



# Are Environmentalists Altruists? An Empirical Study

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## Abstract

Previous studies on environmental evaluation suggest that women have more altruistic preferences and therefore value the surrounding environment more than men. This study examined the relationship between environmental concerns and altruistic preferences in a simple way. As a result, unlike findings from previous studies, both variables did not correlate with each other. Moreover, gender differences in altruism were confirmed, but those in environmentalism were not. A possible explanation for such discrepancies is that altruistic preferences are context-specific and not invoked until altruistic decisions are defined based on environmental issues.

## Subject Areas

Environmental Economics

## Keywords

Environmentalism, Altruism, Gender Differences, Online Survey

## 1. Introduction

Altruism has been regarded as one of the most closely related preferences in environmentalism up to the present. Theoretical works suggest that altruistic preferences sustain environmental concerns, subsequently leading to pro-environmental behavior (Merchant [1]; Stern, Dietz, & Kalof [2]; Stern & Dietz [3]). In a similar way, experimental works on the governance of common pool resources imply that the more altruistic subjects are, the more likely they are to act for the group's interests (Ostrom *et al.* [4]). The correlation between altruistic preferences and environmental concerns seems to be natural because many environmental problems involve decisions affecting the welfare of other people, including the maintenance of common pool resources. However, not enough evidence

has been provided for this explanation thus far. This is partially because most previous studies define altruistic preferences within the context of environmental protection, which has been their main focus. Unlike prior research, this study measures altruistic preferences in a context that is totally independent from environmental issues, and explores the connection between altruistic preferences and environmental concerns in a simple way.

## 2. Survey Design

The survey was administered to Japanese respondents online. Of all 630 participants, the male-to-female ratio was 1:1. Except for this aspect, participants were randomly sampled, regardless of their individual attributes such as age, income, and civil status.

### 2.1. Measuring Environmental Concerns

Individuals' environmental concerns were gauged via a quiz that tested their understanding of local and global environmental problems.<sup>1</sup> The quiz was based on the Tokyo Chamber of Commerce and Industry's Certification Test for Environmental Specialists, one of Japan's most common tests on environmental awareness. Respondents answered 10 questions, each of which contained two options they could choose from. Their respective scores (hereafter referred to as the *E*-score) ranged from 0 to 10 (depending on the number of correct answers) and represent the extent of their environmental awareness.

### 2.2. Measuring Altruistic Preferences

Altruistic preferences were quantified using the psychological scale developed by Rushton, Chrisjohn, and Fekken [6]. The scale was based on the depiction of people described within the context of Japanese culture. The scale ranged from 10 to 50; a higher score indicated a more altruistic preference.

## 3. Results

### 3.1. Gender Differences

As a preliminary check, **Table 1** lists the descriptive statistics of *E*-scores and altruistic scores by gender. As shown, gender differences were observed in the mean altruistic scores, but not in the mean *E*-scores. The mean altruistic score of females was greater than that of males, which was statistically supported. **Table 2** shows the results of the Wilcoxon rank-sum test and the t-test for gender differences. In both tests, the altruistic scores of women were significantly different from those of men at the 1% level. In contrast, such discrepancies based on gender were not confirmed in *E*-scores at the 10% level.

Gender disparities in environmentalism are a major topic in the literature on environmental evaluation. The literature typically implies that women have

<sup>1</sup>Unlike this study, Kotchen and Reiling [5] measured individuals' environmental attitudes using the New Ecological Paradigm scale.

**Table 1.** Descriptive statistics of *E*-scores and altruistic scores by gender.

	<i>E</i> -score		Altruistic score	
	Males	Females	Males	Females
Mean	6.429	6.419	23.702	25.422
Standard deviation	1.303	1.362	7.361	6.870
Minimum	1	3	10	10
Maximum	10	10	45	43
Observations	315	315	315	315

**Table 2.** Tests for gender differences in the *E*-score and altruistic score.

	<i>E</i> -score	Altruistic score
Wilcoxon rank-sum test	0.453	3.306*
t-test	0.090	3.033*

Note: \*denotes significance at the 1% level.

more altruistic preferences and thus value the surrounding environment more than men (Dietz, Kalof, & Stern [7]; Arnocky & Stroink [8]). Unlike that suggestion, this study did not observe gender differences in environmentalism.

### 3.2. Multiple Linear Regression

Next, a multiple linear regression was conducted to examine variables that influenced the *E*-score, which was a dependent variable. The independent variables that were adopted included altruistic score, age, gender, and employment. In addition to gender, employment was also a dummy variable; a score of 1 was assigned if the respondent was a full-time worker, and 0 if otherwise. **Table 3** summarizes the results. Apparently from the table, none of the independent variables were significant at the 10% level, except for the constant term. As an alternative way to confirm these findings, Spearman's rank correlation coefficients were calculated, as shown in **Table 4**. As we can see, all the coefficients were quite consistent with the outcomes of the multiple linear regression. Consequently, using pooled data between men and woman, it was found that altruistic preferences do not significantly impact environmental concerns.

### 4. Concluding Remarks

This study examined the relationship between environmental concerns and altruistic preferences in a simpler way than prior investigations. Unlike the findings of previous research, both variables did not correlate. Moreover, gender differences in altruism were confirmed, but those in environmentalism were not. A possible explanation is that altruistic preferences are context-specific and not invoked until altruistic decisions are defined based on environmental issues. Another possibility is that there might be a cultural difference between the countries in which the sampled populations live, although the sample size of this

**Table 3.** Results of multiple linear regression.

Independent variable	Coefficient	Standard error
Constant	6.166*	0.298
Altruistic score	0.054	0.008
Age	-0.001	0.004
Gender	-0.018	0.116
Employment	0.022	0.116

Note: \*denotes significance at the 1% level.

**Table 4.** Spearman's rank correlation coefficients.

	E-score
Altruistic score	0.047
Age	-0.007
Gender	-0.018
Employment	0.007

Note: None of the correlation coefficients are significant at the 10% level.

study is too small to draw a conclusion. This could be a possible path for future research.

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## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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