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DO ADULTS WHO ATTEND A FAMILY NATURE EVENT HAVE CORRELATIONS BETWEEN
ENVIRONMENTAL RESPONSIBLE BEHAVIORS, CONNECTION TO NATURE, AND
ENVIRONMENTAL ATTITUDES?

by

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DO ADULTS WHO ATTEND A FAMILY NATURE EVENT HAVE CORRELATIONS BETWEEN ENVIRONMENTAL RESPONSIBLE BEHAVIORS, CONNECTION TO NATURE, AND ENVIRONMENTAL ATTITUDES?

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University of Nebraska, 2015

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Abstract

Environmental education is an important way to provide information to the public regarding natural resources, ecosystems, and sustainability. The School of Natural Resources at the University of Nebraska-Lincoln hosts an annual family nature event, NaturePalooza, with the goal to educate families with hands-on activities about the environment, nature, natural resources. My main objectives are to find if there are correlations between environmental responsible behaviors, connection to nature, and environmental attitudes; also to determine if new knowledge is learned and new behaviors willing to be practiced at home. A ten minute survey was provided using Qualtrics online survey system on tablets for adults, 19 years and older. The survey is comprised of questions addressing: demographics (4 items), evaluation of the event (4 items), and a three-part nature relation assessment. Connection to nature is about seeing ourselves as part of the environment and having a value that underlies environmental concern and behavior (Dutcher et. al. 2007). Environmentally responsible behavior are behaviors that consciously seek to minimize the negative impact of one's actions on the natural and built world, like minimizing resource and energy consumption (Kollmuss & Agyeman 2002). The connectedness to nature scale (CNS) is useful because it provides a validated and reliable assessment to measure an individual's emotional connection to the natural world. Positive correlations are found between Connection to Nature, Environmental Responsible Behaviors, and Environmental attitudes. Over 90% of participants learned a minimum of two new things at NaturePalooza, while over 78% of adults indicated willingness to try 2 or more new behaviors after the event.

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Introduction & Literature Review

Environmental education is an important way to provide information to the public regarding natural resources, ecosystems, and sustainability. The School of Natural Resources at the University of Nebraska-Lincoln host an annual family nature event with the goal to educate families with hands-on activities about the environment, nature, natural resources. Local businesses and university clubs set up booths that are focused on interacting with the children while providing facts and useful nature-friendly practices (recycling, water saving techniques, bird feeders) to adults. My main objectives are to find if there are correlations between environmental responsible behaviors, connection to nature, and environmental attitudes; also to determine if new knowledge is learned and new behaviors willing to be practiced at home.

Environmental problems continue to rise with population and consumption growth (Oskamp 2000); making sustainability of natural resources a main concern. Sustainability is a problem that is shaped by human choices and actions (Mayer & Frantz 2005). Aldo Leopold, a founding father in ecology states “It is inconceivable to me that an ethical relation to land can exist without love, respect, and admiration for land, and a high regard for its value...far broader than mere economic value... value in the philosophical sense” (261, 1949). Personal attitudes regarding environmental issues are formed by the type of relationship one has with nature, the type of relationship determines how much concern and value a person has for natural resources. Environmental value are those values that are specifically related to nature or that have been found to correlate with specific environmental attitudes or concerns (Shultz et al., 2004). Clayton determined that how people identify with the natural environment is an important aspect of the person-nature relationship (2003). Connection with nature deepens as personal attitudes become more positive towards the environment. Value for the natural environment is built from an individual emotional connection.

Connection to nature is about seeing ourselves as part of the environment and having a value that underlies environmental concern and behavior (Dutcher et. al. 2007). The connectedness to nature scale (CNS) provides a validated and reliable assessment to measure an individual’s emotional connection to the natural world. It is designed to tap into an individual’s affective and experiential connection to nature as participants select answers based on personal feelings (Mayer & Frantz 2005). CNS’s affective approach is different from previous environmental attitude scales such as the New Environmental Paradigm (NEP) and Inclusion of Nature in the Self (INS) (Dunlap et. al. 2000; Shultz 2002). These scales focused on specific attitudes, core and cognitive beliefs, and rationality of environmental issues and does not consider experiences and emotional relationships. Affective and empirical data gives a better holistic view on an individual’s motivation perform to environmentally responsible behaviors.

In a meta-analysis of 128 empirical studies proenvironmental behaviors were found to be driven by personality, attitudes, knowledge, and skills (Hines et. al. 1987). Pro-environmental behavior means behaviors that consciously seek to minimize the negative impact of one’s actions on the natural and built world, like minimizing resource and energy consumption (Kollmuss & Agyeman 2002). Nisbet, Zelenskiand, and Murphy (2008) suggest that many of the individual differences needed to determine environmentally responsible behaviors (ERB) is captured using the nature relatedness (NR) scale. Motivation is key to perform environmental responsible behaviors. Motivation to care for the biosphere community and understanding concepts of NR encompasses one’s appreciation and understanding of interconnectedness with all living things (Schultz 2008).

Motives, relationships, and attitudes regarding the environment generates one’s value of nature. My first goal is to use a survey to determine if adult’s learned new information and behaviors they were willing to practice at home. The second goal of my research is to determine if an adult’s connection to nature has a correlation between personal environmental attitudes and environmental responsible behaviors. Many people

enjoy the outdoors, but merely being active outdoors does not mean they understand environmental issues or that they're aware of their negative impacts on the environment on due to everyday practices.

Methods & Materials

NaturePalooza is a family event the School of Natural Resources, at the University of Nebraska-Lincoln, hosts yearly. Students in elementary through high-school, including public, private, and homeschools were encouraged to attend. The event has hands-on activities and learning opportunities, and an interactive show with live wildlife. NaturePalooza is a five hour event that invites local businesses and university clubs to share their expertise at booths.

An event survey for NaturePalooza was provided to the adults, 19 and older. Most of the participants were parents, teachers, or caregivers. The survey is comprised of questions addressing: demographics (4 items), evaluation of the event (4 items), and a three-part nature relation assessment.

Nature relation assessment is comprised of questions addressing the following: Environmental Attitudes (7 items), Connection to Nature (5 items), and Environmental Responsible Behaviors (7 items). All items utilized a five point Likert-type scale; with responses ranging 1-5. One being most negative (strongly disagree/never) and five most positive (strongly agree/always). The survey was composed of seventeen questions that addressed demographics, evaluation of the event, and nature relation assessment.

The survey took less than ten minutes to complete. The participants had easy accessibility to tablets in a central location at the event; the survey was available throughout the duration of the event. Qualtrics is the secured online system that was used to provide the survey. Participants had an opportunity to place their names in a drawing for donated prizes, but this was kept separate from the survey to ensure that the survey was anonymous and confidential.

Data was analyzed using SAS statistical software. The Spearman rank correlation coefficients is calculated using the PROC CORR procedure in SAS; used because it does not make assumptions about the data distribution. Variables are measured on an ordinal scale of one to five, five is the best score. Regression models were found with PROC HPREG (high-performance regression) procedure with stepwise selection.

Results

Just over 1100 people attended the event. A total of 98 people started the survey. Adults were free to not answer any question they choose not to in the survey; only 78 participants completed the entire survey. Totals are based off of the 78 participants (N) who completed the survey.

Those surveyed were less than 10% of overall participants, however most participants were children. While 34% of participants reported having a background in science, 73% were first time attendees. Most participants were female (77%), education of at least some college (86%), and were in the age range of 30-39 (44%). There is a 0.28 positive partial correlation between age and education level.

Majority (45%) of respondents reported learning many new things at the event; 38% learned 1-3 new things, and 9% reported learning just one new thing. Over 20% of adults indicated they will try over 5 new behaviors, and 58% indicated they would try 2-4 new behaviors.

Trying new behaviors is positively correlated with the amount of new information learned (0.37) and education level (0.24). Two negative correlations associated with trying new behaviors are attitudes (-0.28) and connection to nature (-0.35). The amount of new information learned was negatively correlated with attending NaturePalooza in previous years (-0.24) and having a background in science (-0.37).

Attitudes, Connection to Nature, and Environmentally Responsible behavior individual response means range from 1.82 to 5.0. The means for all three categories of the entire averaged population is above 4.0. Overall, they are all high with a few exceptions. Exceptions are in response to the following questions (Table 4): Ride the bus, my bike, or carpool to help the environment (mean=2.97); and Buy local produce and/or grow my own produce (mean=3.83).

High correlations were found between attitudes, connection to nature, and environmentally responsible behaviors. Attitudes and connection to nature were particularly high with a correlation of 0.76. A negative 0.29 partial correlation is found between age and environmentally responsible behaviors.

Adults indicated the amount of new information learned at NaturePalooza shown in Table 6 by selecting one of the statements that best fit their experience. Participants also had the opportunity to indicate the number of behaviors they learned at NaturePalooza and are willing to try at home shown in Table 7.

Discussion

Education level is positively correlated with the response for the amount of new information learned. Participants with higher education are exposed to less new information at NaturePalooza.

Participants who indicated having a background in science tended to answer more positively on environmental attitudes and connection to nature. The same pattern is noted with participants who were willing to try more behaviors at home.

The mean response for environmental responsible behaviors is above 4.0, meaning that the participants practiced behaviors often or always, with two exceptions. Carpooling and mass transit are low in communities without strong mass transport infrastructure, such as New York or San Francisco. Local produce is typically low in the United States due to lack of access or knowledge on where to purchase; Lincoln and UNL have a strong “Buy Fresh Buy Local” program who participated at NaturePalooza hoping to increase awareness.

Environmental responsible behaviors, connection to nature, and environmental attitudes all correlated with each other. Participants who had more positive attitudes toward nature or had a stronger connection with nature tended to practice more environmentally responsible behaviors. Likewise, participants who had more positive attitudes tended to have stronger connections to nature.

The high means indicates that participants on average agreed or strongly agreed (often or always) to have environmentally attitudes, a connection to nature, and environmental responsible behaviors. The participants did not take a pre-survey and choose to attend a nature based event. The participants may have been predisposed to relatively high attitudes, connection to nature, and performing environmentally responsible behaviours. Lack of repetition with various audiences and small sample size limits the scope of the study. More research is needed to prove consistency and reliability in the assessment format.

Summary & Conclusions

NaturePalooza is a successful event for the entire family. Activities are hands-on learning opportunities for children, but adults showed that they learned new information and were willing to try new sustainable behaviors.

Improvements are needed for future research. Lack of repetition with various audiences and small sample size limits the scope of this study. More research is needed to prove consistency and reliability in the assessment format. To make this study more successful in the future there is need for more repetition, a longer

survey to provide better correlations, variety of audiences from a wider range of events (example: art, business, hunting), and add greater diversity with age and culture.

Many people enjoy the outdoors, but it is unclear if adults who participate in outdoor activities understand their impacts on the environment. Learning environmentally responsible behaviors takes a positive environmental attitude and a connection to nature. Environmental education is important for all public members, children and adults alike.

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Tables

Table 1: NaturePalooza Population			
		Total	%
Total Participants (N)		98	
Background in Science	Yes	26	<i>33.33</i>
	No	52	<i>66.67</i>
Gender	Male	18	<i>23.08</i>
	Female	60	<i>76.92</i>
Education	High school	11	<i>14.1</i>
	Some College or Associates	15	<i>19.23</i>
	Bachelors	32	<i>41.03</i>
	Masters or Higher	20	<i>25.64</i>
Ethnicity	Caucasian	65	<i>66.33</i>
	Asian	3	<i>3.06</i>
	African American	1	<i>1.02</i>
	Multi-Racial	3	<i>3.06</i>
	Native American	1	<i>1.02</i>
	Other	3	<i>3.06</i>
Age	20-29	14	<i>14.29</i>
	30-39	33	<i>33.67</i>
	40-49	10	<i>10.2</i>
	50+	17	<i>17.35</i>
Demographic data of the population is in Table 1 providing the following information of each adult: background in science, gender, education level, ethnicity, and age range.			

Table 2: Environmental Attitudes			
Question	N	Mean	Standard Deviation
It bothers me to think of how much energy is wasted.	78	4.26	0.84
I think we need to do something about climate change.	78	4.12	1.03
It is important to use water wisely.	78	4.65	0.64
I have a responsibility to help protect the environment.	78	4.65	0.53
It makes me happy when people recycle bottles, cans, and paper.	78	4.65	0.58
It is important to preserve habitat.	77	4.68	0.47
I am concerned about how pollution hurts the environment.	77	4.68	0.64

Question	N	Mean	Standard Deviation
I like to visit outdoor spots like parks, lakes, forests and gardens.	78	4.62	0.56
I see myself as a larger whole in which everything is connected.	77	4.29	.82
I feel a sense of oneness with nature.	78	4.19	.95
The world is not merely around but within us.	78	4.09	0.97
I feel a personal bond with things in my natural surrounds, like trees and wildlife.	77	4.12	1.03

Question	N	Mean	Standard Deviation
Turn off the lights when I leave a room.	77	4.56	0.60
Ride the bus, my bike, or carpool to help the environment.	77	2.97	1.15
Recycle at home.	77	4.27	1.07
Turn the thermostat down in winter and up in summer a little.	77	4.45	0.80
Water the lawn no more than 10 minutes 3 times a week.	75	4.21	1.07
Use reusable items like grocery bags or water bottles.	76	4.28	0.86
Buy local produce and/or grow my own produce.	77	3.83	1.02

	ATT	CTN	ERB
ATT	1.00000 78	0.75671 <.0001 78	0.51839 <.0001 77
CTN	0.75671 <.0001 78	1.00000 78	0.42311 0.0001 77
ERB	0.51839 <.0001 77	0.42311 0.0001 77	1.00000 77
Spearman Correlation Coefficients Prob > r under H0: Rho=0 Number of Observations			

Table 6: New information learned at NaturePalooza		
Amount of Information	N	%
Everything was New	7	9.09
I learned many things, but knew some already.	35	45.45
I learned 1-3 new behaviors.	29	37.66
I already knew everything, but it helped to reinforce information.	6	7.79

Table 7: Amount of Behaviors willing to try after NaturePalooza		
Number of Behaviors	N	%
I will try more than 5 new behaviors.	16	20.51
I will try 2-4 new behaviors.	46	58.97
I will try 1 new behavior.	11	14.10
I will not try any new behaviors.	5	6.41

Appendices

2014 Survey

Dear participant:

Thank you for joining us at NaturePalooza! We would greatly appreciate your feedback to help make this a better event in the future.

Participation in this evaluation is completely voluntary. Your decision will not result in a loss of benefits to which you are otherwise entitled.

You can refuse to participate or withdraw at any time without harming your relationship with the researchers or University of Nebraska- Lincoln.

The survey should take no more than 10 minutes.

You must be 19 or older.

This survey is confidential and will remain anonymous. No one will see your answers. All information will be compiled as total numbers.

We will not ask for your personal information.

Please answer all of the questions as honestly as you can. If you are uncomfortable answering a question you may skip it.

You may enter your name and email on a card and place it in a drawing to win a gift card from the gift store in Hardin Hall. Your name and email will be kept separately from your answers to ensure confidentiality.

We hope you will help us because your answers are important to making NaturePalooza a bigger success.

Thank you very much for your help!

By clicking "I agree" below, your consent for participation is implied.

I Agree

I Disagree

1. Did you attend last year? Yes No

2. Who did you come here with?

- School group
- After school group
- Household/Family members
- Alone
- Other

3. How did you hear about NaturePalooza? (You may circle more than one.)

Friends Newspaper TV School (Name of School): _____

Internet Radio Word of Mouth Other: _____

4. What were two of your favorite activities/booths?

- 1.
- 2.

5. Do you have a background in science? Yes No

6. If yes, to question # 5, what is your background?

7. How much information at NaturePalooza was new?

- Everything was new.
- I learned many new things, but knew some already.
- I learned 1-3 new things.
- I already knew everything, but it helped to reinforce things.

8. How many of the behaviors that you learned about at NaturePalooza (like recycling and saving water) will you try?

- I will try 5 or more new behaviors.
- I will try 2-4 behaviors
- I will try 1 new behavior
- I will not try any new behaviors.

9. How much do you agree or disagree with the following statements?

Strongly disagree Disagree Neutral Agree Strongly Agree

- It bothers me to think of how much energy is wasted.
- I think we need to do something about climate change.
- It is important to use water wisely.
- I have a responsibility to help protect the environment.
- It makes me happy when people recycle bottles, cans, and paper.

It is important to preserve habitat.
I am concerned about how pollution hurts the environment.

10. How much do you agree or disagree with the following statements?
Strongly disagree Disagree Neutral Agree Strongly Agree

I like to visit outdoor spots like parks, lakes, forests and gardens.
I see myself as a larger whole in which everything is connected.
I feel a sense of oneness with nature.
The world is not merely around but within us.
I feel a personal bond with things in my natural surrounds, like trees and wildlife.

11. Please indicate how often do you do each of the following statements?
Never Seldom Sometimes Often Always

Turn off the lights when I leave a room.
Ride the bus, my bike, or carpool to help the environment.
Recycle at home.
Turn the thermostat down in winter and up in summer a little.
Water the lawn no more than 10 minutes 3 times a week.
Use reusable items like grocery bags or water bottles.
Buy local produce and/or grow my own produce.

12. Do you think you will come back next year? Yes No

13. Are you? Female or Male

14. What year were you born?

15. What level of education have you completed?

High school diploma/ GED
Some college or associate's degree
Bachelor's degree
Master's degree or higher

16. Which of these best describes your race or ethnic group? (Check all that apply)?

- Native American African American Lat or Hispanic Asian
 Caucasian Pacific Islander Multi-racial
 Other (please specify) _____

17. Do you have any other comments or suggestions for next year?