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Key factors to explain recycling, car use and environmentally responsible purchase behaviors: A comparative perspective



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ABSTRACT

This study proposes a multidimensional approach to promoting pro-environmental behaviors. Specifically, the model proposed examines the impact of: (a) environmental attitudes and beliefs, (b) certain socio-demographic factors, (c) economic characteristics and d) environmental sensitivity variables in the development of three environmentally responsible behaviors: purchase, recycling and reducing car use. The data are provided by a survey carried out in 2012 by the Centre for Sociological Research in Spain. Overall, the results show, in the first place, the importance of activism, environmental attitudes and beliefs, and the interest for environmental information to explain the development of the three proenvironmental behaviors. Second, they reveal that demographic and economic characteristics, such as age, educational level or place of residence, have less relevance in this decision process. From a comparative perspective, their effects differ little according to the particular behavior analyzed. Finally, the results reveal the importance of constructing complex models including situational and psychological factors when it comes to analyzing pro-environmental behavior.

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1. Introduction

The urban lifestyle of society today, more specifically, consumption, transport and industrial production, places us in a position of direct responsibility regarding the greater part of the environmental problems humanity faces. Solving these global imbalances involves changing our daily habits and affects citizens, industry and public authorities (Da Cruz et al., 2014). These new habits would include encouraging the purchase of products with minimal packaging and energy-efficient appliances and promoting recycling and reduced car use, all of which help improve environmental quality. In order to successfully change habits, it is necessary to implement and advertise national and localized initiatives as well as to compare different schemes and frameworks in different countries (Da Cruz et al., 2014). In other words, thinking globally, planning nationally and acting locally is crucial in order to ensure a sustainable future for all (Vasi, 2007).

In Europe, different initiatives have been developed to consider environmental problems. For example, the recent Europe 2020 strategy promotes a more resource-efficient, greener and more competitive economy for the 21st century (European Commission, 2010). In particular, the Commission proposes the following EU environmental targets: (a) reduce greenhouse gas emissions by at least 20%; (b) increase the share of renewable energy sources in our final energy consumption to 20%; and (c) 20% increase in energy efficiency.

In this context, new initiatives, such as the Roadmap to a Resource Efficient Europe (European Commission, 2011) are being promoted across Europe. This initiative aims for Europe's economy to become sustainable by 2050 and focuses mainly on certain areas such as increasing recycling and waste prevention, improving product design and resource and energy efficiency. New European Directives are going to consider the environmental impact of many daily activities (e.g. Ecodesign, Landfill, Waste Framework, Packaging and Packaging Waste and its amending acts, Eurovignette, and Industrial Emissions Directives), aiming through each at the improvement of environmental sustainability (Steg and Vlek, 2009; Ramayah et al., 2012; Susilo et al., 2012).

These targets should be translated into national and regional targets to develop changes in producers and consumers' behavior. In particular, many European countries are making special efforts to promote recycling, which has numerous environmental benefits, including diverting waste for landfill, avoiding pollutant emissions

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and conserving natural resources (Botetzagias et al., 2015), as well as social and economic benefits such as providing new jobs (e.g. Williams et al., 2008). Also, many countries are applying the Eurovignette to reduce the emissions produced by road transportation, promoting other initiatives at local level such as car sharing, the use of public transport and bicycles in cities, etc.

In Spain, environmental concern seems to be high; 79% of the Spanish population affirm that it is important to take care of the environment (ISSP, 2010). Nevertheless, this general awareness does not translate into active behavior to protect the environment. For example, only 11% and 6% of Spaniards buy environmentally-friendly products and organic products, respectively. The only exception seems to be recycling, 55% of the population being involved in it¹ (CIS, 2012). This contradiction between attitudes and behavior could be partially explained by the fact that only 45% of the Spanish population regards itself as being well informed on environmental issues, the European average being 55% (European Commission, 2008).

In this context, the Spanish Ministry of Agriculture and Environment (MAGRAMA), in close collaboration with regional and local authorities, has promoted different environmental education programmes in schools to increase awareness of environmental problems. In particular, the environmental education programme "Hogares Verdes" (Green Homes), which aims at increasing awareness and promoting more environmentally-friendly behaviors in Spanish households (Spanish Ministry of Agriculture and Environment MAGRAMA, 2012) is worth mentioning here.

Accordingly, our research aims to analyze, by means of structural equation models, how different economic and sociodemographic factors, along with people's attitudes and factors related to environmental sensitivity, explain three different pro-environmental behaviors: recycling, reducing car use and pro-environmental purchase selected as habitual behaviors that show interest of the population to improve the environmental situation. This analysis is based on the latest dataset built by the Spanish Centre for Sociological Research (2012) about environmental attitudes and behavior in Spain, based on an original sample of 2472 individuals.

The present research extends the scope of the analysis of prior literature by focusing on a multidimensional approach considering simultaneously three different pro-environmental behaviors: recycling, reducing car use and pro-environmental purchase. In addition, we analyze the joint impact of different classic factors such as socio-demographic and economic characteristics and other more novel factors such as the impact of environmental sensitivity and the importance of environmental attitudes and beliefs (attitudinal characteristics). Consequently, the novelty of this paper is the combined analysis of different factors: situational (or socio-demographic and socio-economic characteristics) and psychological (or environmental sensitivity and attitudinal characteristics) to explain simultaneously in a multidimensional approach three different pro-environmental behaviors: recycling, car use and purchase environmental behaviors. Therefore, we could explore whether these factors have different effects on the three mentioned pro-environmental behaviors.

The paper is organized as follows. An overview of the relevant literature regarding the determinants of pro-environmental behavior is provided in Section 2, which allows us to establish

a number of hypotheses to be contrasted. In Section 3 the data and the methodology are presented. Section 4 comprises the main results of our study. The final section presents the main conclusions and discusses issues for further research.

2. Pro-environmental behavior determinants

Pro-environmental behavior has been defined as intentionally reducing the negative impact that an action can have on the environment (Stern, 2000a,b; Kollmuss and Agyeman, 2002) and it has been conceptualized in different ways. Pro-environmental behavior has been operationalized as recycling (Collins et al., 2006; Hage et al., 2009; Sidique et al., 2010a,b; Ramayah et al., 2012; Fiorillo, 2013; Botetzagias et al., 2015), transport use (Eriksson et al., 2008), household consumption (Goshu, 2012), household waste management (Tucker and Speirs, 2003; Barr, 2007; Jones et al., 2010) and energy consumption (Cayla et al., 2011). Research has addressed not only consumption habits but also purchase patterns in different areas, such as buying green products (Ramayah et al., 2010), eco-labeled food products (Grankvist and Biel, 2007), new cars (van Rijnsoever et al., 2009) and electrical appliances (Gaspar and Antunes, 2011). Thus, the environmental literature has focused on the study of those behaviors which might have a significant impact on environmental quality and quality of life of citizens. However, the mere identification of the specific behaviors that need to be changed in order to improve environmental quality is not enough; we also need to identify consistent patterns of environmental behavior and study the common backgrounds and motivations in these patterns (Steg and Vlek, 2009; Saphores et al., 2012). The study of common backgrounds such as socio-economic and attitudinal factors can help change a variety of behaviors which would in turn trigger positive environmental effects (van Rijnsoever et al., 2009; Raymond and Brown, 2011). Few studies, however, have so far analyzed a complete set of determinants to promote pro-environmental behaviors (Torgler and García-Valiñas, 2007).

Initially, the analysis of the nature of pro-environmental behavior focused on the study of socio-demographic factors, such as age, gender, education, marital status and place of residence, personal economic situation, and political factors such as political interest (Torgler and García-Valiñas, 2007; Brécard et al., 2009; Sidique et al., 2010a; Saphores et al., 2012; Botetzagias et al., 2015; Makki et al., 2015). Overall, these studies suggest that women, the middle aged and older population, those more educated, with higher personal income, married and urban residents tend to be more environmentally aware. The trust of citizens is an aspect that has been widely neglected in the environmental literature (Torgler and García-Valiñas, 2007). Trust is one of the three concepts encompassed by social capital: "most people build trust in and networks to others and come to cooperate with them" (Paldam, 2000). Therefore, the level of trust in people is a crucial aspect, which accounts for pro-environmental behavior aimed at contributing to environmental improvement. Positive impact of social capital on household environmental behavior has been previously emphasized by Collins et al. (2006), Jones et al. (2010) and Fiorillo (2013). In this regard, we look into whether Spaniards' confidence in the economic prospects for their country affects their environmentally responsible actions. All this leads to the first study hypothesis, which posits that socio-demographic (H1) and economic factors (H2) determine environmentally responsible behavior on the part of citizens. Specifically,

H1. Socio-demographic factors such as women (a), older people (b), the well-educated (c), urbanites (d) and married people (e) carry out more frequent pro-environmental purchase, recycling and car use behaviors.

¹ It should be pointed out that unlike other environmental issues, recycling has some targets imposed by EU through the Packaging and Packaging Waste Directive (94/62/EC) and its amending acts (Directive 2004/12/EC, Directive 2005/20/EC, Regulation Nr 219/2009 and Commission Directive 2013/2/EU). See European Commission (2015) and Alwaeli (2010) for more details. This situation might help to explain the different levels of environmental behavior shown by Spanish citizens.

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