# College Students' Green Culture: Reflecting on the Ideal Types of Environmental Awareness and Behavior Practices.

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# Abstract

Drawing on the cultural theory of environment, this study provides holistic insights in the college students' green culture including environmental awareness, environmental behavior and lifestyle, environmental knowledge, and environmental information. Using data from a random sample survey of the Colorado State University students (n=378), our research addresses an anomaly in the literature. Despite numerous studies on the same population (e.g., Scott & Willits, 1994; Unipan & Oskamp, 1997), this study does not observe much distance between the level of environmental concern and the level of actual proenvironmental behavior among students. Factor analysis shows that four highly interpretable types of green culture are present: "Pure Environmentalist Type", "Proactive Type", "Declare Type" and "Non-Environmentalist Type".

**Keywords:** environmentally responsible behavior; environmental lifestyle; environmental attitudes; environmental information; environmental decision-making; environmental responsibility.

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# Introduction

In the scientific discourse of environmental quality improvement a lot of effort is put on the technological advancement, for instances, in production processes. However, this narrow focus might generate very one-sided results, as achievements based on efficiency alone often result in a limited effect where a gain in efficiency is overcompensated by a population growth as well as the consumption volumes' increase (Vlek et al., 2007).

In this line of argument, it is important to focus environmental research on the issues of promoting cultural and behavior changes through studying the green culture of the population. Furthermore, taking into account that students are the future decision makers, it is essential to understand what they think about the environment, where they learn about it, and how they act towards it. Thus, by analyzing different domains of students' green culture we can have a valuable insights to the directions we are headed.

Analyzing green culture from the cultural theory perspective includes examining socially shared beliefs and values, norms, and attitudes, people's interactions with technology, and the products of this interaction. A literature review demonstrated that different parts of green culture have been research topics for several decades in the USA. Among the pioneers of green culture analysis in the USA are Dunlap, 1993; Stern, 1995; Plumwood, 2002; Hoff, 1998; Nie, 1998, etc. These researchers are noticed by studying various parts of green culture, incorporating various levels of social analysis.

Despite a long-standing concern with nature, environmental sociology has been slow to incorporate culture as a guiding concept in understanding environmental attitudes-behavior-knowledge relationship. This research will try to address this limitation by analyzing different forms and models of green culture of the Colorado State University (CSU) students from the cultural standpoint.

In this arena of study, this article will contribute to the scientific discourse of environmental attitudes-behavior-knowledge relationship and cultural theory in connection to environmental discourse. From the practical point of view, the results of the project would be useful in the daily activities of the environmental organizations and academic world and can be incorporated in building an efficient environmental policy of students' communities.

The article is organized as follows. First, a literature review details previous work on the main components of the green culture. A number of hypotheses are developed. Next, the study's methodology is outlined and the results of the research are presented. The paper concludes with a discussion of the findings.

# Theoretical background and research hypotheses

# Green culture: conceptualization and structure

Drawing on the cultural theory of environment, green culture understands as a multifaceted construct consisting of two conceptual components: the "green" and "culture" components (Dunlap, 2002). The environmental component represents the substantive content of green culture that related to the environmental issues (e.g., recycling, global warming, etc). The culture components represent "beliefs and perceptions, values and norms, customs and behaviors of a group or society" (Altman, 1980:7). In opting for a cultural theory, it is important to distinguish number of approaches in the environmental-culture discourse placing emphasis on certain cultural properties. Among them are technological (Abdullaev, 1990), informational (Dubrovina, 1990), axiological (Baharov, 2000), action-oriented (Asafova, 2000; Kochergina, 1998) etc. Looking at the green culture as a complex socio-cultural phenomenon, we find it conceptually fruitful to employ a combination of axiological and action-oriented approaches.

Axiological approach analyzes green culture as a set of attitudes, values and norms toward the environment. Under this approach, sociologists analyze the manufacture and communication of environmental norms, beliefs and values. The action-oriented approach stresses on the action as a core in the human-nature relationship. While axiological approach can be a methodological ground for studying the environmental attitudes, the values and norms of green culture, an action-oriented approach can be incorporated in this project to analyze environmental behavior practices and environmental lifestyle.

# Green culture dimensions: environmental awareness – knowledge - behavior

The study of environmental awareness is one of the most fruitful areas in the social and behavioral sciences (Axelrod, 1994). It involves studying environmental attitudes, environmental values and environmental beliefs.

Studying environmental awareness is challenging for the following reasons: (1) the problems tend to be more global and less visible, making public awareness dependent on media and opinion leaders than on the firsthand experience; and (2) the causes, effects and solutions of the environmental problems are highly connected with complex social processes (Dunlap, 2002). Moreover, more than just increased in

numbers, people's environmentalism nowadays goes deeper incorporating core values and beliefs structure and affect behavior patterns (Kempton et al, 1995).

Environmental knowledge presents a cognitive dimension of environmental awareness that influences how individuals encounter and resolve environmental problems.

This research would concentrate on the study of students' factual knowledge in connection to the students' self-reflection of how educated they feel about the environmental issues. Thus, I hypothesize that:

H1: Students perceive themselves to be more environmentally educated than their factual knowledge about the environment suggests.

The hypothesis was built on the findings that people do not have enough understanding about the nature of the environmental problems. The US national survey showed that people do not really understand the reasons behind some major environmental issues such climate change or global warming (Sairinen, 2008). Moreover, social desirability can also be a reason for higher scores in self-perceived knowledge about the environment.

Environmental attitudes and values reflect on the environmental behavior. Numerous theoretical frameworks (Clayton & Brook, 2009; Kollmuss & Agyeman, 2002, etc) state the gap between the environmental awareness and displaying environmentally responsible behaviors. Thus, the following is hypothesized:

H2: Students state to be more environmental aware than their level of environmentally friendly behavior suggests.

Many researchers have tried to explain what causes this gap. People's willingness to be involved in the environmentally friendly practices is mediated by a lot of external and internal factors such as situational circumstances, individual differences, normative factors, physical setting in which people carry out specific environmental actions, etc (James, 2001). For example, people may not use public transportation because of undeveloped bus infrastructure in the place where they live; because they feel sick in public transport; because of a fear to get in an accident or because of other contextual conditions. For these reasons although people can be environmentally concerned and have an intention to act, they still might not perform environmentally sound behavior due to the lack of time, lack of infrastructure and cultural or community support, inconvenience, or living in a context that ignores environmental issues and many other factors.

# Methodology

#### **Scales construction**

Different types of quantitative scales have been produced to study CSU students' environmental attitudes, beliefs, values, behavior practices and different points of view concerning the environment. In that sense, if quantitative scales fail to capture the richness of the social phenomenon, they are easy to evaluate, have good reliability and validity and make the results comparative with other findings on the subject (DeVellis, 1991; Morales, 2000; Morales, Urosa & Blanco, 2003, etc). While some scales were incorporated from previous studies (Kim, Laroche & Lee, 1989, etc), others were created specifically for the research project in hand.

The survey instrument comprised 57 closed and open-ended questions on students' opinions on various subjects related to green culture. Conceptually, they were grouped into four parts according to their thematic content:

Part 1. Environmental Attitudes. Environmental attitudes represent hypothetical mental states, thus, no single verbal statement generates a particularly good measure of them. In my research, environmental attitudes are measured by Likert-type items using a 5-point response scale ('extremely concerned' to 'not at all concerned' and an option 'I do not know') designed to measure CSU students' sensitivity toward the quality of the environment overall and their perspectives on certain environmental issues. Students indicated the degree of their concern on various environmental problems: (1) air pollution, (2) drinking water pollution, (3) water pollution (seas, rivers, lakes and underground sources), (4) destruction of wilderness, (5) global warming/climate change, (6) noise pollution, (7) acid rain, (8) agricultural pollution, (9) growing waste/not enough recycling, (10) urban problems, (11) people consumption habits, (11) overpopulation, (12) water scarcity. Such items are considered typical for scales of this type (e.g. Kaiser et al., 2003; Schultz & Zelezny, 1999). I also distinguish personal concern and perceived seriousness of environmental problems among four geographical levels: local, regional, national, and global (Dunlap & Xiao, 2007). In addition, in a format of open-ended questions respondents were asked to name the three most serious environmental problems that the nation, Colorado and Fort Collins face. This scale was primarily integrated for the purpose of comparing the results of the public agenda as presented in the survey with media agenda studied by the content analysis of the local, regional and national US press. Moreover, on a 10point response scale students measure the extent the economic, environmental and social factors influence their quality of life. Finally, students were asked their opinion on the role of the USA in protecting the world environment compared to other countries.

Part 2. Environmental behavior section studies students' engagement in various environmentally friendly acts like recycling, driving less/ driving more fuel efficient cars, using less electricity, buying organic food, using energy saving light bulbs, conservation of water, etc. With the aim of adapting the questionnaire to the theoretical model proposed and analyzing the personal, behavioral, and contextual causal factors that affect people's behavior towards the environment, students are asked to the main reason behind their name engagement in these environmentally responsible behaviors. Furthermore, students are asked to think about their shopping and living habits over the last 3 years and choose whether they make major changes, minor changes or no changes to help protect the environment.

Part 3. *Environmental knowledge* scales were designed to assess factual knowledge of different environmental issues. These items addressed environmental issues of pollution, and fundamental ecological ideas. The answers given by the respondents were intended to create an ecoliteracy score, indicating how much a respondent knew about environmental issues. In addition, students are asked to rate the quality of environmental educational activities carried out in the area where they live and their self-perception of how educated they feel about the environmental issues.

Part 4. Environmental information. The final section of the questionnaire includes seven items measuring the environmental information sources. First of all, 5-point response scale is designed to measure CSU students' self-perception of how informed they feel about environmental issues. Students are asked to assess whether they are interested in the information about the environmental issues. Subjects are also asked to evaluate the main sources of receiving information about the environmental environmental issues.

organizations, friends and family and the degree of trust in them. Furthermore, the willingness to find environmental information by the students is also measured in the present research.

In addition, students are asked to indicate three main problems (out of 12 items) they believe to be the most important facing the nation. Here we study the salience or the amount of attention given to environmental issues among other problems. Environmental quality is salient to an individual when it is on their mind and not just something that they think about when asked for an opinion.

# Sampling Procedures and Data Collection

The empirical study involved the administration of a self-completion questionnaire to CSU students, Fort Collins. Data were collected from the middle of September to the middle of October 2009. The researcher approached the classroom, introduced her and the study, and administered the survey to groups of students who completed them in the classroom. Students responded voluntarily and were not compensated for their participation. The total number of respondents was 378. The sample was representative of the actual number of CSU students with regard to gender, college year and college affiliation.

# **Findings**

# Environmental attitudes

First I study the salience of the environmental issues by asking students to rank the societal issues they are mostly concerned about. The issues students believe to be the most important are environment (52.5%), economic crisis (43.4%), unemployment (33%), poor healthcare

system/high cost of healthcare (33%), poor education system/hard access to education (27.8%), inflation/high cost of living/taxes (20.8%), losing "moral compass" (11.7%), situation in Iraq/War (11.4%), crime/violence (9.9%), immigration/illegal aliens (9.9%), terrorism (9.6%), drugs/alcoholism (7%).

A National US polls suggest that while environment is a priority issue but not a top tier concern (Gallup Poll, 1996; Bloomberg Poll, 2009). Thus, this study does not reinforce the main pattern found in the previous research that emphasizes the fragility of nature in the face of economic development.

A high priority of environment over other issues especially of the economic nature can be explained by the characteristic of the sample. According to the literature, youth are more environmentally concerned than older people because they are more likely to express postmaterialistic values that are positively correlated with environmental quality issues; they are less integrated into the job market and, thus less exposed to the material values of economic growth (Eero Olli at al, 2001).

The importance of the environment for the students emphasizes the respondents' reflection on the direct question about the importance of the quality of the environment, not regarding other social issues. Findings demonstrate that there is high number of respondents (95.3%) stating that the quality of the environment is important for them as expected.

Data reflects a pattern that environmental issues are more essential for the happiest students according their self-perception. This is to be expected because it is found that the self-perception of happiness is positively correlated with postmaterialistic values that promote environmentally friendly values and practices (Inglehart, 1990).

College students perceive environmental situation to be more serious in the world (90.2%) and in the USA (88.1%) than in the state (57.2%) and city (45.1%y) there they live. These findings are positively reflected with the existing data on the subject (Holl et al, 1999). According to the studies, while people from the developing countries are more focused on the local environmental problems, respondents from industrialized countries are more anxious about the global environmental situation. Moreover, the findings presented in this study might reflect the objective situation of Fort Collins to be a place with less environmental risks than other regions. Therefore, the majority of CSU students feel themselves protected from the environmental risks (cumulative percentage is 62.4%).

Results suggest that respondents perceived a variety of threats to the environment including health-related and resource problems and problems of environmental aesthetics. Destruction of wilderness and forests (9.4%), air pollution (9.3%), people's consumption habits (8.9%), water pollution (8.8%), growing waste/not enough recycling (8.7%), urban problems (8.2%), etc. topped the list while less visible threats, such as global warming (7.3%), acid rain (5.1%) and the depletion of the ozone are of somewhat less concern to the public.

# Environmental knowledge

In general, students positively evaluate the quality of the environmental education in the area where they live (83.9%). These findings are positively correlated with students' self-perception of how educated they feel themselves toward the environment. On a 1 to 10 scale, where 1 means "I do not have any knowledge", 10 mean "I am very educated in

the environmental issues", students' overall score is 6.78.

In order to compare students' self-reflection on their environmental educational level with their factual knowledge, I created the factual knowledge index based on the number of correct answers out of 3 possible questions. Findings highlighted that students' actual environmental knowledge demonstrated to be pretty high. In my sample, 44.1% of students answered all three questions correctly, 47.2% answered two questions out of three correctly, 6.4% respondents answered only one question out of three questions correctly and only 2.3% have no correct answers. The students' actual knowledge overall score is 2.33. In this study, students' subjective and objective knowledge is positively and significantly correlated, thus H1 is not supported.

# Environmental behavior and lifestyle

Turning to behavioral dimension, the research explored respondents' reports of undertaking the pro-environmental practices. Findings show that there are high numbers of students who are involved in the environmental responsible activities such as cutting down energy consumption (83.6%), separation waste for recycle (74.2%), cutting down water consumption (68.7%), using the car less (59.8%), etc. Less than 3% of CSU students did not conduct any environmental activities for the past year.

To indicate the average number of environmentally friendly activities that students conducted over the last year and for the purpose of checking our H2, an index of environmentally responsible behavior was created. Data shows that on average over the last one year students performed five different types of environmentally responsible behaviors out of nine possible options. Thus, the findings contradict the distance between level of environmental concern and the level of actual proenvironmental behavior found in many environmental studies (G. Cornelissen et al, 2006; Jurin, 2000, etc); H2 is not supported. My research is guided by a cultural theory, thus, I incorporated cultural variables aiming at studying CSU students' environmental behavior models. Some of the contextual variables were created ad hoc based on the previous research on the subject while others were identified post hoc.

Figure 1. "What was the main reason why you were engaged in the environmental activities?", %



Students were asked "What was the main reason why you were engaged in the environmental activities?" Figure 1 shows that students' environmental behavior practices are mainly driven by social-altruistic values ("I do not want other people and the future generation to suffer from a bad quality of environment", "the planet, not just humans depends on our help"), monetary incentives and costs ("I want to save money"), self-egoistic values ("I do not want to suffer from a bad quality of environment"), habitual practices ("I got used to these activities from the childhood"), community expectations ("everybody is doing them in the place where I live"), infrastructural support ("it's very available"), social-psychological factors ("they make me feel good", "it's the right thing to do", "had a good experience with these activities in the past") and exercising political will ("things I could actually participate in").

#### Green culture models

Factor analysis is used in this study to identify and group students into segments of different types of green culture based on their similar attitudinal and behavior profiles. Thus, students were asked to agree or disagree with 13 statements related to environmental behavior and environmental awareness. The statements are presented in Figure 2. The factor analysis literature (eg. Fabrigar et al., 1999.) advises including three to five latent variables (statements) for each hypothesized construct. Thus, statements 1, 2, 3, 9 and 13 represent environmental awareness group while statements 4, 5, 6, 7, 8, 10, 11 and 12 constitute environmental behavior group.

Figure 2. "How much do you agree or disagree with each of the following statements?" On a 1 to 5 scale, where 5 means you are "strongly agree", 1 means you are "strongly disagree" and 0 means "it is not available where I live"

	Diagree Agree
1. I am concerned about the environmental quality in the area where I live	012345
2. I don't feel myself protected from environmental risks	012345
<i>3. Poor environment can be a cause of health problems</i>	012345
4. I avoid unnecessary consumption of water (for example not leaving water running when washing the dishes or taking a shower, etc.)	012345
5. I avoid unnecessary consumption of energy (for example turning down air conditioning or heating, not leaving appliances on stand-by, buying energy saving light bulbs, buying energy efficient appliances, etc.)	012345
6. I save cans, bottles or newspapers for recycling	012345
7 .I chose an environmentally friendly way of travelling	012345
8. I try to buy environmentally friendly products marked with an environmental label	012345
9. I would give part of my income if I were certain that the money would be used to prevent environmental pollution	012345
10. I take part in the environmentally friendly activities	012345
11. I am a member of an environmental club/organization	0 1 2 3 4 5
12. I read nature or environmental magazines	012345
13. I would vote for a candidate who support environmental issues	0 1 2 3 4 5

The aim of the analysis was to develop reliable set of scales using factor loadings. Items with loading higher than 0.4 after varimax rotation were included in factors' construction (Tabachnick and Fidell, 2001). Factor analysis of items resulted in two factors as expected (Figure 3). The first factor consisted of items referring to a concern about the environmental quality, environmental risks awareness, poor environment as a cause of health problems, students' intention to donate the money for the sake of the environment, students' intention to vote for the candidate who supports environmental issues. Thus, I named this factor "environmental awareness" scale. The second factor of environmental behavior consisted of the remaining 6 items of the section, accounting for environmental friendly behavior.

Figure 3. Factor analysis, Factor loading matrix after varimax rotation.

Variables	Factor 1	Factor 2
	"Environmental	"Environmental
	awareness"	behavior"
I am concerned about the environmental quality in the	.756	
area where I live		
I don't feel myself protected from environmental risks	.546	
Poor environment can be a cause of health problems	.655	
I would give part of my income if I were certain that the	.647	
money would be used to prevent environmental pollution		
I would vote for the candidate who support	.753	
environmental issues		
I avoid unnecessary consumption of water		.813
I avoid unnecessary consumption of energy		.789
I save cans, bottles or newspapers for recycling		.737
I choose an environmentally friendly way of travelling		.633
I try to buy environmentally friendly products marked		.441
with an environmental label		
I take part in the environmentally friendly activities		.512
Cumulative percentage	49.008	

Internal consistency of two factors was also estimated by using Cronbach's alpha. Standardized Cronbach's alpha for the remaining factors is 0.785 indicating an acceptable level of reliability. Factor analysis allows grouping the respondents into 4 clusters on the basis of their answers to attitude-behavior latent variables that is equivalent of different models of green culture.

Cluster 1 (n 124) was labeled *"Pure Environmentalist Type"*. The representatives of this group have both high scores in the environmental

behavior and in the environmental awareness dimensions. This group has a higher percentage of men, respondents who belong to lower class, 'whites', students in their senior year, those students who are single and have no children, students who are employed and affiliate themselves with Christianity. The differences are significant in terms of gender (p < 0.01).

Cluster 2 (n 43) was labeled *"Proactive Type"*. The representatives of this category have high level of environmental behavior and low level of environmental awareness. This group has a an even percentage of men and women and a higher representation of those who belong to upper class, 'non-whites', students in their Ph.D. program, those students who are separated and have two children, students who are unemployed and affiliate themselves with Islam. There are no significant differences among groups are found.

Cluster 3 (n 57) was labeled "*Declare Type*". The representatives of this group have high level of environmental awareness and low level of environmental behavior. This group has a higher percentage of female, respondents who belong to upper middle class, even percentage of 'whites' and "non-whites", students in their freshmen year, those students who are in relationship, students who are unemployed and affiliate themselves with Christianity. The differences are significant in terms of the religion affiliation (p < 0.05).

Cluster 4 (n 135) was labeled *"Non-Environmentalist Type"*. The representatives of this group have both low scores in the environmental behavior and in the environmental awareness dimensions. This group has a higher percentage of female, respondents who belong to lower class, 'whites', students in the Master program, those students who have two children, students who are employed and affiliate themselves with

religions different from Christianity and Islam. The differences are significant in terms of religion affiliation (p < 0.01).

Research demonstrates that the main drivers for engaging in environmentally friendly activities for Proactive Type and Declare Type are community expectations ("everybody is doing them in the place where I live"), for the Pure Environmentalist Type are financial and monetary incentive ("I want to save money") and for the Non-Environmentalist Type are habit ("I got used to these activities from the childhood").

#### Environmental information

Study reflects that 76.2% of students are interested in the information about the environmental issues while 23.5% are not intrested.Out of the percentage of students who are interested in the environmental information, 78.5% of respondents have tried to find the information on the interested environmental issues.

Most students (83%) claimed that internet is their major source of environmental information, although teachers at school or university (46.1%) and television (43.8%) are also important sources. The results are positively correlated with the studies on the subject (Hess, 2007; Johnson et al, 2000). The findings suggest that it is important to work with the media to disseminate more detailed information and improve the quality of information presented about the environment. Teachers (49%), followed by reports of environmental protection organization (37.5%) and internet (36%) are seen as the most reliable sources of information with businesses (2.1%) seen as the least. The data reflects on the fact that some major and powerful institutions could not be trusted to provide accurate information. Thus, only 12.4% of respondents stated that their trust in the government was to provide them with such correct information is strong and only 2% of respondents reported a strong sense of trust in business and industry. In general, students feel themselves very informed about the environmental issues. Thus, on the 1 to 5 scale, where 1 means "you are not informed at all", 5 means "you are very well informed" and 0 means "I do not know", their score is 3.3. The majority of students, as expected, feel that there is about the right amount of information in the place where they live while 30.4% of respondents feel there is not enough environmental information.

# **Conclusion and discussion**

The paper provides insights, in a form of a case-study, on the main forms of the college students' green culture. The findings suggest that in the presentation of the green culture CSU students took a major step forward.

The respondents tend to favor environment over economy stating the environment to be the most important issue out of other societal problems; the quality of the environment is important for 95.3% of the students. Research illustrates that students are most worried about the destruction of wilderness and forests (9.4%), air pollution (9.3%), people's consumption habits (8.9%), water pollution (8.8%), growing waste/not enough recycling (8.7%), urban problems (8.2%), etc.

Data projects that students' subjective and objective knowledge towards the environmental issues is positively correlated and stays on a high level. Respondents positively evaluate the quality of environmental education in the area where they live.

Students' level of environmentally responsible behavior is stated higher

than average; over the last year they performed 5 different types of environmentally sound behaviors out of 9 possible options; only 3% of CSU students did not conduct any environmental activities. Students were mostly involved in such practices as cutting down energy consumption (83.6%), separation waste for recycle (74.2%), cutting down water consumption (68.7%), using the car less (59.8%), etc. In this study, the main driver for such behaviors is social-altruistic values.

Factor analysis led to four well-defined and highly interpretable segments of the sample: "Pure Environmentalist Type", "Proactive Type", "Declare Type" and "Non-Environmentalist Type". Examining a number of sociodemographics and answers to other questions by cluster confirms their distinctiveness in terms of different environmental behaviors and awareness models.

The CSU students are very well-informed about environmental issues; 76.2% of students are interested in the information about environmental issues; 78.5% of respondents have tried to find the information on the interested environmental issues; 59.9% of students feel that there is about the right amount of information in the place where they live. The Internet is their major source of environmental information while teachers are seen as the most reliable.

The analysis provided evidence to support or, more properly "failed to falsify," H1 explaining that students' subjective and objective knowledge is positively and statistically significant correlated and stays on a high level. Empirical evidence was provided leading to the rejection of H2. In this study, there are no distance between students' environmental awareness and environmental behavior. Collectively, the results provide valuable insights on the green culture of college students and more specifically, on the relationship between environmental attitudes, knowledge and behavioral models, so often debated in the literature. The results confirm the fundamental role of environmental values as the key stimulus of environmentally sound behaviors, traditionally supported in the literature, as a background variable which affects behavior domain. Along with it, the present study highlights and statistically supports the importance of analyzing of cultural variables in shaping environmental behavior.

In general, the results presented here are consistent with the on-going literature on the subject and most of the findings offer empirical support for the environmental theories as mentioned in the literature review section. However, despite numerous studies on the same population (e.g., Scott & Willits, 1994; Unipan & Oskamp, 1997), this study does not observe much distance between the level of environmental concern and the level of actual proenvironmental behavior among students. This study demonstrates that CSU students are both sympathetic to environmental problems and willing to act consistently on their stated environmental beliefs either as consumers, voters or environmental activists.

High level of green culture of the CSU students is structured by many interrelated objective and subjective factors. Here are some of them:

(1) *Economic situation*. Economically self-sufficient region with a focus on local businesses and creation of jobs allows its citizens to better exercise post materialist values compared to the other US regions;

(2) *Infrastructural support.* The main institutions and green infrastructure already in the place allow performing such kinds of behaviors and provide cultural support;

(3) *Institutional support.* Solid environmental educational programs providing complex knowledge on the subject;

(4) *Measurement problems.* Besides, it is easier to report environmentally sound behaviors than to actually practice them as well as it is tempting to retrospectively over score the environmental acts. This ambiguity stresses some of the major problems with survey design. While the scales can be valid and the instrument is reliable, the true perception of the respondents is difficult to measure.

The following contextual factors can affect each other or in the language of experiment research they can interact and produce the synergetic affect that make Colorado a unique place for a sound level of green culture.

Overall, these findings suggest that environmentalism in the studied region has been institutionalized; became a mainstream and normal paradigm and is projected by the main social institutions and social agents.

# Limitations

There are limitations that must be taken into account when considering the findings presented here. Sample size is one of them. In this study, the sample size is representative in terms of the whole college students' population. However, if we were to make analysis between and among particular groups of respondents, sample size should be enlarged. This produces more valid and reliable data for cross-group comparison and for generalization of results.

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# References

Abdullaev, A. & Kasimova, M. (1990). Some problems of green culture in the modern conditions. *Sociological Culture: Social and National*, 13(4), 87-93.

Altman, I. (1980). *Culture and environment*. Cambridge: University Press.

Asafova, J. (2000). *Green Culture as a Factor of High Education Advancement*. Kazan: Kazan University Press.

Axelrod, L.J. (1994). Balancing personal needs with environmental preservation. *Journal of Social Issues*, 50 (85), 104.

Baharov, V. (2000). *Green Culture of Society as a System*. Saransk: Saransk University Press.

Clayton, S. & Brook, A. (2005). Can psychology help save the world? A model for conservation psychology. *Analyses of Social Issues and Public Policy*, 5(1), 87-102.

Cornelissen, G. & Pandelaere, M. & Warlop, L. (2006). Cueing Common Ecological Behaviors to Increase Environmental Attitudes. *International Journal of Research in Marketing*, 4(4), 278-288.

Dubrovina, V. (1990). *Individual's Green Culture*. Kazan: Kazan Press.

Dunlap, R. E. & Jones, R. E. (2002). Environmental concern: Conceptual and measurement issues. *Handbook of Environmental Sociology*, 3(6), 482-524.

Fabrigar L.R., Macallum, R. C., Wegener, D. T. & Strahan, E. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, (4)3, 272-299.

Hoff M. (1998). Sustainable Community Development: Studies in Environmental, Economic, and Cultural Revitalization. Florida: Lewis Publishers

Inglehart, R. (1990). *Culture Shift in Advanced Industrial Society*. Princeton: Princeton University Press.

James M.T. (2001). Environmental protection through free-market principles: <u>www.heartland.org</u>, [accessed 02/10/2010].

Jurin R. R. (2000). Symbolic beliefs as barriers to responsible environment behavior. *Environmental Education Research*, 8(4), 373-394.

Kaiser, F. G., Wolfing, S. & Fuhrer U. (1999). Environmental attitude and ecological behavior. *Journal of Environmental Psychology*, 19, 1-19.

Kempton W., J. S. Boster & J. Hartley. (1995). Environmental Values in American Culture. Cambridge, MA: MIT Press.

Kim C., Laroche M. & Lee B. (1989). Development of an index of ethnicity based on communication patterns among French- and English-Canadians. *Journal of International Consumer Marketing*, 2(2), 43-60.

Kollmuss A. & Agyeman J. (2002). Mind the Gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, *8*, 239-260.

Morales P. (2000). *Medici´on de actitudes en psicolog´ıa y educaci´on*, Madrid. Spain: Universidad Pontificia de Comillas.

Olli E., Grendstad G., & Wollebaek D. (2001). Correlates of Environmental Behaviors: Bringing Back Social Context. *Environment and Behavior*, 33, 181-20.

Saarinen H. (2008). Environmental Decisions and Uncertain Futures: Scenarios for the Region of MCB Camp Pendleton & MCAS Miramar. California.

Schultz W. & Zelezny L. (1999). Values as predictors of environmental attitudes: Evidence for consistency across 14-countries. *Journal of Environmental Psychology*, 19, 255-265.

Scott D. & Willits F. K. (1994). Environmental attitudes and behavior A Pennsylvania study. *Environment and Behavior*, 26, 239–260.

Stern P. C., Dietz T., Kalof L., & Guagnano G. A. (1995). Values, beliefs, and proenvironmental action: Attitude formation toward emergent attitude objects. *Journal of Applied Social Psychology*, 26, 1611-1636.

Tabachnick B. G. & Fidell L. S. (2001) Computer-Assisted Research Design and Analysis. Boston: Allyn and Bacon.

Vlek L.G., Martius C. & Lamers P.A. (2007). Beyond the Aral Sea Syndrome: The ZEF/UNESCO efforts in Uzbekistan. Paper presented at the International Symposium. Water and Better Human Life in the Future. November 6-8, 2006. Kyoto, Japan.

Xiao C. & Dunlap R. E. (2007). Validating a comprehensive model of environmental concern cross-nationally: A Canadian-USA comparison. *Social Science Quarterly*, 88, 71-493.