Willingness to Recycle in Correlation with Age

Kristjan Tootsov

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Introduction

Background

The environment is a pivotal part of every facet of life. Without a healthy environment, there would be no life at all. Climate change is one of the most important issues the planet is currently facing, as its implications are increasingly becoming worse. As the destruction of the environment becomes irreversible, the health of the planet comes even more into question. With this concern, the need of sustainability within one’s everyday life is essential. One of the main ways one can achieve this is through recycling whenever possible. Recycling not only saves the lives of humans, but also the wildlife that keeps the planet alive. When waste is improperly disposed of, it can create large amounts of pollution, such as the Great Pacific Garbage Patch. National Geographic (2022) explains that “80 percent of plastic in the ocean is estimated to come from land-based sources”. Due to the inefficient disposal of waste, masses like the Great Pacific Garbage Patch are created. These country-sized garbage patches are hazards to wildlife and serve as a reminder of the actions of humans on the environment.

Understanding the recycling habits of young adults could be beneficial in a multitude of ways. School systems could utilize this information in order to create plans to emphasize the importance of recycling and would be able to target specific groups who seemed to have a below average knowledge on this subject. This could also affect curricula in a wide variety of courses, primarily STEM based, and would be able to emphasize the effects of climate change and the prevalence it has on our planet and environment. It is already established that there is an issue with the amount of waste that Americans recycle. Renee Cho of the Columbia Climate School explains these issues within “Recycling in the U.S. is broken. How do we fix it?”. Cho (2020)
writes that, “According to the EPA, of the 267.8 million tons of municipal solid waste generated 
by Americans in 2017, only 94.2 million tons were recycled or composted”. In order to close this 
gap, information on who is recycling and how to recycle is necessary. It must be known what age 
ranges need to improve their recycling habits and those who need to improve their overall 
mindset of sustainability.

Formulation of Question

It is necessary to identify the demographics of who recycles and who does not. With this 
information, education can be pursued in order to emphasize the importance of one’s efforts 
towards climate change, and how each person makes a difference in the health of the planet. One 
of the more noticeable effects of climate change is its effect on winter sports. For those who are 
passionate about winter sports, it is obvious that there have been large snowfall and temperature 
changes within the last 20 years. Outdoor industries have been heavily restricted by the 
consequences of climate change. With shorter seasons and less snowfall, many ski resorts 
struggle economically. Dave Zook of Protect Our Winters explains the difficulties and scary 
futures that ski resorts are facing. Zook (2021) writes that “the majority of ski resorts won’t be 
able to open in the 2090”. Due to the dangerous implications of climate change, these outdoor 
industries will no longer be in existence. These effects show the severity of climate change and 
how large of an impact it can have on the planet humans depend on, and the importance of 
humans being more conscious of their actions on a daily basis, in an action to go against these 
irreversible changes. Ultimately, this led to the research question of: To what extent does age 
impact a high school student’s likelihood to be environmentally conscious in regards to recycling 
on a daily basis?
Hypothesis

Freshman and sophomores, typically aged between 14 through 16, will be less environmentally conscious than juniors and seniors, who are typically aged between 16 and 18.

Literature Review

Wealth

One of the main limitations of environmental conscientiousness is its cost. In most cases, the environmentally friendly option is the most expensive option. Taking this into consideration with the research question, this could be a possible limitation. Axel Franzen brings this into perspective within his research “Acquiescence and the Willingness to Pay for Environmental Protection”. Franzen (2012) utilizes a figure (The Correlation Between Environmental Concern and Wealth in the 59 Countries from the ISSP, WVS, and EVS) to compare economic status and one’s willingness to contribute to environmental conservation. This figure emphasizes the differences in environmental concern within both underdeveloped and developed countries. Jonathan Watts brings in another perspective to this issue within “Air Pollution Inequality Widens between Rich and Poor Nations”. Watts (2018) explains that “overall, nine in 10 people on the planet live with poor, even dangerous, air, says the WHO report, which is considered the most comprehensive collection of global air quality data. But levels of contamination vary widely depending on government actions and financial resources” (p. 2-3). In correlation with Franzen’s research, Watts explains the divide between countries and how their development effects their governmental support. The actions of one’s government reflect the actions of their
citizens. Within more developed nations, environmental concern is greater as they can allocate resources to the cause of environmental concern and climate change prevention.

However, the government of a country is not the only influential factor in regard to taking initiative against climate change. The actions of businesses also affect those of the citizens, due to their impact on societal perception. Richard Clarke explains this within “The Challenge of Going Green”. Clarke (1994) writes, “A more recent, revisionist view asserts that environmental regulations are not only benign in their impact on international competitiveness but may actually be a net positive force driving private business and the economy as a whole to become more competitive” (p. 4). The age of this article shows the changing perspectives within businesses regarding the environment. It shows a negative reaction to environmental regulations, which does not reflect today’s situation. The majority of businesses now passionately care for the environment. The most publicity for their environmental work is seen through the largest companies, which correlates with both Franzen and Watts in that wealth leads to environmental conservation. It is a known fact that the cost of saving the environment is enormous, and with donations and efforts being made by large, successful corporations, Watts’ and Franzen’s ideologies are confirmed.

**Development**

One of the main environmentally harmful actions is overall development, whether it be within a third-world nation or within the great cities of the world. The United Nations explains the importance of sustainable development within “Green Economy”. The UN (2021) writes, “The notion of green economy does not replace sustainable development, but creates a new focus on the economy, investment, capital and infrastructure, employment and skills and positive
social and environmental outcomes across Asia and the Pacific” (p. 1). A green economy is crucial to development that is not only sustainable in an environmental stance, but also in a worldly sense. This comes as a limitation of my research, as it is difficult to conduct research on those within the demographic that depend on a green economy. Steven Cohen addresses this idea in correlation with policy in “Economic Growth and Environmental Sustainability”. Cohen (2020) writes, “The climate problem is not caused by economic growth, but by the absence of effective public policy designed to reduce greenhouse gas emissions. There is nothing incompatible with capitalism and environmental protection as long as rules are in place that control the environmental impacts of the products and services we make and use”. Cohen emphasizes the importance of environmental policy, which correlates with the idea of a green economy. In order to have development and growth in a sustainable manner, there must be policy to ensure overall cleanliness and consistency within a civilization. This outlines another potential topic which could be outlined within my survey, adding onto the idea of one believing in climate change.

Sustainable development is not simply development of an area in an environmentally conservative manner, but the action of making a world where life is not burdened by its difficulties. Stephen Polasky emphasizes this within “Role of Economics in Analyzing the Environment and Sustainable Development”. Polasky (2019) writes, “Sustainable development is not just about sustainability in the sense of how to maintain the environment. Sustainable development is about how to simultaneously alleviate poverty/improve material standards of living and maintain or enhance vital natural capital necessary for future well-being” (p. 4). Without policy, none of this is possible. In order to fight poverty and improve life for those within third-world countries, the ideas of a green economy and sustainable development are
necessary. Without all three of these ideas in combination, they are not independently possible. At the world’s current state, solving climate change is not only a positive for the environment, but also enabling for the impoverished. The effort to fight climate change is not simply cutting back but developing in a sense to create opportunity and decrease negative emissions and unsustainable ways of life.

**Winter Sports**

Winter sports are not only a personal interest of mine, but one that closely relates to the general topic of this research. Due to the geographical location and wealth of the research group, it is likely that many have been involved in a winter sport at least once in their lifetime. Does this connection create a correlation between one and their willingness to recycle or be environmentally conscious? Benoit Morenne explains the dangers winter sports face and how they can be combatted in “How Skiing Can Survive Climate Change”. Morenne (2021) writes, “Nearly all ski areas in the U.S. are projected to have at least a 50% shorter season by 2050”.

Presenting this information to participants potentially could change their point of view on climate change, relating to the ideas of development, as it would allow participants to show their personal opinions on certain topics other than recycling. Ellie Ross addresses this topic again in “Can skiing ever be green?”. Ross (2021) explains, “A typical one-way journey by plane to a ski resort creates around 122 kg of CO2 per person, while a journey by train emits 90% less (12 kg of CO2 per person), according to research by Best Foot Forward”. Ross’ findings directly correlate to those of Morenne, showing the effects of climate change on skiing. Ross brings these finding to a different perspective, showing how a singular person can change their actions in
order to support a personal passion. The relationship between the research shows an issue within those who access winter sports and their transportation.

Climate change has been growing issue over the years, both politically and environmentally. Over the last two decades, concern has grown for the health of the planet, and for good reason. Jennifer Davis-Flynn outlines the effects of climate change on the winter sports industry in “Colorado Snow Sports Industry Fights Climate Change”. Davis-Flynn (2019) writes, “In the past 15 years, low-snow years have translated to a decrease of 5.5 million skiers nationwide, causing economic losses of $1 billion and 17,400 jobs”. Jobs and profit are what keep the industry alive. Throughout the current ski season, many resorts have struggled with staffing on their mountains, leading to a decrease in profit. This has especially been prevalent within Colorado, and has been brought up by Jason Blevins in “Epic crowds are colliding with epic labor shortages at ski areas”. Blevins (2021) writes, “One patroller at Breckenridge, who cannot speak on record due to Vail Resorts policy on talking with media, said a lack of chairlift operators, lift mechanics and snowcat drivers has slowed the resort’s ability to open terrain” (p. 2). Due to these large decreases in the environmental health of the mountains, success has been limited, and this can be attributed to climate change. Not only are the actions of skiers effecting the mountains they love, but those who live their everyday life without any form of environmental conscientiousness. With ski seasons becoming shorter and shorter, profits will continue to decrease, leading the industry to die. Without environmental conscientiousness, there is no hope for the survival of winter sports.
Method

Within my research project, I will be utilizing correlational research to conduct my study. The definition of this method is observing differences between two variables without creating a change to the subject(s). In simple terms, correlational research compares two different entities and finds similarities between them.

I chose this method for a multitude of reasons, but mainly for its ability to incorporate two variables seamlessly. Correlational research allows for the comparison of two variables, which directly aligns with my research question and hypothesis. The entire basis of my research revolves around the idea of one variables dependency on another, which grants a more concise process in analyzing data. This method also had a large impact in my process for data collection, as it requires the researcher to take a step back from interaction with participants. This is one of the main benefits of this method because of its ability to create separation between participants and the researcher, promoting reliability in results. This is especially true in my instance, as the survey relies on data collected from a survey, which can be taken without supervision from the researcher. When researching similar topics, I saw other researchers use a similar method, in only collecting age and willingness to recycle. This inspired me to utilize this method, as I knew it would be successful in this realm of research.

I also considered utilizing ethnographic research, which is an observational research method that investigates certain demographics and groups to try and understand different things about their life and actions. This method aligned with my original research topic and project, and I contemplated utilizing it for my current project as well. However, the aspect of observation did not bode well with the new form of data collection, as ethnographic research requires pure observation rather than the direct correlation between two different variables. Initially, this
method aligned well with the idea of personally observing recycling habits within High School X, but this plan was not feasible. It would require all participants to be completely honest, and would not have an efficient way of obtaining proper consent. Ultimately, I decided against using ethnographic research and the entire research plan all together.

To begin my research, I defined two variables: willingness to recycle and age. These are the two things I will be comparing in my research, as well as obtaining data for. Taking inspiration from ethnographic research, I created a survey testing participants, (High School X students), on their willingness to recycle, as well as collecting their age and grade number to accurately compare the two data points. To begin the survey, I will be giving a required informed consent question, expressing the use of the data being collected and exactly what will be analyzed from the collected data. Within my method, I had to define which groups would most likely be more or less conscious about their recycling habits. So, I chose to define the age groups to underclassmen and upperclassmen within High School X, which allows for outside factors such as differentiation in education and promotion for recycling to be negated. In order to promote honesty and validity within the results of my survey, I will be sending it to various homeroom teachers among all four grades at High School X in order to distance myself from the participants, hoping that their anonymity will make them answer the questions more truthfully. Initially, I planned to choose homerooms at random in order to further decrease the chance of any dishonesty, but after consideration, it was understood that there was a possibility of two students from the same household who could complete the survey with similar answers, which would cause disarrays within my data.

This method is easily replicable if utilized in a high school environment. Most of the basis of the method uses standards that are common within most American high schools, so this
method, or a modified version, could very well be utilized in a different environment than High School X. One issue that may arise is the homeroom structure. At High School X, homerooms are organized by grade level and last name in alphabetical order. If a high school does not use this system, they would have to find an alternative to this part of the research process. In the event of this, one could target a certain subject area, such as Math, and send it to all teachers within that department asking if their students could participate within their study. Once again, the issue of overlapping data between households could arise, however roster lists of classes could avoid this issue. One final issue one may face in replicating this method is the accessibility to technology. All students have access to a device, either personal or school provided, at High School X, which ensures that each student in every homeroom the survey is sent to has the ability to complete the survey, regardless of their decision to do so. Within a school district that does not meet these same standards, a paper survey may need to be administered, which would cause differences in data collection and analysis. Ultimately, this method is easily replicable in most, if not all, high schools within the United States, as long as their school follows a similar structure to that of High School X.

Data Analysis

Background

For my research, I conducted a survey in order to analyze the correlation between willingness to recycle based on age.

Findings

Within my research, I found that 20.93% of participants would rather incorrectly dispose of a recyclable than wait to correctly dispose of said recycle, in the event that there was improper
waste management at their location. More specifically, the percentages for each age value are as follows: 0% (14 y.o.), 22.22% (15 y.o.), 26.09% (16 y.o.), 20% (17 y.o.), 50% (18 y.o.).

Another aspect of my research was the willingness to recycle in a classroom, specifically with paper. Overall, 83.53% of students said that if they were to dispose of paper within a classroom, they would throw it out in the recycling bin rather than the garbage bin. The specific percentages for each age are: 77.78% (14 y.o.), 89.47% (15 y.o.), 79.17% (16 y.o.), 84.62% (17 y.o.), 85.71% (18 y.o.).

Looking into each participant more specifically, I analyzed their thoughts on the recycling habits in their own home, wondering if they believed their standard met those of society. According to my data, 70.59% of my participants believe that their household holds up to societal standards, in the sense that all paper, bottles, and overall waste is disposed of properly. Specifically, the in depth values are: 77.78% (14 y.o.), 73.68% (15 y.o.), 61.54% (16 y.o.), 73.08% (17 y.o.), 87.71% (18 y.o.).

Looking at the personal recycling habits of the participants, I chose to analyze whether participants were conscious of if the waste they were disposing of during their lunch was recyclable or not. Overall, 51.76% of my participants are aware of the recyclability of the waste of the items they eat at lunch. For specific ages, the percentages are: 55.56% (14 y.o.), 47.37% (15 y.o.), 54.17% (16 y.o.), 53.38% (17 y.o.), 57.14% (18 y.o.).

For the final question of my findings, I will be analyzing my participants opinion on climate change. Overall, 83.53% of my participants believe in the ideology of climate change, 10.59% may believe in climate change, 4.71% don’t believe in climate change, and 1.18% aren’t sure if they believe in climate change. Looking more closely, the specific percentages for those
that believe in climate change are as follows: 88.89% (14 y.o), 84.21% (15 y.o.), 79.17% (16 y.o.), 88.46% (17 y.o.), 71.43% (18 y.o).

**Analysis**

Looking at my data, it can be seen that there is an alignment to my hypothesis. Analyzing the first piece of data, it is clear that upperclassmen, which will include 17 and 18 year old’s, as they include the majority of upperclassmen, are more conscientious of how they dispose of their waste when there is improper facilities, as only 16.10% of underclassmen said they would wait to dispose of the garbage, while 35% of upperclassmen responded that they would also wait to dispose of their waste. There is a 117.39% increase from underclassmen to upperclassmen, showing the differentiation between the ideologies they believe.

This trend of age being beneficial to one’s environmental conscientiousness is more or less consistent throughout the rest of data, as well. On average, upperclassmen were about 10% more likely to recycle within a classroom than underclassmen, showing the gap between the ages. Even in this small margin, the differences in outlook on how their effects are impactful is truly apparent. In relation to climate change, those who participated and were underclassmen, 84.09% believed in the ideologies of climate change, while only 79.97% of upperclassmen responded that they believe in climate change. This margin was specifically surprising, especially in its relation to my hypothesis and the rest of the data. This specific statistic does not correlate with the ideologies of my thesis nor the results of alternative data. Overall, these fluctuations show that upperclassmen (17 and 18 year olds) are more willing to recycle than underclassmen (14, 15, and 16 year olds).
Conclusion

New Understanding

Through analyzing my method and findings, it has been seen there is a correlation between age and willingness to recycle. Through the survey, it is expressed that those that are younger are far more likely to be less conscientious than those who are older. It has proven that education to younger audiences is necessary in order to improve the future environmental health of Earth, and that currently, the recycling habits of many do not meet to societal standard which is needed for environmental health. Based on my research, process, and analysis, my new understanding of this topic is that contrary to popular belief, many are still not doing enough to assist in the revival of environmental health, and action must be taken to amend this issue.

Limitations

Throughout my data collection, I experienced a multitude of limitations, which inhibited me in completing my research in the best way I saw fit. The difficulty arose in the selection sample, as there was no clear cut way to ensure validity as well as having a multitude of data. Due to the structure of the survey sent out to participants, it would have been redundant to gain multiple points of data from the same household, so it was sent to select homerooms across all grade levels in order to combat this issue. However, this only led to 85 responses, which was a much smaller margin than expected. This is due to the fact that in order to maintain validity, I separated myself from the participants to ensure anonymity, and entrusted homeroom teachers in distributing the survey. Overall, this limitation strongly affected the amount of participants that completed the survey, due to the fact that I was unable to be present to ensure participation.

Future Research
In order to further research in this subject area, the method would be utilized in a different sample size and demographic. The general ideology of this research would be applied; however the sample size would be able to be increased, providing more accurate results across a multitude of participants. Utilizing this method at a larger scale, legislature and policy could stem, improving the environmental situation of the United States, or even the world. This improved research is exceptionally valid, taking the true environmental health of the United States into question. On a smaller scale, likewise to the implications of my current method, policy and standards can be elevated to meet new expectations for environmental health, such as more strict disposal programs within schools and workplaces. In totality, if this basic method were used at a different scale, with a researcher who had the ability to reach a larger subject group and conclude more concise conclusion, then legislature and new societal standards could be established in order to counteract the current environmental concerns at hand.

**Implications**

The overall implication of my research, and main goal, would be expressing the issues that lie beneath the surface of recycling habits. Through the findings of my research, new policies and programs can be implemented in order to combat the issue and begin to create change in the world. The target of this research was high school aged participants, meaning that these policies can be implemented within schools, even if they do not align directly with the high school surveyed. Not only will these policies make an immediate impact, but a long lasting one, as these foundations of environmental conservation will be built within the students to carry along with them into adulthood. This can be connected to the idea of a green economy, first proposed by the United Nations, leading to more environmentally conscious life for not only those living within third-world countries, but those in developed nations as well. In a more
worldly sense, these policies can be viewed as an investment into the health of planet Earth, which has recently been showing signs of deterioration. In totality, the findings of this research project can influence programs to reduce one’s overall waste, build foundations of environmental conscientiousness for the future generations, and allow for a healthier future for Earth, which is in desperate need.
References


