Environmental knowledge and attitudes and behaviours towards energy consumption

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A B S T R A C T

Numerous investigations have arisen in order to study and characterise environmentally friendly consumer profiles, with some authors applying the relationship between knowledge, attitudes and behaviour to this end. The present research approach, based upon the Theory of Reasoned Action (TRA), seeks to verify the existence of relationships between knowledge and attitudes and between knowledge and environmental behaviour. In this instance, data collection involved a questionnaire aimed at assessing the overall environmental knowledge of respondents as well as their attitudes and behaviours regarding energy issues (savings, consumption, interest, use). The results pointed to the lack of relationship between knowledge and attitudes, and between knowledge and behaviour whilst the relationship between attitudes and behaviour proved to be only weak. The results also found that males, older students and those studying Engineering and the Social and Human Sciences are those reporting higher levels of environmental knowledge. However, when it comes to attitudes and behaviours, females seem to display more awareness around these issues.

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1. Introduction

The advancing degradation of natural resources caused by human activities has been the subject of discussion in contemporary societies and by consumers worldwide with the idea of environmental responsibility gaining ever-greater relevance (Nisbet and Myers, 2007). This awareness around environmental issues correspondingly stresses the role that each citizen and society in general holds for the resolution of the ongoing and unfolding environment crisis. This also raises the issue of sustainable development as a priority in public debate.

Over recent years, various research findings have affirmed that the greater the level of information held by consumers on environmental matters, the greater their concern over adopting pro-environmental behaviours (Seth et al., 2011; Misra and Panda, 2017). Nevertheless, consumer interests in green marketing and other social concerns differ from country to country (Auger et al., 2007; Paul et al., 2016). Polonsky et al. (2012) emphasise how despite consumers grasping the importance of environmental issues, they may not necessarily grasp the complexity of the associated problems. These differences are also found in different buying contexts. For instance, Chowdhury et al. (2016) reported that consumer preferences regarding green cars in Sweden were usually sensitive to changes in fuel efficiency and emission levels. According to Polonsky et al. (2011) and Misra and Panda (2017), the concern over environmental and social questions reaches its highest level among consumers in western countries; those same consumers responsible for the largest proportion of environmental pollution.

Taking into account the information that has become available on the environment in recent years, we might expect that many consumers review their consumption patterns and opt for more environmentally friendly habits even while some studies show precisely the opposite trend occurring (e.g. McDonald et al., 2015). In order for consumers to adopt responsible consumption measures, Polonsky et al. (2011) affirm that such purchase decisions implicitly involve the assumption that the consumer understands the consequences of the respective purchasing options taken.

As Bulkeley (2000) details, whenever consumers do not grasp the complexity of the information provided to them, they thus remain unable to alter their behaviours and therefore do not reduce the impact of their actions on the surrounding environment. The
studies by Lorenzoni et al. (2007) and Gardner and Stern (2008) report clear evidence that even in situations in which people are motivated to change their behaviours in relation to energy, many do not have precise, accessible and tangible information about the benefits of such actions. Polonsky et al. (2012) refer to how false ecological allegations may lead consumers not to change their behaviours as they do not trust in the information conveyed to them and especially when unable to verify its validity and veracity and thereby rendering more difficult efforts undertaken to change such behaviours. According to Cotton et al. (2015a), literacy implies an understanding of the questions involved in conjunction with the capacity and willingness to apply such knowledge in a functional fashion. Thus, without any clarity in the information provided, given how some supposedly pro-environmental positions are erroneously conveyed to society and due to the fact that consumers do not hold sufficient information about the subject, they may end up adopting behaviours that, in overall terms, do not benefit the environment and even to the extent of discouraging them from doing more for the environment.

Polonsky et al. (2011), Polonsky et al. (2012) and Kalafatis et al. (1999) all detail research approaching the environment attitudes and knowledge of consumers in order to encounter some consensus as regards the implications for environmental behaviour. As a means of grasping the interconnections between the level of knowledge and real behaviours, there has been widespread recourse to the Theory of Reasoned Action (TRA) that incorporates the connections between environmental attitudes and environmentally friendly behaviours. In its “purest” form, TRA suggest that behaviour results from intention that, in turn, is a function of attitudes and subjective norms (Taufiquea et al., 2016). These same authors used this approach to analyse general environmental knowledge and knowledge of eco-labels to investigate their role in predicting ecologically conscious consumer behaviour.

These findings raise an important question as regards behaviours towards the environment and the ways in which these are influenced by an individual’s knowledge about the theme. Hence the importance and the need to deepen research into the process of how environmental knowledge influences attitudes and in addition to the ways in which this environmental knowledge interacts with behaviours expressed not only within the scope of purchasing green products but also as regards the consumption of resources and energy.

Thus, based upon TRA, this study strives to evaluate just how environmental knowledge shapes environmentally friendly attitudes and more responsible behaviours in relation to the surrounding environment. The study is correspondingly structured around: a set of questions that seek to analyse attitudes and behaviours towards consumption and the saving of energy as well as evaluating the general level of environmental knowledge prevailing among university students. To this end, the study incorporates research stemming from the collection of information via a questionnaire completed by students at a Portuguese higher education institution.

2. Pro-environment knowledge, attitudes and behaviours – what relationship?

Throughout recent years, there have been a plethora of articles approaching environmentally responsible consumer related themes even while such research normally adopts variations on the TRA proposed by Ajzen and Fishbein (1980) or the Theory of Planned Behaviour (TPB) by Ajzen (1985). Regarding TRA, Paul et al. (2016) refer that the model was initially developed to predict intentions (predisposition to engage into a certain behaviour - Ajzen, 1985) that, in turn, would lead to reasoned action in common life experiences. Over time, TRA started to be used to analyse more complex decisions, and now is considered more effective at explaining psychological/cognitive processes to comprehend consumers’ contextual decision-making. Translating this to the scope of environmentally friendly behaviour, the intention to buy green products indicates the extent to which consumers’ are willing to buy these products and/or adopt green alternatives.

Ferrell and Gresham (1985) affirm that the TRA model has already undergone testing over the course of the years in various different countries and with the interrelationships explored across a range of research contexts and scopes. Some of these studies focus on questions approached in this research project, hence, regarding environmental knowledge, attitudes and intentions. One example is the work of Arcury (1990) who concludes that environmental knowledge among North American consumers positively interrelated with their behavioural attitudes and intentions. In the case study by Bang et al. (2000), striving to ascertain the willingness of consumers to pay more for renewable energy, concludes that there was a positive relationship between environmental knowledge and environmental attitudes and that this drove a greater level of willingness to purchase renewable energy despite this coming with a higher cost.

Arcury (1990), Barber et al. (2009), Flamm (2009) and Polonsky et al. (2012) observe how attitudes tend to be positively altered in conjunction with higher levels of knowledge and that environmental knowledge, along with associated attitudes, represents a catalytic factor in driving environmental friendly purchasing behaviours. Polonsky et al. (2012) also back this logic in affirming that to the extent consumers gain more information about environmental issues, they tend to modify their attitudes in relation to these same matters, which, in turn, leads them to make changes to their purchasing behaviours.

Despite the majority of studies reporting such relationships between knowledge, attitudes and behaviours, others, such as those by Ger (1999) and Carrete et al. (2012) convey how despite the information today available on environmental matters, many consumers only attribute a low level of importance to protecting the environment. Additionally, Fotopoulos and Krystallis (2002) reach similar conclusions in a study made of Greek and Indian consumers with the former, for example, holding high levels of knowledge about organic food production but still only undertaking low levels of organic produce purchase and consumption.

Thus, we may reasonably conclude that the relationships between environmental knowledge, attitudes and behaviours are complex and with various authors failing to reach any agreement as to the fundamentals of the relationships between understanding, beliefs and subsequent actions (Hines et al., 1987). There is a vast range of advanced models developed as the means to test and measure the influence of the various specific variables interconnecting attitudes and behaviours as well as exploring the specific conditions in which attitudes may generate the greatest impact on behaviours (e.g. Bamberg and Moser, 2007). However, the results do still tend to differ from study to study. For example, Cleveland et al. (2005) state that general environmental attitudes tend to be poor predictors of behaviour. In turn, a study by Balderjahn (1988) concludes that individuals displaying a more positive attitude towards the surrounding environment also hold a greater propensity to acquire and consume green products. Meanwhile, Laroche et al. (2001) corroborate this argument in suggesting that attitudes, to the contrary of knowledge, are the most significant indicators as to the willingness of consumers to pay more for environmentally friendly products.

According to Maniatis (2016), there are multiple indicators influencing consumer’s knowledge, commitment and awareness of consumers regarding environmentally friendly products. Related to
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