



The role of personal involvement, credibility and efficacy of conduct in reported water conservation behaviour



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ARTICLE INFO

Article history:

Available online 27 February 2014

Keywords:

Involvement
Credibility
Efficacy
Water conservation
Reported behaviour

ABSTRACT

We analyse the influence of personal involvement, credibility given to water scarcity, and the perceived efficacy of conducts on reported water conservation behaviour (RWCB). Similarly, we analyse differences in this reported behaviour using age, sex and habitat. Using a Spain-wide survey ($n = 637$) conducted in 20 cities experiencing or not water scarcity. Data collection was undertaken using Web and paper-surveys. Instruments were validated, and measure invariance was tested using habitats. R^2 is small but the contribution of each variable resulted statistically significant, except for the credibility given to water scarcity.

Discriminant analysis groups 99.4% into two clusters with different RWCB. Credibility of facts and risks do not result significant in the creation of these groups. As involvement is significant and credibility of information is not, we conclude that informative aspects do not help to generate greater RWCB. We suggest possible explanations of the findings, and point out implications for further research.

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1. Introduction

Research literature and public institutions recognise the need for adopting personal behaviours that promote water conservation and improve its uses (Hurlimann, Dolnicar, & Meyer, 2009; Jorgensen, Graymore, & O'Toole, 2009). IPCC (2008) studies shows that, despite time has passed it is still possible to mitigate (not avoid) problems concerning the future availability of water. In order to accomplish this objective, it is a requirement that there is both a clear political willingness and a strategic change in sensitive sectors (e.g. tourism, insurance, health, industry, agriculture) as well as a change in citizen behaviour. So that people actually adopt water conservation behaviours, it seems coherent that first they recognise the problem (both present and future). These behaviours should generate personal involvement that translates into believing that individual behaviours are indeed effective.

Throughout Spain, over 10 million people suffered daily water restrictions during some of years of the 1990s decade. During this period, the political solution was to increase water supply (if there

was a scarcity problem, hydric resources would be transported from wherever they were available), ignoring demand culture and behaviour (Estevan & Viñuales, 2000).

The role of individuals (as demand) is a fundamental issue, as pointed out by the UN in 2005 when it launched the Decade of Education for Sustainable Development. This program considered essential that people should be active participants in the promotion and adoption of sustainable behaviours. This need for change has also been discussed in academic literature. As an example, affirmations such as '*...consumers can behave in a more environmentally friendly way by changing the patterns...*' (Haron, Paim, & Yahaya, 2005, p.426) have evolved towards statements such as '*...however, while there is little doubt that consumers must acknowledge that they have an obligation to conserve water...*' (Stewart, 2012, p.11). This is not a minor shift as it passes from a 'can do' approach to 'must do' or obligation.

This article presents the results of a study about the role that involvement, credibility and perceived efficacy play in reported water conservation behaviours, as well as the detection of groups of individuals related to these behaviours. We first portray the importance of the aforementioned variables and propose a model to be contrasted. Second, we describe the method utilised, the sampling techniques, the instruments and the data collection process. Third, we present the statistical results and, finally, we discuss findings and their implications.

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2. Literature background and research model

2.1. Credibility of water problems

Although climate change is one of the greatest recent challenges for humanity, an important part of the Western population is still sceptical about its reality and impact (Islam, Barnes, & Toma, 2013). This scepticism negatively affects the adoption of sustainable behaviours because citizens do not believe that many of the published claims and the severity of potential impacts announced are indeed true (Poortinga, Spence, Whitmarsh, Capstick, & Pidgeon, 2011). Of all dimensions of credibility (Trust, Authenticity, Transparency, Listening, Responsiveness, and Affirmation), trust in the truthfulness of information is considered as the most important one (Blackshaw, 2008).

Rieh (2010) defined credibility as 'people's assessment of whether information is trustworthy based on their own expertise and knowledge' (p.1338), and considered that it depends on the source, the message, the medium and on the receiver. Concentrating on the message, White et al. (2010) stated that its credibility implies technical/scientific evidence, and the existence of strong arguments. In this direction, there is substantial literature that affirms that 'credible information' is perceived as true (Eisend, 2006; Mehrabi, Ali Abu Hassan, & Shahkat, 2009), and that credibility increases if it includes convincing data or details (Slater & Rouner, 1996). For instance, reality and truthfulness are a requirement for the development of credibility. Furthermore, Lowe et al. (2006) found that screening the film 'The Day after Tomorrow' did generate short-term changes in the assessment of climate change, but the inability of the audience to distinguish what was real and what was fictional reduced the credibility of the message.

Credibility (as perceived truthfulness) of water-related problems may work differently when taking into account current facts, or when discussing risks or likely future impacts. Affirmations on the current status are derived from objective, quantifiable, concise and transparent indicators that have 'scientific and technical credibility'. But the public can be uncertain about these affirmations either because they are relatively unknown (e.g.: water footprint, WEI-Water Exploitation Index, etc.) or because they are unexpected and even beyond belief. It is typical that questions may arise regarding the fact that 15,000 l of water are necessary for the production of just 1 kg of beef (Water Footprint Network, 2013), or when it is reported that a high percentage of the water injected into urban distribution systems does not reach households (due to losses in the distribution system).

As risks are an approximate estimation of what could happen in different scenarios, their credibility has a rather subjective component. When evaluating potential future events (risks), individuals might not only doubt the veracity of future negative impacts, but their interpretation is also (a) strongly influenced by culture (Dake, 1992), (b) conditioned by the relativity of the terms used³ and (c) subject to the potential contradiction between what estimates indicate (long-term situation) and to the daily experience of people (short-term situation).⁴

2.2. Personal involvement

Credibility refers to the evaluation of information that has been received, and it can impact the way it is processed. If the

information is not true, there is no impact or inhibition; but if the credibility is high, the information positively influences involvement (Gotlieb & Sarel, 1991). Literature has approached involvement from two different perspectives. The first is Zaichkowsky's (1985) who, in one of the most cited definitions, considered involvement as the degree of interest an individual shows towards concrete results of one or more external stimuli. The second approach considers involvement as the identification of a subject with an object or phenomenon and is given by a cognitive connection between the self and the object (Kyle, Absher, Norman, Hammitt, & Jodice, 2007) and by an emotional link (Bloch, 1982).

Moreover, two types of personal involvement may be differentiated: (a) *situational involvement*, where individuals show a transient involvement normally associated with very specific situations, and (b) *enduring involvement*, where there is a long-term and ongoing evaluation of the importance, identification or concern (Olsen, 2007). Involvement with the problem of water is an 'enduring involvement' because it can be independent of use applications and it can also generate new habits.

In the context of sustainability, involvement has been studied, to its motivational force, in purchase decision processes and in the adoption of sustainable behaviours. Consumer's involvement generates greater motivation for increasing cognitive effort when searching for information, evaluating products, or when pursuing a reduction of dissonance (Hoyer & MacInnis, 2007). In addition, people involved in sustainability are more prone to do actions that, in many cases, go against their short-term interests. This occurs because 'environmentally friendly' products are more expensive, harder to find, they require greater cognitive effort and even entail lifestyle changes. Involvement can also lead to the development of greater concern for a community's welfare, to the reduction of excessive consumption and even to boycotting unsustainable companies through organised actions (Friedman, 2002).

The involvement of individuals becomes necessary for attaining very different sustainability-related objectives. It is necessary to make users participate in the development of sustainable technologies through the evaluation of their usage behaviours (Heiskanen, Kananen, & Timonen, 2005). Spaargaren and Oosterveer (2010) affirmed that it is fundamental that, in a globalised context, individuals behave like active change agents. Involvement is also necessary for conducting respectful consumption choices with the environment or for reducing unnecessary consumptions modifying them until responsible behaviours are achieved (Peattie & Peattie, 2009). In the context of water consumption, Gregory and Di Leo (2003) argued that different degrees of involvement can affect daily actions as highly involved people change their behaviour reducing their consumption (when showering, using washing machines, or irrigating). These authors consider that it is relevant and beneficial to measure the impact of involvement in saving behaviours (conservation).

2.3. Effectiveness of water conservation behaviours

The aim of all integral water conservation programs is to promote the adoption of different responsible citizen behaviours such as the development of savings habits, using of technologies for efficient water consumption, or monitoring and repairing water facilities (e.g. EPA, 2002; Estevan, 2004; Montaña, 2002). All these objectives cannot be achieved with one single action but with the combination of responsible activities such as household cleaning, personal hygiene, food preparation, gardening, leisure or maintenance of pipelines and water facilities.

We maintain that the efficacy of a conservation conduct or practice is the ability to reduce water consumption. It can be differentiated between objective and perceived efficacy (Ellen,

³ The term 'scarcity' is a relative concept (Baumgärtner, Becker, Faber, & Manstetten, 2006; Noemdoe, Jonker, & Swatuk, 2006).

⁴ As an example, this document was written in March 2013, the rainiest month in Spain since 1947, year when the rainfall records commenced.

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