

Correlations among Personality Variables in Relation to Environmental
Interests, Concerns, and Attitudes
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The human impact on the earth, which is often negative, is clearly a global and controversial issue that has the potential to impact every individual. In order to understand how to address this issue effectively, it is imperative to find out who is open minded towards that topic and what personality traits tend to correlate with environmental awareness. This information might be helpful in encouraging individuals to start behaving pro-environmentally to avert further ecological damage. Our focus is on personality dimensions and behaviors associated with interests in sustainability expressed by environmentally motivated students in comparison to students less concerned with the topic.

While there is a wide array of personality traits possibly associated with an environmental interest, a number of these might be more likely to be related to an awareness of, and concern about, the global environmental issues. Based on the literature as well as interests of the researchers, several personality dimensions were chosen for their potentially meaningful relationships with environmental issues; specifically self-esteem, self-efficacy, personal fields of interests such as political affiliation, religious background, food preferences, sex, extracurricular activities, and opinions on the legalization of marijuana were examined. We are interested in how personality and attitude factors relate to environmental concern, or what other traits might be predictive of these environmental attitudes and pro-environmental behaviors.

According to Hunter, Hatch, and Johnson (2004), “the term environmental concern refers to the degree to which people are aware of problems regarding the environment and support efforts to solve them and/or indicate a willingness to contribute personally to their solution” (p.678). The term “pro-environmental behavior” as used in most of the research presented can be defined as any “behavior that consciously seeks to minimize the negative impact of one’s actions on the natural and built world (e.g. minimizes resource and energy consumption, use of non-toxic substances, reduce waste production).”(Kollmuss & Agyeman p.240).

Numerous studies have been conducted, especially in the past 20 years, with inconsistent results in research. While social and political context as well as personal values and belief play an important role in environmental concern and behavior, research has been unable to predict pro-environmental attitudes or behavior based on personality assessment.

One variable that has yielded mixed results is self-efficacy, which is often described as an individual’s ability to accurately plan and implement actions in order to solve problems or succeed in a specific task (Myers, 2010). Walton and Austin (2011) found that the relationship between self-efficacy and recycling as a pro-environmental behavior was unreliable over time. Another study found that self-efficacy tended to correlate positively with pro-environmental behavior (Meinhold & Malkus, 2005). Another variable examined was self-esteem, which is often described as a person’s “overall self-evaluation or sense of self-worth” (Myers, 2010). While Allen and Ferrand (1999) found no relationship between self-esteem and “environmentally responsible behavior” (p. 344), Meinhold and Malkus (2005) did find a direct correlation between high self-esteem and pro-environmental attitudes and concerns. The results also showed a possible increase in self-esteem due to pro-environmental actions. Other research has shown slightly lower self-esteem values for women than men (Puskar, Bernardo, Ren, Haley, Tark, Switala, & Siemon, 2010). However, Marčič and Kobal Grum(2011) did not find a significant difference between males and females on self-esteem. As with self-esteem, the results concerning gender and pro-environmental behavior are also inconsistent. Ratnapradipa, Brown, Middleton and Wodika (2011) reported a positive correlation between males and positive attitudes towards pro-environmental behavior, however there was no clear connection of these attitudes and concrete actions.

In fact, although the findings indicate positive attitudes, many specific conditions have to be met for an individual to express this attitude behaviorally. Therefore, attitudes themselves are

poor predictors of actual behavior (Myers, 2010). Women, for instance, were more emotionally connected with the environmental issue, but do not express much pro-environmental action. Men however, were more likely to publicly engage in pro-environmental activism, such as volunteer time, protest, attend public meetings etc. (Hunter, Hatch & Johnson, 2004). This argument was also used by Allen and Ferrand (1995) in order to explain the findings of their research. The results indicated that altruism and sympathy are both positively correlated to increased pro-environmental behavior. Allen and Ferrand (1995) used Geller's "actively caring" hypothesis, which states that an "altruistic state of actively caring occurs when an individual's needs for self-esteem, belonging, personal control, self-efficacy, and optimism have been satisfied" (p. 339). Kollmuss and Agyemen's (2002) findings also support this idea in a more general way, not specifically targeting women. They propose that general personal needs have to be met before attention can be focused on larger issues like the environment.

Although many people do not consider it essential to our survival, the environment provides our foundation for life and needs to be respected as such. Kollmuss and Agyemen's research also shows that the stronger the egotistical motivation, which "is concerned with the removal of suffering and harm from oneself", for an action, the more likely this action is to be performed (Kollmuss & Agyemen, 2002). Even though environmental concern might be present within an individual, there are several aspects that determine if and how this individual may act upon these concerns. Much of the literature refers to one or another version of Diekmann and Preisendoerfer's (1992) low-cost/high-cost model (as cited in Kollmuss and Agyemen, 2002). This model suggests that, an increase in the cost of pro-environmental behavior correlates with a decrease in significance of attitudes towards pro-environmental behavior. Here, cost is not considered in the sense of currency but in a broader psychological view including factors like "time and effort needed to undertake a pro-environmental behavior." (Kollmuss & Agyemen, 2002) However, Walton and Austin (2011) analyzed the relationship between income and pro-environmental behavior and found conflicting results. Therefore, income and the literal cost of eco-friendly behavior cannot be seen as a determining factor for such behavior.

Another variable of interest was political affiliation. Current research has found that individuals with democratic and liberal views were more likely to engage in environmentally friendly behavior than individuals supporting republican and more conservative ideas (Sherburn & Devlin, 2004; Walton & Austin, 2011). Therefore, it can be said that there is a connection between political affiliations and environmental interests.

However, Kollmuss and Agyemen (2002) argue that it is impossible to directly associate specific aspects with reasons for and against environmental behavior.

With our research, we hoped to gain a better understanding of the numerous personality variables that contribute to the development of pro-environmental attitudes and also the physical expression of pro-environmental behavior. We predicted that aspects like race, gender, and income will not show any relationship to eco-friendly behavior. However, we anticipated a stronger, possibly significant relationship between liberal or democratic political views and proactive behavior than conservative or republican views. In addition, we expected to find a relationship between self-efficacy and pro-environmental behavior. Due to Allen and Ferrand's (1995) clear findings on self-esteem, we did not expect it to have any significant relationship to behavioral activism in and of itself. However, we assessed whether self-esteem interacts with other personality dimensions to emerge as a partial explanation for attitudes and reported behaviors.

Methods

Participants

The participants in our study were students enrolled in Behavioral Science courses at a small liberal arts university in Alabama (University of Montevallo) in the Fall semester of 2012. There

were 91 participants, 67 of which were female and 24 male, ranging between the ages of 18 and 52 ($M=20.96$). Of these students, 25 were freshmen, 29 were sophomores, 18 were juniors, 14 were seniors, and 5 who did not specify.

Procedure

Subjects were given a questionnaire packet, including a consent form, a demographic survey to assess the student's political affiliation, financial family background, as well as ethnic and religious background, and five additional measures. The survey was entirely anonymous and the participants were told not to include their name on the survey packet anywhere other than the consent form. To ensure the participants' anonymity, the signed consent form was separated from the packet and placed in a specific envelope apart from the finished surveys.

Materials

Five self-reporting measures were used in order to analyze the participants' environmental concerns, attitudes, and behaviors as well as personality traits. The Measure of Ecological Attitudes and Knowledge Scale by Maloney and Ward (1973) was shortened from 30 to 17 items and the scaling was changed from true and false to a scale from zero to four, zero being strongly disagreeing and four being strongly agreeing. Examples of statements include "I'd be willing to ride a bicycle or take the bus to work in order to reduce air pollution."

Another measure was the Environmental Concern Scale (Weigel & Weigel, 1978), which consists of 16 statements such as "Pollution is not personally affecting me" and "Even if public transportation was more efficient than it is, I would prefer to drive my car to work." The participants graded these statements from 0-4 (0=strongly disagree and 4=strongly agree).

Additionally, the New Environmental Paradigm Scale, which is a slight variation of Dunlap, Van Liere, Mertig, and Jones' (2000) New Ecological Paradigm Scale Revised, was used. Example statements from this scale include "Humans are severely abusing the earth". Participants rated statements like this on a scale from 0-4 (0=strongly disagree and 4=strongly agree).

The fourth measure in the survey was the GESS, Generalized Expectancy for Success Scale, (Fibell & Hale, 1978). This 30 statement measure, scaled from 1-5 (1=highly improbable and 5=highly probable), evaluates the participants' self-efficacy through statements such as "In the future I expect that I will succeed at most things I try."

The final measure used was the RSE, Rosenberg Self-Esteem Scale (Rosenberg, 1965). This 10 statement measure is scaled from 1-4 (1=strongly agree and 4=strongly disagree), including statements such as "On the whole, I am satisfied with myself".

Results

Correlation analyses of all the scales and subscales revealed several significant correlations. In support of our hypothesis we did not find any significant correlation between race, gender, income, or self-esteem and the environmental attitudes of our subjects. In addition, with the exception of one significant correlation, there were no other correlations found between the Rosenberg Self-Esteem scale or the GESS and any of the three environmental measures. However, like we hypothesized, we did find a significant positive correlation between the Long Range Career Oriented Efficacy subscale, measured in the GESS, and the Environmental Concern Scale ($r_{(91)}=.228, p<.030$). As expected there was a significant positive correlation between the New Environmental Paradigm Scale and the Measure of Ecological Attitude and Knowledge Scale ($r_{(90)}=.233, p<.027$) as well as Environmental Concern Scale ($r_{(91)}=.378, p<0.001$).

Discussion

The purpose of this study was to assess the relationships between a variety of personality traits and environmental attitudes and actions. We predicted sex, race, income, and self-esteem to have no correlation to environmental attitudes and behaviors. This hypothesis was supported by our

results. Our expected positive correlation between self-efficacy and environmental behavior was partially supported. The results show a positive correlation between the Long Range Career Oriented Efficacy subscale of the GESS and the Environmental Concern Scale, which focuses mainly on future oriented environmental issues such as pollution.

Although we expected to find a relationship between political affiliation and pro-environmental behavior, the results showed no significant support. However, this unexpected finding might be due to the fact that over one fourth of the subjects had no strong affiliation with a political group. This study supported the earlier discussed fact that many of the findings were contradictory and therefore, we only found a small number of significant correlations. As mentioned in the introduction, there is such a wide range of aspects that affect environmental attitudes and behaviors that specific personality traits cannot be solely linked to these behaviors. A large range of aspects concerning each individual person would have to be evaluated based on the low-cost/high-cost model. However, the results show that individuals who are more concerned with long-term life goals also show an increased concern for long-term issues such as the environment. Our study might be helpful in the way that it shows that most individuals could be introduced to pro-environmental behavior. Therefore, early education should be encouraged without concerns to race, gender, income, and other personality traits.

In order for future research to be successful and not offer contradictory results as the current body of literature does, it might be useful to look at social instead of personal attributes. An evaluation of other countries' attitudes towards the environment and the inclusion of pro-environmental behavior such as recycling into the social norm would be beneficial to the body of research. Countries like Germany, France, Sweden and Denmark could be used as research examples. Research could focus on everyday routines examining pro-environmental behavior and how it is introduced in daycares, schools, and the workplace.

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