely to have been motivated towards pro-environmental behaviour prior to their trip, such as visitors at nature destinations and those choosing environment-friendly products. The promotion of human pro-environmental behaviour is more urgently needed in contexts that may not foster or even hamper such behaviour. Second, most of the existing studies have focused on internal and relatively persistent psychological variables. TPB posits that one’s intention to act, which further affects one’s behaviour, is determined by attitudes, norms, and perceived behavioural control, which is the belief that one has the ability to perform a particular action successfully (Koger & Winter, 2010). VBN postulates that environmental values influence the awareness of consequences, which affects the awareness of one’s responsibilities, which in turn influence personal norms that ultimately affect behaviour or behavioural intention. NAM comprises problem awareness, ascribed responsibility, personal norms, and assumes that one’s pro-social/pro-environmental intention or behaviour is a function of personal norm induced by problem awareness and ascribed responsibility (Liebe et al., 2011).

Many of the above variables are considered persistent. Values are general preferences for end states or ways of acting, transcending different contexts and underlying more specific attitudes, preferences, and behaviours (Clayton & Myers, 2015). Indeed, values are regarded as the hardest to change among the variables in VBN (Koger & Winter, 2010). Norms are rules for expected behaviour; personal norms are feelings of obligation about what other people do in a particular way (Koger & Winter, 2010). Norms are also said to change slowly (Solomon et al., 1999). Attitudes represent evaluative beliefs about something (Eagly & Chaiken, 1998), and are also supposed to endure over time and apply to more than a momentary event (Solomon et al., 1999).

The application of TPB and VBN to human daily pro-environmental behaviour is rational, given that enduring contexts are often focal. Their application to visitors is also reasonable when focusing on the effects of predispositions on various behaviours. However, if tourism is viewed as a temporary context, then it is necessary to examine the effects of visitors’ temporary encounter with unfamiliar settings on their behaviour. In this sense, approaches that focus on the effects of external reinforcements on behaviour may also be...
worth considering. Among the above tourism studies on visitors’ pro-environmental behaviour, the field experiments by Dolnicar et al. (2017, 2019) and Gössling et al. (2019) examined the effects of pro-environmental appeals on hotel guests’ actual reuse of offerings.

Drawing upon the above observations, this study examined visitors’ behaviour in public spaces and the effects of interventions to reinforce human behavioural intention while covering personal and internal psychological factors that could explain human behavioural intention.

2.2 Visitors’ environmental behaviour

Knowledge of environmental psychology based on social dilemma theory posits that the choice for sustainable products is a trade-off between personal and societal benefit and between direct and delayed need satisfaction (de Jonge et al., 2014). Moreover, human behaviour has been argued to be geared towards short-term needs and motives (Bell et al., 2001). These implications point to the difficulty in fostering human pro-environmental behaviour as the benefits it brings to humans are usually public and long term rather than personal and short term (Bell et al., 2001). These implications point to the difficulty in fostering human pro-environmental behaviour as the benefits it brings to humans are usually public and long term rather than personal and short term (Bell et al., 2001).

The particularly low level of pro-environmental behaviour in people on vacation has been reported by Dolnicar and Grün in a study of respondents’ behaviour at home and on holiday (2009), which revealed that most of them report less pro-environmental behaviour on holiday. As visitors, except for those on business trips, are less tied to social responsibilities and go on a trip for pleasurable experiences for a limited period, they may tend to seek short-term pleasures rather than long-term societal benefits.

Another possible reason for visitors’ environment-unfriendly behaviour is anonymity. Anonymity is described as the state that allows an individual to pursue their desired behaviour without feeling as if they are antagonizing the group to which they belong (Clayton & Myers, 2015). Except for business and VFR (Visiting Friends and Relatives) visitors, visitors travel to places outside their daily lives where they are likely to immerse in a crowd of unfamiliar people.

The negative effects of anonymity on human pro-environmental behaviour are also implied with reference to social dilemma theory. This theory points to a large-scale dilemma, which refers to situations where many people interdependently act under conditions that represent high anonymity and low degree of communication. According to Gatersleben and Steg (2013), people are less cooperative when they are unaware of how others in a group would act.

Seemingly different but somehow similar is the situation in which a person is surrounded by few people or nobody; that is, there are few or no familiar others. Lindenberg and Steg (2014) claimed that socially empty environments will activate social norms less compared with socially full environments and will thus have a higher chance of deviant behaviour. Many other empirical studies to be reviewed later have revealed the effects of others.

Tourism contexts are likely to be anonymous, which may have negative effects on human pro-environmental behaviour; such anonymity may facilitate a basic tourist desire to escape from daily environmental (Dunn Ross & Iso-Ahola, 1991; Mannell & Iso-Ahola, 1987). The relation between the positive and negative effects of anonymity was considered in the course of the research model building.

2.3 Others’ pro-environmental behaviour

The acts of others may also be key to fostering pro-environmental behaviour. The effect of others’ behaviour on human behaviour has often been discussed in relation with social norms. Social norms refer to others’ behaviour (Koger & Winter, 2010) and are further classified into two types: descriptive norms, or beliefs about what other people do in a particular situation, and injunctive norms, or beliefs about social approval or disapproval for particular behaviours (Cialdini et al., 1990).

According to Cialdini et al. (1990), environments in which others support the norms will activate norms more than simply peopled environments. Steg et al. (2014) also suggested that normative goals to act appropriately can be strengthened by evidence that others are behaving in ways to uphold environmental norms. Strategically speaking, observation of another person engaging in conservation behaviour, which Bandura (1977) called modelling, is claimed to be an effective prompt to foster human pro-environmental behaviour (Bell et al., 2001). The types of others may also matter for pro-environmental behaviour. Cialdini et al. (1990) noted that others’ acts of supporting norms may activate norms stronger if these others are especially important. People are likely to feel compelled to comply when they believe that their in-group endorses the norm (Vohs & Fennis, 2014).

While live modelling may be a more powerful form of...
stimulus to control human behaviour compared with mere information or instructions (Koger & Winter, 2010), information on others’ behaviour may still enforce viewers’ pro-environmental behavioural intention. Schultz (1998) reported that residents increase their own recycling behaviour and sustain such increase when given information on their neighbours’ recycling behaviour. McKenzie-Mohr (2000) showed that backyard composting in the neighbourhood increases when householders post decals that demonstrate their participation in a composting programme.

The above observation of strong effects of close and important others casts a shadow on the potential of others’ pro-environmental behaviour to foster visitors’ pro-environmental behavioural intention. As visitors are likely to be with unfamiliar people at destinations, those others whom visitors encounter may not be regarded as important or close enough to trigger pro-environmental behaviour. One possible measure is the strategic design of information on others’ pro-environmental behaviour. Schwinghammer (2014) noted the efficacy of changing an individualistic short-term view into a more collectivistic and socially concerned one by stressing similarities between groups. Thus, designing information so that it helps visitors perceive others as closer and more important to them is worth considering. For instance, other visitors may relatively be regarded as more familiar to visitors, except for business and VFR visitors, in that they are both visiting the place as visitors for temporary enjoyment and share similar interests. Of course, other visitors may still be quite unfamiliar as they are essentially newly met people.

Perceived gratitude towards others may help shorten the perceived distance between visitors and the others. Gratitude may be felt when a benefactor is responsive to the felt needs or wishes of the recipient and may motivate one to repay, praise, and become closer to the benefactor, which may foster indirect prosocial behaviours towards unrelated others (Clayton & Myers, 2015). Thus, if the information tells visitors that others’ pro-environmental behaviour is beneficial for them, then they may feel the others as closer to them.

As far as the authors have observed, only one study has focused on the existence of important others, namely, accompanying family members, and then verified the mediating effect of them on the effect of social norm related to important others on pro-environmental behaviour (Hu et al., 2018). Nevertheless, Hu et al. (2018) focused on already known others and did not examine the possibly beneficial side of the absence of others: the actualization of sought-for anonymity.

2.4 Explanatory model

The present study aimed to examine the effects of an intervention, namely, information on others’ pro-environmental behaviour, on visitors’ pro-environmental behavioural intention while covering explanatory psychological variables for such behaviour. This study would thus examine (1) the effects of the intervention on the explanatory variables, (2) effects of the explanatory variables on visitors’ pro-environmental behavioural intention, and (3) indirect effects of the intervention on visitors’ pro-environmental behavioural intention.

The above approach held some difficulty in relying upon past knowledge. TPB, VBN, and NAM comprise persistent psychological variables that are regarded as difficult to change, and thus do not seem to fit in this research, which aimed to examine the effects of a temporal intervention on the behavioural intention of visitors temporarily staying at destinations. Skinner (1953) claimed that, like behaviours, emotions and thoughts are susceptible to contingent reinforcing or punishing external events. Although whether such an effect is applicable for a temporary soft-measure is open to question, it is worth considering personal psychological variables that may be affected by interventions and explain pro-environmental behaviour.

The concept of Motivation Towards the Environment (MTE) (Pellerier et al., 1998) may offer candidate explanatory variables for the present study. This concept is based on self-determination theory (Deci & Ryan, 1985), which proposes that people can be motivated to perform behaviours at different levels of self-determination. MTE comprises six different types of motivations that reflect the extent someone is autonomously motivated to act. Motivations are placed on a continuum from the highest to the lowest levels of autonomy. The highest level is intrinsic motivation, or the innate tendency to engage in an activity for the sake of pleasure and satisfaction derived from its practice. Integrated regulations are the second most self-determined type, which occur when a behaviour, which is not performed for its own sake, becomes part of the person’s self-definition. Identified regulation is the third on the continuum and occurs when behaviour is regulated by identification for its perceived importance. Introjected regulation is the fourth on the
continuum, describing a type of controlled internal regulation originating from emotions related to self-esteem and punishment from internal pressure, such as guilt, shame, and anxiety. External regulations are the second least self-determined motivation, governed by sources of control, such as reward, punishment, others’ recognition, and criticism, which originates from the individual’s environment. Amotivation is the least self-determined motivation; amotivated individuals are incapable of foreseeing the consequences of their behaviour, feel lack of control, and cannot perceive the motive to act.

Pellerier et al. (1998) constructed the MTE scale (MTES) to measure the strength of the six motives. MTES has been adopted to examine the effects of motivations on goal progress in motivational interviewing sessions (Tagkaloglu & Kasser, 2018). Grønhøj and Thøgersen (2017) also adopted MTES to measure the differences between children and their parents and then verified the causal positive effects of external motivations, amotivations, and internalized motivations, which are the aggregation of the remaining four motivations, on adolescents’ motivation to conduct three pro-environmental acts using structural equation modelling. They revealed the effects of internalized and external motivations in all the instances and of amotivations on saving electricity. To the best knowledge of the present authors, no tourism studies on visitors’ pro-environmental behaviour have applied MTES.

It should be noted that MTES includes considerably self-determined types that are insusceptible to external factors, such as interventions. Indeed, MTES was originally designed to investigate enduring motivation that can be maintained in the absence of external reinforcements (Pelletier et al., 1998), and has been applied for that purpose (Grønhøj & Thøgersen, 2017; Tagkaloglu & Kasser, 2018). However, this concept also involves motivations, namely, a motivation and external motivation, with a small extent of self-determination. Therefore, while the intervention may not affect the persistent and self-determined types and amotivation, which is determined by perceived lack of control, it may influence the less self-determined types, such as external motivation.

The concept of amotivation also offers implications on learned helplessness: when people feel that they receive aversive stimuli over which they have no control, they may become unable or unwilling to avoid subsequent encounters (Seligman & Maier, 1967). This concept is often used to explain people’s inability or unwillingness to act pro-environmentally. Diekmann and Preisendörfer (1998) introduced the notion of subjective-rationality strategy, or choosing free-riding options thinking that individuals’ pro-environmental act makes only a small contribution. Thus, if there are no or only weak effects of the intervention on the MTE while amotivation is strong, it may mean that learned helplessness may have overshadowed the intervention.

A motive to ‘be away’ was also included in the research model for two reasons. First, as anonymity may facilitate visitors to escape from their daily lives, as discussed above, the balance between its actualization for visitors’ better experience and its alleviation for environmental conservation should be considered. Second, ‘being away’ is deemed as a restorative experience for those visiting natural settings (Koger & Winter, 2010). Harting et al. (1997) developed the perceived restorativeness scale (PRS), which includes scales to measure the effects of being away. A study on the restorative effects of beaches also adopted PRS (Hipp & Oladele, 2011).

Interestingly, the results of past studies do not support or even run counter to the previously presented assumption that anonymity may hamper human pro-environmental behaviour. A study on the restoration of students joining research at a nature park showed no significant effects of being away on their general ecological behaviour. Furthermore, Riper et al. (2018), in a study on the relation between six types of place-based motivation and pro-environmental behavioural intention, revealed only significant correlation between a motive to escape and intention to leave no trace, and the relation was positive.

Assuming that information on others’ pro-environmental behaviour hampers the anonymity and actualization of a motive to be away, three types of consequences are possible. If such a motive hampers visitors’ pro-environmental behavioural intention, then information on others’ pro-environmental behaviour may indirectly foster such intention. If the motive to escape does not have any effects, then information on others’ pro-environmental behaviour may still foster such intention by affecting other types of motivation. Lastly, if the motive to be away has adverse effects, then such information may be harmful for both the reinforcement of such behavioural intention and actualization of their desire to escape, especially when any other type of motivation is reinforced.
While concrete information of human pro-environmental behaviours may vary depending on the contexts, some basic typologies are available. One is to discern collective from individual actions (Kato & Nonami, 2010; Nonami et al., 2002). The former comprise acts to communicate with others and work in an organization to achieve goals; the latter are performed by individuals separately. The former concern visitors who purposefully engage in pro-environmental group acts. This study focused on the latter, which appear applicable for many types of visitors who do not necessarily share the same goals.

Another distinction can be drawn between curtailment behaviours, meaning using less, and efficacy behaviours, meaning performing the same function while using fewer resources (Clayton & Myer, 2015). Efficacy behaviours are often more effective and require fewer personal sacrifices, and thus, they seem more feasible for visitors who strongly seek enjoyment.

It is crucial to detect residual variables that may affect dependent variables and try to either minimize their effects by way of control, or, when strong control is not feasible, measure the residual variables to consider them when interpreting the results. Given the limited space, this research note touched on residual variables that may mediate the effects of the intervention on visitors’ MTE particularly, inevitably omitting observable residual variables, such as participants’ income and age (Dolnicar, 2010). Also possibly determinative are visitors’ predispositions, such as those incorporated in TPB, VBN, and NAM, as well as moral obligation (Dolnicar, 2010), environmental concern (Dolnicar, 2010; Kim & Han, 2010), perceived benefits (Zhang et al., 2018), regional identity (Dolnicar, 2010; Su & Swanson, 2017), anticipated feelings of pride and guilt (Han et al., 2019), anticipated positive and negative emotions (Han et al., 2019; Song et al., 2012), place attachment (Ramkissoon et al., 2013), and habits (Han & Hyun, 2018). They were excluded, as an investigation of them would be too substantial to incorporate into a single study.

Social norms may not arise only from those to whom viewers pay particular attention. Cialdini et al. (1990) stated that descriptive norms are more influential than injunctive norms for pro-environmental behaviour. Therefore, if visitors think that the majority of others do not act pro-environmentally, it may bring forth a strong descriptive norm that encourages visitors to act in an environment-unfriendly manner, in accordance with others. Such an effect may overshadow the effect of the intervention. Therefore, visitors could be asked whether many others behave in an environment-friendly manner. Moreover, in view of the finding that public litter in photographs of a beach lowers the beach’s perceived restorative quality to the largest extent (Wyles et al., 2017), visitors may be asked about the perceived quantity of inappropriately disposed waste.

Another possible residual variable is visitors’ perception of others engaging in pro-environmental acts as a typically pro-environmental type. When others’ environmental behaviour is explained as owing to them being a specific type, it may decrease adoption of these behaviours by others who do not perceive themselves to be that specific type (Markowitz & Malle, 2012). Bashir et al. (2013) also found that people are less motivated to adopt pro-environmental behaviours when such behaviours are advocated by typical rather than atypical environmentalists. People participating in beach cleaning, who are the target of this study, may also be regarded as typical environmentalists. Therefore, visitors should be asked how special they regard those others who are taking part in pro-environmental acts and themselves.

III. Beach cleaning as the target case

Beach cleaning at a bathing beach was selected as the others’ pro-environmental behaviour for two reasons. First, litter has been regarded as a serious issue which may harm both creatures and sea bathers, and beach cleaning is a means of removing it. Second, the enlightenment effect of beach cleaning is expected together with appropriate design of information.

While litter may be carried for long distances by currents, recreational and tourism-related litter is also one of the main causes of marine and coastal pollution (Santos et al., 2005). Many environmental effects can relate to such drifted or inappropriately disposed litter. Creatures, such as birds and turtles, may be affected through ingestion and/or entanglement (Santos et al., 2005).

Sea bathers are not immune from the negative effects of litter, either. Litter was found to be the cause of most beach related injuries in Brazil (Santos et al., 2005), and account for 19 per cent of all beach related injuries in Australia (Grenfell & Ross, 1992). These issues of litter at beaches may be attributed to bathers often touching sands, sea water, and other constituents with their skin. Accordingly, litter may
negatively affect sea bathers’ experiences, and as Tudor and Williams (2006) suggest, the absence of litter may determine beach choice.

Possibly for the above reasons, litter survey is often employed as an index of beach management guidelines, such as a beach register, which is an easily adaptable checklist (Pond et al., 2000). Identified litter should be removed so that sea bathers will not sustain injury, and beach cleaning is an activity of physically removing it. Beach cleaning, particularly manual cleaning, is seen as a measure of bathing area management that cares about sensitive environments (Williams & Micaleff, 2011).

However, when beach cleaning is viewed as a way of environmental enlightenment, the effect of beach cleaning alone is often limited to actual participants. Although it is still possible for beach cleaners to be seen as live modelling (Koger & Winter, 2010), the likelihood of witnessing their acts of cleaning is likely to be low for many sea bathers who have no particular intention to see beach cleaning. In view of the previous arguments on the effects of information on others’ pro-environmental behaviour on viewers’ pro-environmental behavioural intention, the presentation of information on beach cleaning to sea bathers may be an effective measure to increase the enlightenment effect of beach cleaning.

IV. Research model

The research model is presented in Figure 1. The model comprised three parts: (1) a structural model that explained visitors’ pro-environmental behavioural intention, (2) an intervention featuring information on others’ pro-environmental behaviour, and (3) possible effects of residual variables. The data would be collected from bathers through on-site questionnaire survey at selected bathing beaches. Videos featuring acts of beach cleaning would be used as the intervention.

Regarding (1), a model employing MTES as the independent variables and pro-environmental behavioural intention, as in Gronhøj and Thøgersen (2017), would be applied. As elucidated by Gronhøj and Thøgersen (2017), the internalized motivation that is the outcome of merging intrinsic motivation, integrated regulations, identified regulation, and introjected regulation is hypothesized to affect pro-environmental behavioural intention positively. Meanwhile, external regulations and amotivation are hypothesized to have negative effects. The effects of the desire to be away on pro-environmental behavioural intention is difficult to hypothesize owing to the lack of previous empirical findings and the previously presented arguments, which point to all of three possibilities: positive, negative, and no effects. Thus, the significance and direction of this effect was not hypothesized deliberately.

MTES, which are used in Gronhøj and Thøgersen (2017), would be adopted to measure the six MTEs. Scale items to measure the desire to escape would be taken from the four scale items for measuring restorativeness regarding being away (Harting et al., 1997). The scales to measure bathers’ pro-environmental behaviour would be taken from past studies regarding efficacy behaviour (Kiatkawsin & Han, 2017) as well as ethical types (Lee et al., 2013) and Su and Swanson (2017).

Figure 1. Research model explaining bathers’ pro-environmental behavioural intention
Turning to (2), the behaviour of participants in beach cleaning would be videotaped and presented to respondents. Videos were used to present an individual’s pro-environmental act in Markowitz and Malle’s (2012). The same video would be accompanied by information on who the participants are and what the purposes are. The two basic types of conditions would be incorporated in the written information. Type 1 would be about whether people participating in beach cleaning are all locals (Participant Condition 1) or also include visitors (Participant Condition 2). Participant Condition 2 would be designed such that the participants are likely to be perceived as in-group members more strongly compared with Participant Condition 1 by the respondents, who are also visitors. Type 2 would be about whether beach cleaning is conducted for environmental conservation and education only (Purpose Condition 1) or also for visitors’ comfortable and enjoyable experience (Purpose Condition 2). Purpose Condition 2 would be combined only with Participant Condition 1, whereas Purpose Condition 2 would be applied to both participant conditions. Purpose Condition 2 would induce a sense of gratitude towards the participants. In addition, to verify whether Purpose Condition 2 indeed induced a stronger sense of gratitude compared with Purpose Condition 1, visitors would be asked to rate the strength of their perceived gratitude towards the beach cleaning participants. A control group would be shown neither the video nor information, and they would be asked whether they had heard of and/or participated in beach cleaning to see how much they had actually been controlled. Altogether, there would be four conditions (Figure 1).

Although the target context and variables were different, Hu et al. (2018) revealed that family members’ companionship positively mediates the effect of social norm on visitors’ pro-environmental behaviour. As such, in the intervention, we hypothesised that at least the external motivation, as affected by external reinforcement, would be positively affected. As this motive may have negative effects on pro-environmental behavioural intention, from the perspective of enlightenment effect, it is worth investigating the effect of intervention on more self-determined, but still not very intrinsic motivations, such as Introjected regulation, which relates to avoidance of guilt or shame and others' disapproval (Gronhøj & Thøgersen, 2017). The intervention was also hypothesized to influence desire to be away negatively. As for the types of interventions, the ratings of external motivation were hypothesized to be stronger in the order of Conditions 3, 2, and 1, owing to the effects of gratitude towards participants, as well as in the order of Conditions 4, 2, and 1, owing to the effects of perception of participating tourists as in-group members. The ratings of desire to be away were hypothesized to show the opposite tendencies. Perceived closeness and gratitude were expected to decrease the sense of anonymity. Differences between Conditions 3 and 4 would not be hypothesized, as existing knowledge that could help hypothesize the difference in the effects of perceived closeness and gratitude towards others has not been found.

Lastly, regarding (3), bathers would be asked to rate the extent to which they agree that many of the others bathers behave in an environment-friendly manner, as well as the rough quantity of inappropriately disposed waste on interval scales. If the rating on the former scale is low and the rating on the latter is high, then social norms implying the environment-unfriendly behaviour of many others may occur, and the significant effects of the intervention may be reduced or eliminated. They would also be questioned on their perception regarding how special/ atypical the others taking part in pro-environmental acts and themselves are, to ensure the effects of perceiving beach cleaners as special environmentalists. Higher values of the former reduced by the latter would indicate a weaker expected effect of the intervention on the external motivation. This is because of the large perceived distance between visitors and participants. The same differentiation could be expected to be proportional to the strength of desire to be away for the same reason. In the unlikely case that the ratings regarding visitors are higher than those regarding the participants, the visitors would likely be very pro-environmental, and the effect of the intervention would be expected to be weak or insignificant.

V. Issues, limitations, and contributions

In addition, the study site would need to be determined for the research implementation. Preferably, the target beach should be (1) recognized broadly as a bathing destination, (2) outside but not exceedingly far from major cities, (3) recognized broadly as implementing conservation efforts, and (4) where beach cleaning would attract visitors’ participation and conducted not only for environmental conservation/education but also for bathers’ pleasurable
experiences. The first two are the clues to select a beach that attracts a wide range of bathers from outside the area or region. The third feature can be insured by granted certifications, such as the Blue Flag, and may help avoid a huge difference in the social norm as perceived by visitors in that they are likely to regard the beach as a place where people should act pro-environmentally. These, however, may eliminate the diversity in the degree of their pro-environmental behavioural intention. To minimize the risk, visitors would be asked to think of their pro-environmental behaviour not only at the beach but also in nearby areas, such as promenades.

Compared with this study that regards pro-environmental behaviour as being induced by external factors, Corral-Verdugo et al. (2011) elucidated that sustainable behaviour may explain subjective well-being and happiness. That is, sustainable behaviour, such as pro-environmental behaviour, may be performed to achieve more ultimate positive goals. Such a view may be of immediate usefulness for studies on visitors, such as nature visitors who are likely to be highly pro-environmentally motivated.

This study would focus on the pro-environmental behaviour of visitors, who are arguably one of the most difficult types to motivate to act pro-environmentally. Practically, this study is expected to enhance the enlightenment effect of preservation activities, such as beach cleaning, without too much sacrificing visitors’ comfort as structural measures (Schwinghammer, 2014) may possibly do. The obtained implications may be applicable to other types of tourism, such as cultural tourism, which attempts to encourage visitors’ respect of local cultures, or to non-tourism contexts, in which the pro-environmental behaviour of those who are not attached to local places, such as expatriate staff, need to be evoked.

References
Dunn Ross, E. L., and Iso-Ahola, S. E. 1991. Sightseeing tourists’


Schwinghammer, S. A. 2014. This was all very interesting, but how can we use it?: a practitioner’s guide to sustainable behavior. In. H. C. M. van Trijp (eds.), Encouraging sustainable behavior: psychology and the environment (pp. 219-233). New York: Psychology Press.


