



Towel reuse in hotels: Importance of normative appeal designs

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ABSTRACT

Laundry is a major factor in hotel fresh water use. Pro-environmental appeals to encourage tourists to reuse towels and bed linen have received much attention in the literature, though findings have remained inconclusive. This paper presents the results of a large field experiment with 21,000 observations in seven hotels catering to the sun, sand & sea leisure tourism market in Gran Canaria, Spain. Findings suggest that comprehensive message designs can increase towel reuse by 6.8% and bed linen reuse by 1.2%, compared to existing in-room messages. Results also show that nationality, age, length of stay, repeat visits, temperature, and hotel standard influence participation levels. The field experiment confirms that normative appeals can trigger significant behavioural change. Evidence suggests, however, that social norm generation may be a more promising avenue to changing behaviour than norm adherence.

1. Introduction

Water is a central, and often scarce resource in tourism (Bohdanowicz & Martinac, 2007; Essex, Kent, & Newnham, 2004; Hadjikakou, Chenoweth, & Miller, 2013). Tourism-related water use can be locally significant, including direct (on site) and indirect (virtual) fresh water consumption (Gössling, Hall, & Scott, 2015). With growing awareness that a global water crisis is impending and accelerating under scenarios of climate change (Vörösmarty, Green, Salisbury, & Lammers, 2000), water management to avoid or minimize water consumption has received growing attention (Gosling & Arnell, 2016; Hanjra & Qureshi, 2010). In accommodation establishments, this has for instance included the introduction of new technologies, policies seeking to optimize staff routines, and normative appeals to foster behavioural change on the side of tourists (Gössling et al., 2015).

Efforts to reduce water consumption in tourism have focused on food, irrigation, in-house, and in-room water use (Gössling et al., 2015). Specifically, with regard to in-room water use, considerable research efforts have sought to understand how tourists can be convinced on the basis of pro-environmental appeals to reuse towels and bed linen (Baca-Motes, Brown, Gneezy, Keenan, & Nelson, 2013; Dolnicar, Knezevic Cvelbar, & Grün, 2017a; Goldstein, Griskevicius, & Cialdini, 2011, 2008; Mair & Bergin-Seers, 2010; Shang, Basil, & Wymer, 2010). Guests generate considerable amounts of laundry; this is, hundreds of

thousands of units per year in medium sized hotels, or several kg per guest night (Gössling et al., 2015). Even though laundry of these items only accounts for a small share of water use in hotels (Gössling, 2015), laundry is also energy intensive and requires the use of detergent, while towel and bed linen replacement is time intensive. Both aspects represent additional cost factors, i.e. energy and detergent costs as well as staff working time. Some hotels have policies to exchange both towels and bed linen on a daily basis, and in some cases even twice per day. Where guests can be convinced to use their towels/linen for two days rather than one, resource use can be reduced by 50% in such hotels, representing a considerable potential to align environmental and economic benefits (Gössling, 2015).

Research suggests that normative appeal designs can significantly increase towel reuse (Goldstein et al., 2011, 2008; Shang et al., 2010), though more recent research also concluded that interventions in hedonic contexts will remain insignificant, probably because they do not provide individual benefits (Dolnicar et al., 2017a). This paper consequently seeks to provide further insights into the efficiency of communication strategies, by measuring the effect of two different normative message designs in comparison to a pre-existing standard; i.e., the efficiency of different communication strategies on towel and linen reuse were tested in a field experiment. Analysis also considers the importance of hotel standard, guest socio-demographics, temperature, and effects over time, i.e., aspects that have been omitted in earlier

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studies. Focus is on leisure mass tourism in a sun-sand-sea destination, Gran Canaria, Spain. The island is one of Europe's most popular holiday destinations, with high levels of water use and dependency (Schallenberg-Rodríguez, Veza, & Blanco-Marigorta, 2014).

Given that fresh water scarcity is a growing problem in many destinations in the world, including the Canary Islands, this paper seeks to better understand whether communication strategies can contribute to reduce towel and bedlinen demand, as one important aspect of tourism-related water use. It is based on van der Linden's (2014) postulation that in order for normative appeals to be successful, it is essential to provide factual, procedural and effectiveness knowledge. The study makes five contributions in this regard: (1) It assesses the potential of communicative interventions to influence behaviour, using messages optimized on the basis of earlier findings in the existing literature; (2) derives new psychological insights regarding the role of factual, procedural, and effectiveness knowledge in enhancing normative appeals; (3) it considers covariates including hotel standard, age, temperature, repeat visitor, and the consistency of effects over time, all of which have not been adequately considered in earlier studies; (4) it involves a sample of leisure tourists, as opposed to earlier studies that have not distinguished these from business travellers; and (5) it is based on a field experiment documenting actual behavioural change, with 21,000 observations, the largest survey to date. The study thus addresses the call by Dolnicar et al. (2017a) to replicate field experiments in more generalizable contexts, which it does within various dimensions, and results provide new insights for theory building and policy support.

2. Literature review

2.1. Water use and management in tourism

In many water scarce regions, tourism is a locally significant factor in water use (Essex et al., 2004; Kent, Newnham, & Essex, 2002). On the global scale, tourism's most considerable implication for water consumption is food production, which is specifically water intense: An estimated 70% of global fresh water are used for agriculture (FAO, 2014). Tourism has relevance for food production, because tourists eat greater quantities of food than at home (Gössling et al., 2015) and generate greater amounts of food waste (Juvan, Grün, & Dolnicar, 2018). Tourists are also known to eat a greater share of foods that are higher in the food chain (Gössling et al., 2015) and thus require more water for their production, such as meats or milk-products (Hoekstra, Chapagain, Aldaya, & Mekonnen, 2011; Mekonnen & Hoekstra, 2012). Food management is thus the single most relevant aspect of water management in tourism, accounting for thousands of litres per tourist and day (Gössling, 2015). However, food is often produced outside its area of consumption, and implications for the sustainability of water use are potentially different from direct 'on site' water consumption. Sun, sand & sea destinations in particular are often located in water scarce areas, where water abstraction has greater relevance for competing forms of water consumption (Cole, 2012; Diaz, Knox, & Weatherhead, 2007). Direct, on-site water use may thus have greater sustainability implications than food consumption, even though the latter is far more relevant in terms of overall water use.

In hotels, water is used for irrigation, pools, cleaning, kitchens, as well as in-room uses, which together account for hundreds of litres of water use per tourist and day (Gössling, 2015). In rooms, water is used for taking showers, bathtub fillings, flushing the toilet, brushing teeth and washing hands, as well as, indirectly, laundry including bed linen and towel replacements. In-room uses are an aspect of tourism-related water use that can be influenced though interventions with the purpose to reduce guests' direct water consumption. Of the various aspects of guest water use that can be theoretically targeted by interventions, such as shower times, bathtub use, toilet flushing, tap running times or linen/towel exchanges, hotels have usually focused on towel use. Messages to 'save water' are now ubiquitous in accommodation

establishments, even though their efficiency in supporting behavioural change continues to be inadequately understood.

2.2. Interventions to change tourist behaviour

Voluntary behavioural change in tourism has been investigated out of various theories of behaviour, such as norm-activation theory (Schwartz, 1977), theory of planned behaviour (Ajzen, 1985), or value-belief-norm theory (Stern, 2000). It is now generally acknowledged that behaviour is influenced by external (knowledge, cost, alternatives, social norms) and internal factors (early cognitions, perceptions, moral motivations, personal norms, and habits) (Steg & Vlek, 2009). Interventions to change behaviour are thus always embedded in complex frameworks of wider social conditions and norms, as well as the characteristics of personal identities and values.

In tourism studies, interventions have received much attention, focusing on the question as to whether actions in leisure contexts can be influenced towards less resource-consuming or socially more adequate forms of behaviour. For instance, considerable research has focused on air travel, indicating that even though awareness of climate change is growing (Cohen & Higham, 2011; Higham & Cohen, 2011), desirable behaviour, such as carbon-offset purchases, remains limited (Arana, León, Moreno-Gil, & Zubiaurre, 2012; Cohen & Higham, 2011; Hall, 2013). Studies have also investigated opportunities to employ persuasive communication strategies, for instance with regard to online travel reviews (Sparks, Perkins, & Buckley, 2013) or carbon labels (Gössling, Cohen, & Hibbert, 2016). Clustering approaches to consumption patterns have outlined the importance of socio-demographic variables and consumer cultures, with for example specific nationalities and family structures having been found to be more likely associated with plate waste (Juvan et al., 2018).

As highlighted by Juvan and Dolnicar (2014), it is generally difficult to motivate tourists to change behaviour. This is perhaps most evident in the context of towel reuse, as one of the most closely researched topics in the context of behaviour change. Research has in particular focused on the effectiveness of signs encouraging guests to reuse their towels, based on normative appeals. Such normative appeals are widespread, and found in most hotel rooms. As exemplified in Table 1, these messages usually emphasize environmental aspects of towel use (pollution, water scarcity), though they may also include social aspects (housekeeping, children living in water scarce areas).

2.3. Studies of appeal effectiveness

Goldstein, Cialdini, and Griskevicius (2008) were the first to empirically test whether normative appeals to reuse programmes would encourage towel reuse ($n = 1058$). They compared a 'standard' normative appeal along the lines of 'Help us save the environment', with a descriptive norm message suggesting that 75% of guests (a majority) actually supported towel reuse. Furthermore, instructions were provided as to how to engage in the programme ('Please place towels on the floor'), accompanied by information regarding the impact of the programme ('if most guests participated this would save 72,000 gallons of water and 39 barrels of oil and 480 gallons of detergent'). The analysis of the efficiency of this more detailed norm message in a hotel with 190 rooms indicated that towel reuse rates increased from 35% to 44%.

To further refine insights, Goldstein et al. (2008) then designed five different messages asking guests to participate in towel reuse programmes, including the standard message, 'Help save the environment'; a descriptive norm 'Join your fellow guests in helping to save the environment', along with information that 75% of guests in the hotel already participated; the same norm, but information that 75% of guests in the specific room participated; a norm stating 'Join your fellow citizens in helping to save the environment', along with information that 75% of guests supported the programme; and, finally, a message with a gender identity norm, 'Join the men and women who are helping to

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