



Does gender make a difference in pro-environmental behavior? The case of the Basque Country University students

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ABSTRACT

Identifying factors that promote pro-environmental behavior has become a key task in forecasting future environmental needs and trends in society and in designing products, educational programs and policies which meet society's environmental demands. The aim of this study is to contrast how gender affects environmental behavior through its influence on psychological factors that determine pro-environmental behavior and in a cultural context with laws that promote gender equality. A sample of 1089 university students is analyzed to estimate the effect of psychological factors (motivations, attitudes, perceived consumer effectiveness (PCE) and environmental knowledge) on behavior towards the environment from a gender perspective. To model such behavior and direct better environmental policies and strategies an ordered logit model is developed for each gender. Significant differences are found, with specific factors affecting each gender's pro-environmental behavior. Elasticity values are generally higher for men, so men are likely to be more sensitive to programs that attempt to change their behavior. This work adds new knowledge to the field of pro-environmental behavior from a gender perspective. It not only identifies how gender influences behavior towards the environment but also determines the different factors that affect the pro-environmental behavior of each gender and the extent of that effect.

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1. Introduction

Many current major environmental problems (climate change, urban pollution, waste, etc.) have become relevant issues for policymakers, psychologists, educators, businesses, and other parties interested in enhancing and encouraging acceptance of pro-environmental behavior (Steg and Vlek, 2009). Taking into account that universities educate people to perform important social roles effectively (Frank and Meyer, 2007), university students can be seen as some of the leaders of the future and as such a reference group for others (Lozano et al., 2013; Zilahy and Huisinigh, 2009). They are not, of course, the only people who can access high levels of knowledge and top positions, but they are probably the main group who acquire the technical and specialized knowledge necessary to carry out appropriate decisions and solutions for a

more sustainable world. This being so, it is important to identify what factors encourage them to behave pro-environmentally, so that the effectiveness of pro-environmental interventions and policies of universities and governments can be increased in the near future.

Environmentalism is a relative recent area of research, so findings about pro-environmental behavior patterns that are supposedly affected by levels of environmental concern and other variables are not yet conclusive (Stern, 2000; Xiao and McCright, 2015). Researchers have found that women show relatively stronger environmental concern and behavior than men (Dietz et al., 2002; McCright, 2010; Xiao and McCright, 2015). Different explanations have been given for this. Theorizing in this field has been linked to insights from sociological theories of gender that posit differences in the early socialization process roles and statuses of each gender (see Gilligan, 1982). According to a report by the OECD (2012), in many countries women have less access than men to formal adult education and training, information, and technology. Women are also underrepresented among students in higher education and graduates in fields of study that are considered as male domains (e.g. engineering). Women and men may also play

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different roles in protecting the environment at community and domestic levels of decision-making. Therefore boys and girls may be socialized on the basis of the dominant culture in their society –women as the caregivers of the family and men as the breadwinners–thus perpetuating differences in pro-environmental behavior from a gender perspective. In this regard students are asked whether gender still affects environmental behavior in a social context where there are gender equality laws and where more women than men study for university degrees. Do women show a higher level of pro-environmental behavior than men? What factors influence the behavior of each gender towards the environment? How do changes in those factors affect the pro-environmental behavior of each gender? These as yet unanswered questions are the focus of our research here. Gender might explain biases and contradictions found in previous research into pro-environmental behavior, many studies have failed to take its influence as a demographic factor into account, probably due to the decreasing significance attributed to demographic factors in environmental research since the 1980s (Gilg et al., 2005; Xiao and McCright, 2015).

This paper seeks to examine how a set of pro-environmental activities conventionally defined as “daily” and “private-sphere” behaviors are affected by gender and whether university students can be modeled according to gender and a set of psychological and cognitive variables which supposedly influence pro-environmental behavior.

There are two main justifications for this work: First, previous research in this area is rather fragmented, and if university students are seen as a group of future leaders who will probably act as a benchmark for other groups they deserve to be studied as a group *per se* in regard to environmental aspects. Moreover, environmental research has often focused on students who are in the last years of high school but little is known about higher education students (Lasso de la Vega, 2004).

In this work a sample of students from all the degree courses taught at a public university in a single geographical area (Bizkaia, Spain) is surveyed to analyze the influence of a wide group of factors, including gender as the primary independent variable, on a set of pro-environmental behaviors (recycling of different types of waste, use of public transport for reasons of environmental protection, and green purchasing).

Second, this paper attempts to shed light on how the factors analyzed are shaped by gender and how they interact with one another and influence pro-environmental behavior under the gender perspective. There has been relatively little recognition of its potential in the context of environmentally responsible behavior (Sakellari and Skanavis, 2013).

In short, this paper sets out to identify the major factors that influence environmental behavior among male and female university students, trying to find whether or not they are the same, and to determine the relative influence (elasticity) of each factor on the pro-environmental behavior of men/women. Thus, incorporating findings about gender differences in attitudes, motivation, environmental knowledge and behaviors, environmental education policies of institutions (e.g. universities), etc., will serve to inspire women and men to engage in effective pro-environmental action and sustainable behavior.

The influence of gender on environmental behavior is checked and an ordered logit model is developed in order to predict how a relative change in one significant factor might affect the probability of pro-environmental behavior among university students of each gender. Moreover, to obtain more precise predictions and propose more appropriate environmental policies and strategies, two separate models – one for each gender – are also developed which show clearly how the factors analyzed interact for each

gender and influence pro-environmental behavior with different elasticity or intensity levels.

2. Contextualization of pro-environmental behavior in relation to gender

The concept of pro-environmental behavior can cover different meanings, discourses, and forms of behavior in any one context. This analysis is focused exclusively on daily and private-sphere environmental behavior, so the first step is to make clear what the concept should be understood to mean here.

2.1. Concept and types of pro-environmental behavior

Following Stern (2000), pro-environmental behavior can be defined as behavior “that is undertaken with the *intention* to change (normally, to benefit) the environment” (Stern, 2000). It is this intent-oriented definition that is adopted in this paper in order to identify motives, reasons, beliefs, etc. held by university students that influence behavior towards the environment, with a view to understanding and adopting measures to encourage sustainable behavior in this group.

Pro-environmental behavior can also comprise different types of behavior, which can be determined by different combinations of causal factors (Bamberg and Moser, 2007; Gilg et al., 2005; Kollmuss and Agyeman, 2002; Stern, 2000). To start with, it is important to distinguish between pro-environmental behavior in the public sphere (e.g. petitioning on environmental issues), in the private sphere (e.g. green purchasing, recycling, etc.), and in organizations (Stern, 2000). Public-sphere behavior affects the environment indirectly, and its effects can be substantial (e.g. public policies can change the behavior of many people at once), but private-sphere behavior has direct environmental consequences: Although the environmental impact of individuals is small, environmentally significant impacts can be achieved when many people implement the same target behavior (Stern, 2000). Individuals may also influence (and be influenced by) the behavior of others towards the environment, e.g. by intervening in the actions of organizations which they belong to (e.g. universities may include environmental criteria in their study plans and in the actions and routine tasks of staff and students, or may install containers for recycling paper, plastic bottles, batteries, etc.). Universities can certainly play an important role in changing behaviors and promoting pro-environmental behaviors, and that in itself is justification enough for studies such as this one.

The causal factors for each type of behavior may be different, so this paper analyzes only private-sphere pro-environmental behavior.

2.2. Gender and explanatory factors of pro-environmental behavior

Various theories have been used to explain pro-environmental behavior. Environmental psychology and environmentalism-based theories have mainly explored the role of certain personal variables such as attitudes, beliefs, norms, and values in explaining pro-environmental behavior. These theories have helped to show the significance of personal variables in predicting environmental concern and behavior. However, little attention has been paid to theories that explain pro-environmental behavior by taking gender differences into account (Eisler et al., 2003; Xiao and McCright, 2015). Some studies suggest that women tend to exhibit some types of pro-environmental behavior (as shown in the literature review below) to a greater extent than men do (Aoyagi-Usui et al., 2003; Davidson and Freudenburg, 1996; Hunter et al., 2004; Xiao and McCright, 2014; Zelezny et al., 2000). Findings are not robust

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