

# **EXPLORING ATTITUDES ON ENVIRONMENTAL RESPONSIBILITY ON A COLLEGE CAMPUS**

A Senior Scholars Thesis

by

GRACE ANNE KOY

Submitted to the Office of Undergraduate Research  
Texas A&M University  
in partial fulfillment of the requirements for the designation as

UNDERGRADUATE RESEARCH SCHOLAR

April 2010

Major: Environmental Design

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Approved by:

Research Advisor:  
Associate Dean for Undergraduate Research:

Rodney Hill  
Robert C. Webb

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## **ABSTRACT**

Exploring Attitudes on Environmental Responsibility on a College Campus.  
(April 2010)

Grace Anne Koy  
Department of Architecture  
Texas A&M University

Research Advisor: Dr. Rodney Hill  
Department of Architecture

The primary intention of this project is to determine the driving factors that would encourage environmental responsibility on a college campus. After observing increases in “global average air and ocean temperatures,” the Intergovernmental Panel on Climate Change concluded that global warming is unmistakable. In order to reduce our negative impact on the environment, we need to take action. Many college campuses are moving toward more sustainable practices, such as energy efficient buildings, but these are not always translated into a more environmentally responsible student body. My methods consisted of both qualitative and quantitative research approaches. The qualitative section consisted of an extensive review of existing literature. This produced a best practices report of the most sustainable colleges in America. The quantitative portion was comprised of the development and administration of a survey. The survey questioned students on their attitudes on green behavior, attitudes and knowledge of the best green practices on a college campus, and their current green behaviors. The highlighted factors in the survey were incentive, convenience, ethics, and awareness.

The target audience was members of the National Society of Collegiate Scholars from Texas A&M and the University of Colorado – Boulder, one of the most sustainable schools in the country. The survey results were compared to determine any significant differences. The results showed that convenience and awareness are the driving factors in sustainable student behavior. Incentive and ethics can be considered cultural factors that vary by region. These factors can be reduced by the driving factors. I believe a compromise can be reached at Texas A&M between attitudes and behaviors to create an environment that encourages a more sustainable student body.

## **ACKNOWLEDGMENTS**

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I would also like to thank my family for their financial and emotional support. My classmates and friends, Ky Coffman, Jenna Potz-Nielsen, Haley Adam, Josh Hinkle, Erin Callahan, and Brian Frye, were priceless. Their continual help brainstorming and constant encouragement was invaluable. Finally, I would like to thank the Texas A&M University College of Architecture and the Undergraduate Research Scholars Program for their financial support.

**NOMENCLATURE**

ASU	Arizona State University
CU	Colorado University- Boulder
GT	Georgia Institute of Technology
NCU	University of North Carolina at Chapel Hill
NCS	National Society of Collegiate Scholars
TAMU	Texas A&M University
UC Berkeley	University of California – Berkeley
UCLA	University of California- Los Angeles
UCSD	University of California – San Diego
WU	University of Washington - Seattle

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# CHAPTER I

## INTRODUCTION TO ENVIRONMENTALISM AND ATTITUDE-BEHAVIOR CONSISTENCY

The primary intention of this project was to determine the driving factors in encouraging sustainable behavior in students on a college campus. After observing increases in “global average air and ocean temperatures”, the Intergovernmental Panel on Climate Change concluded that global warming is unmistakable (IPCC). In order to reduce our negative impact on the environment, we need to take action. Many campuses are moving toward more sustainable practices, such as energy efficient buildings, but these are not always translated into a more environmentally responsible student body.

Students at Texas A&M University and CU - Boulder were surveyed on their attitudes towards green behavior and the best green practices on a college campus. The project focused on student responses in three areas of sustainability: transportation, recycling, and food and dining services. These three focuses were evaluated by four aspects: convenience, incentive, awareness, and ethics. I believe a compromise is possible between the attitudes and practices to create an environment that encourages a more sustainable student body.

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This thesis follows the style of *Environment and Behavior*.

To further narrow the scope of this vast topic, I will focus on three objectives. They are as follows:

- I. What are students' attitudes toward current and prospective sustainable practices on a college campus?
- II. How (if at all) do the attitudes vary?
- III. What is the driving determinant of attitude behavior consistency?

### **Environmentalism**

Prior to the Industrial Revolution, our carbon output was harmonious with the amount of unnatural emissions that the earth could handle. Once we began urbanizing the earth and burning more fossil fuels, the amount of carbon dioxide and other greenhouse emissions released into the earth's atmosphere became too high, and an "extra- thick heat blanket" formed around the world ("The Basics of Global Warming ," 2009).

It is now widely accepted that the earth is experiencing a worldwide climate change. The Intergovernmental Panel on Climate Change (IPCC) states that the "increase of atmospheric greenhouse gas concentrations leads to an average increase of the temperature." Temperatures have climbed about 1 degree Fahrenheit since 1880, and according to the IPCC, "11 of the past 12 years are among the dozen warmest since 1850" (IPCC). The increase in temperature is believed to contribute to the melting of polar ice caps and the rise of sea level. The recent increase of extreme weather conditions and an increase in coral reef bleaching have also been attributed to the

changing climate ("Global Warming Fast Facts," 2009). "Environmental problems were certainly not unknown in the past, but possibly for the first time in human history there [is] now the perception of an environmental crisis" (Guha, 2000).

The American Geophysical Union states in its position on climate change that "natural influences cannot explain the rapid increase in global near-surface temperatures observed during the second half of the 20th century" ("The Basics of Global Warming," 2009). Natural influences cannot prevent these effects either. However, we can. "Environmentalism must be viewed as a social program", and by living a low-carbon lifestyle, we can help reduce the rate temperatures are raising (Guha, 2000).

#### *Environmentalism defined*

TAMU defines sustainability as "the ability to meet the needs of the present while living within the carrying capacity of supporting ecosystems and without compromising the ability of future generations to meet their own needs" (Sustainability at Texas A&M University, 2009). In other words, sustainability is living a lifestyle that meets our needs as a society without preventing future generations from meeting their own needs.

Environmentalism is defined as the "advocacy of the preservation, restoration, or improvement of the natural environment, especially the movement to control pollution" ("Environmentalism", 2009). To narrow the scope of these broad definitions, I focus on three areas of sustainability and environmentalism: transportation, food and dining services, and recycling.

## Transportation

Sustainable transportation benefits us in several ways. In addition to reducing our impact on the environment, sustainable transportation, such as biking or walking, helps us to increase our level of physical activity. Over the past five decades, people have begun to use less energy on work, transportation, and household activities. Instead, sedentary habits, such as driving, have become more prominent in our daily activities. More than 95% of adults do not meet the recommended amount of daily physical activity, and 66% of American adults are overweight or obese. Personal choice is not the only factor in the level of personal physical activity. The design of the built environment can either enhance or inhibit physical activity in a community. Communities with sidewalks, bike lanes, and trails have seen a definite increase in physical activity than those without (Kerr, 2008). Sustainable transportation opportunities can help students to increase their level of physical activity and decrease their impact on the environment.

## Food and dining services

Food and dining services have a unique opportunity to serve the students directly. Eating is something that every student has in common, but the way students eat can differ greatly. Yale University is known for their sustainable food practices. They have a garden market that sells goods locally and is used on campus. Forty-nine percent of the food used at Yale is local, seasonal, and organic (“My School is Greener than Your

School,” 2009). By providing sustainable food options for students, Yale’s dining services are helping to decrease the impact that students are inevitably going to make.

### Recycling

According to the National Recycling Coalition, Americans put enough aluminum cans into a landfill to recreate our entire commercial air fleet (National Recycling Coalition, 2009). Further, the United States is the “number one trash-producing country in the world at 1,609 pounds per person per year. This means that 5% of the world's people generate 40% of the world's waste” (“Recycling Facts”, 2009). The University of Colorado- Boulder has a student directed recycling program (“My school is Greener than Your School,” 2009). By providing students with adequate opportunities to recycle, CU is decreasing their impact on the environment.

### *Environmentalism in education*

Eighty percent of Americans today have a high school or higher education (“USA Today”, 2009). Thus, it is logical to conclude that many of the ideas and changes needed in the world should be incorporated at these levels. Environmental responsibility should not be an exception. In addition, high school students are becoming increasingly aware of green practices in schools and consider this when selecting a college.

Universities are beginning to embrace sustainability and use green practice surveys for sustainability rankings. This makes their practices known to the public. However, most

of the publicity focuses on energy use such as wind power, renewable energy, and carbon emissions. Many universities still lack an environment that promotes green behavior in students (“Higher Education Moves Toward Sustainability,” 2009). Margaret Trott discusses the trendiness of going green in her article in Messiah College’s Student Newspaper, “The Swinging Bridge”. She promotes the “reuse” aspect of sustainability over purchasing new “green” items, such as the new hybrid cars recently purchased for the college and questions if green purchasing is a worthy investment (Trott, 2009). Trott provides an example of how some sustainable actions do not translate to the student body’s behavior.

#### Arizona State University (ASU) walkability

Another example of a disconnect between sustainable practices and students is found in an article in the Journal of Social Clinical Psychology. This article focuses on walkability on college campuses. It compares college campuses to high-density communities and analyzes the distance walked and the amount of steps students from two college campuses, ASU-Tempe and ASU- Polytechnic, take in a week. The statistics were analyzed and compared to the built environments of both campuses. The Tempe campus has many destinations within walking distance, sidewalks on every street, and is built on a grid that isolates vehicle traffic. The Polytechnic campus has fewer walkable destinations, very few sidewalks, and is laid out along a road with lots of vehicle traffic. The results showed that the built environment of the ASU Tempe campus is more conducive to pedestrian behavior than the Polytechnic campus. Both

colleges have similar sustainability practices, but the students at ASU Tempe showed more sustainable behaviors because of the built environment (Sisson, McClain, & Tudor-Locke, 2008).

### **Attitude behavior consistency**

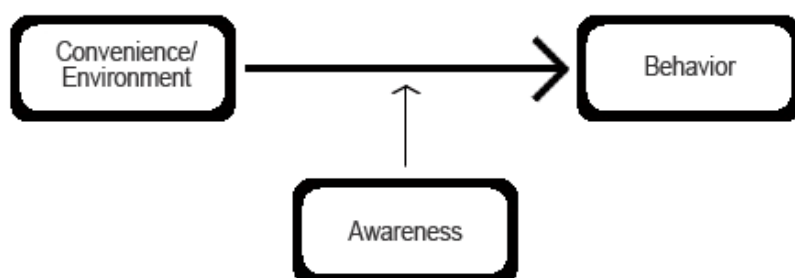
Attitude has been the subject of research for social psychologist for many years. Over the years, many different definitions of attitude are considered. For the purpose of this project, attitude is considered as “a general latent disposition which underlies affective, cognitive, and behavioral responses to an attitude object” (Ajzen, 2005). In other words, an attitude is a personal outlook that is driven by thoughts about the subject, feelings towards the subject, and intentions toward the subject. Attitude behavior consistency is the correspondence between declarations and actions. Social psychologists have discarded the idea of a clear-cut connection between attitude and behavior (Byrka, 2009). In their book *Understanding Attitudes and Predicting Social Behavior*, Ajzen and Fishbein discuss the idea that intention is the driving determinant in a person’s behavior. They describe intention as:

a function of two basic determinants, one personal in nature and the other reflecting social influence. The personal factor is the individual’s positive or negative evaluation of performing the behavior. The second determinant of intention is the person’s perception of the social pressures put on him to perform or not to perform the behavior in question (1980).



People will act upon an intention if they determine it as positive and believe “important others think they should perform it” (Ajzen & Fishbein, 1980).

Campbell’s paradigm is another major theory in attitude behavior studies. Katarzyna Byrka discusses his theory in her thesis on attitude behavior consistency. According to Byrka, Campbell subscribed to the idea that situational limitations such as social norms create different settings for behaviors. In his theory, the behavior’s difficulty is determined by to “total cost of performance” (Byrka, 2009).



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**Figure 1: Conceptual framework.**

It is believed that “a large number of people will take pro-environmental actions if they have access to a convenient way of doing so” (“The Demographics of Recycling and the Structure of Environmental Behavior,” 1997). I hypothesize that redefining a norm and creating a space that is more conducive to perform sustainable actions will result in more

environmentally responsible behaviors, shown in Figure 1. In my research, I will test this by exploring the aforementioned areas of sustainability and determining the driving determinant in student attitude-behavior consistency (or inconsistency).

## **CHAPTER II**

### **METHODS AND MATERIALS**

This project will use both qualitative and quantitative research methods. The qualitative portion consists of the extensive review of existing literature and the production of a best practices report on sustainable practices on college campuses. The literature review determined the three most reliable and popular ranking sites to be The Princeton Review, College Sustainability Report Card, and the Sierra Club's rank ("The College Sustainability Report Card", "A Comprehensive Guide to the Most Eco-Enlightened U.S. Universities", "The Princeton Review"). Using information from these sites, I compiled a list of the top schools that are similar to TAMU. I marked off all of the schools on the Vision 2020 list, TAMU's benchmark peer institutions, which appeared on the aforementioned ranking sites ("Vision 2020"). I then cross-referenced these rankings against each other to determine which schools had appeared more than once. Once I had the top Vision 2020 schools and the repeating schools listed, I checked to see if the schools were public or private. I included only public schools that would have similar funding and opportunities to TAMU. My final ranking includes eight schools. See Table 1 for the list.

**TABLE 1**  
**MOST SUSTAINABLE UNIVERSITIES**

Arizona State University	Tempe, AZ
Georgia Institute of Technology*	Atlanta, GA
University of California*	Berkley, CA
University of California*	Los Angeles, CA
University of California*	San Diego, CA
University of Colorado	Boulder, CO
University of North Carolina*	Chapel Hill, NC
University of Washington	Seattle, WA

Note: Schools denoted with an \* are Vision 2020 Peer Institutions.

### **Best practices report**

I also conducted research on local cultures and green practices in transportation, recycling, and food and dining services. Information was retrieved from each campus' website on sustainability and compiled into a survey. This survey was a simple checklist of sustainable practices. A representative from each of the most sustainable schools and TAMU completed it. Using the responses and my personal research, I defined the ideal green college campuses in a "best practices" report, as seen in the table on page 19.

### *University practices*

Many of these schools are involved in national organizations that hold them accountable for their sustainability practices, one of which is the American College & University Presidents' Climate Commitment (ACUPCC). This organization is dedicated to reducing or neutralizing greenhouse gas emissions at universities and colleges in America. The requirements are: an emissions inventory, set a date for becoming climate

neutral within 2 years, take immediate steps to reduce greenhouse gas emissions by choosing from a list of short-term actions, integrating sustainability into the curriculum and making it a part of the educational experience, and making an action plan. Most relevant to my research is the commitment's requirement of a university to prepare students to understand and deal with environmental issues in any line of work. The ACUPCC believes that Universities are the role models in a community. Although they only make up "2-3% of our carbon footprint...they are 100% of our educational footprint" ("Presidents' Climate Commitment").

#### Texas A&M University

TAMU was among the schools that participated in the College Sustainability Report's survey. This survey asks about the President's Climate Commitment, but TAMU is currently not a part of it. At this time, TAMU diverts only about 10% of trash and only recycles paper, cardboard, aluminum, and some plastics. Although 99% of landscape waste is composted on campus, there are no other bins for combustibles ("Texas A&M University- Green Report Card 2010"). Single stream recycling is one way to improve this statistic. It makes "recycling almost as easy as using the trash can". The three bin collection makes this possible. One bin is for all recyclables, one is for combustibles, and the last one is for the remaining trash. Combining bins and reducing the amount of sorting increases the ease and convenience of recycling ("Single Stream Recycling", 2009). There are no sustainability themed residence halls, but there is an energy challenge in which resident halls attempt to decrease energy use by 5%. There are no

internship positions available, but there are several student organizations that provide opportunities for students to take a stand for sustainability. They are: Association for Social Entrepreneurship, Environmental Issues Committee, One Love, Community Garden and Sustainability Council. TAMU has 727 buses in its transportation fleet, of which 79 operate on biofuels, 10 are hybrid, and 39 use Flex Fuel. While there is no bike-sharing program, there is a car-sharing program that is made up of 10 cars, and 45% of people use environmentally friendly transportation to campus. Overall, we have improved our grade from a C+ in 2009 to a B- in the 2010 report (“Texas A&M University- Green Report Card 2010”).

Two of the eight goals in TAMU’s master plan have to do with sustainability. They are to “establish an accessible, pedestrian campus” and to “promote sustainability by teaching and acting in an environmentally sustainable manner” (“Campus Master Plan- Goals”). These goals are being worked toward, but based on the sustainability ratings, there is still a lot to be done before they are achieved. The second annual Campus Sustainability Day is one step toward reaching them. At this event student organizations at Texas A&M come together to promote sustainability on campus. Many organizations pass out fliers and pamphlets to raise awareness about energy, water, and recycling efforts on campus among students. Students are also given the opportunity to purchase fresh produce at this event. Campus Sustainability officer Kelly Wellman says, "This is part of our culture and we have sustainability integrated into our curriculums. These issues are important and we are preparing our future leaders to address them." She also

says "Sustainability is so much more than going green. It's about making choices that respect our resources and the financial impact of our decisions... Sustainability is about finding the balance between a healthy environment, social equity and economic growth" (Littmann, 2009). This shows that there are people at TAMU who are dedicated to improving our environmental culture.

The green practices at the top ranked universities work because they are unique to the individual cultures. But how can we change the behavior of a culture that is not already in favor of environmental issues? The Fun Theory, created by Volkswagen, is an example of how communities all over the world are using fun to "change people's behavior for the better." A piano staircase to increase use of stairs, bottle bank arcade to increase recycling of glass bottles, and the world's deepest trash bin to reduce littering are a few examples of how fun can change behaviors ("The Fun Theory"). These techniques could easily be implemented at Texas A&M to further promote green behavior in students.

### **Survey**

The best practices report was used to design a survey. This process is the quantitative portion of my research and will operationalize the variables. The survey will question a sample of students at TAMU and CU about their current green practices and behaviors as well as their attitudes toward the best practices report. The results will be used to determine a current level of typical green behavior for students on the different

campuses. It will also establish a level of compromise needed between the best practices and students' attitudes to develop green practices that are unique to the culture at Texas A&M. These practices will help the campus redefine a student's typical green behavior and level of environmental responsibility.

*Incentive for survey*

The research grants I have received from the TAMU Undergraduate Research Scholars Program and TAMU College of Architecture were used as an incentive for the target audience to take the survey. An organization was used instead of individual students because it is a more controlled audience and narrows the scope of my research. The organization selected was the National Society of Collegiate Scholars or NSCS. NSCS was chosen because it is a national organization with an active branch at both selected schools with a variety of majors and ages involved. A representative from each branch of NSCS was contacted and a drawing system was set up for the members that took the survey. The survey was conducted on surveymonkey.com, an online survey site. Once the students took the survey, they emailed the officer representative in their branch of NSCS to enter their name into the drawing. There were two prizes offered at TAMU and CU, a blu-ray player and a fifty-dollar Target gift card. All students at the selected schools were eligible to participate in the survey, but the incentive was only offered to the selected national organizations at the schools.



**Documentation**

The form of documentation for this research project is public blog, [universallygreen.blogspot.com](http://universallygreen.blogspot.com). The purpose of the blog is to keep my research reliable, systematic, and relatable. The subject is easy ways to “go green” in College Station. It also serves as an easy way to receive input on my research from interested parties and promote awareness of green behavior and practices. In addition, the references for this report were also posted for review.

## CHAPTER III

### RESULTS

As discussed in Chapter II, a best practices report was conducted and used as the framework for the survey. Table 2 shows the results of this report.

#### **Best practice report results**

Most of the schools that participated in this report went beyond the options provided in the checklist survey.

#### *Transportation*

These schools surpassed my expectations for transportation as well. GT is the only school that uses electric shuttles in this sample. UCLA encourages biking on campus by provided bike racks on buses for commuters (*UCLA Sustainability, 2009*). CU employs a mobile bike doctor to make on the scene repairs and a Ski Bus Program for those students avid about skiing (*University of Colorado Environmental Center, 2009*).

#### *Food and dining services*

At CU plastic bags are no longer used in any dining services locations on campus. Instead, students are encouraged to bring their own reusable bags. They are also in the process of implementing a trayless cafeteria. In addition to biodegradable containers at

GT, they have “eliminated Styrofoam and all other non-recyclable take out containers” at all dining services locations (*Sustainability at Georgia Tech*, 2010).

### *Recycling*

Many schools recycle much more than the items listed in the report. ASU, for example, recycles brown paper bags, chipboard, magazines and catalogs without plastic wrappers, copy paper wrappers, phonebooks, paperback and hardback books, junk mail, file folders, brochures, shredded paper, cartons, computers, and light bulbs in addition almost all of the items provided in Table 2. ASU also composts 90% of their landscape waste. CU has recently switched back from single stream recycling. In their experience, it lowered the quality of materials without increasing the diversion rate as anticipated. In this case, the culture may have been devoted enough to recycling that the convenience of single stream recycling did not make a significant impact. GT won the American Forest and Paper Association (AFPA) 2008 Paper Recycling Award. They have recycling in all of their residence halls and see move-in and move-out days as large opportunities for recycling (*Sustainability at Georgia Tech*, 2010).

### **Survey results**

Looking at this report, we can see that TAMU does not have as many sustainable options on campus when compared to the most sustainable schools. While all of these schools are actively pursuing a more sustainable campus, the schools that have seen the most



success have a more sustainable student body as well. Results highlight four potential factors in the pursuit of an environmentally responsible student body. There were eighty-six respondents from TAMU and ninety-four from CU. All results have been destroyed.

### *Survey factors*

The four potential factors emphasized in this survey are awareness, convenience, ethics, and incentive. Awareness refers to how much students know about the practices available to on campus. Convenience refers to how far students are willing to go to participate and how easily accessed the practices are. Ethics refers to how compelled students feel to participate on their own, and incentive refers to frequency of use and how much students get out of these practices.

### *Survey analysis*

Overall, CU and TAMU have several differences, but both schools' students have the same driving factors behind their environmental actions.

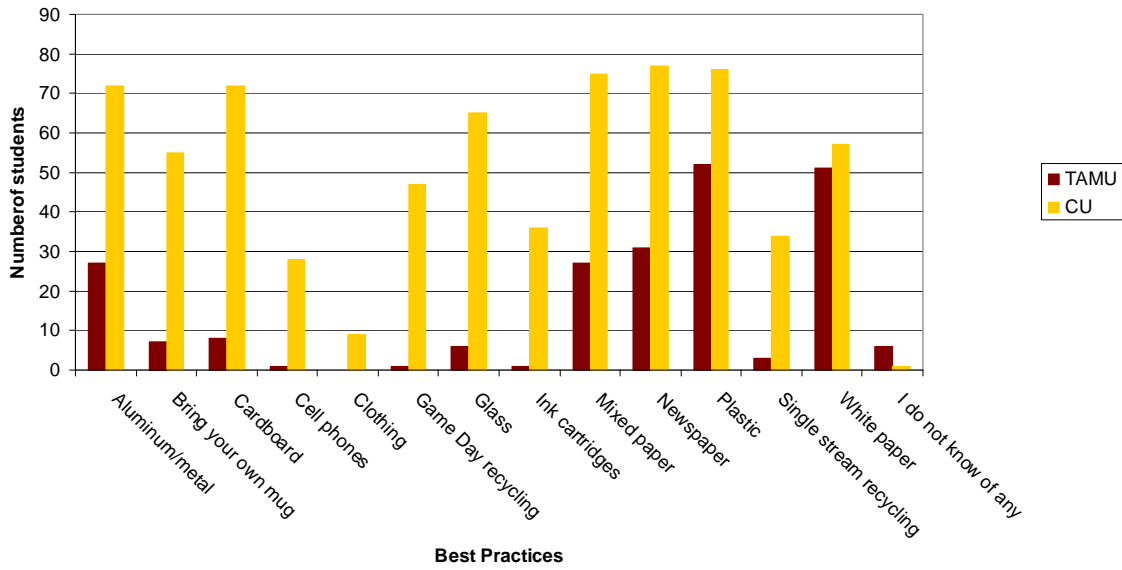
### Convenience and awareness

The most influential factors in students green behaviors are convenience and awareness. The level of convenience is dependent on the individual practice. Therefore, convenience will be discussed in further detail in the recycling, transportation, and food and dining services sections. The practices in the Best Practices Report, as seen in Table

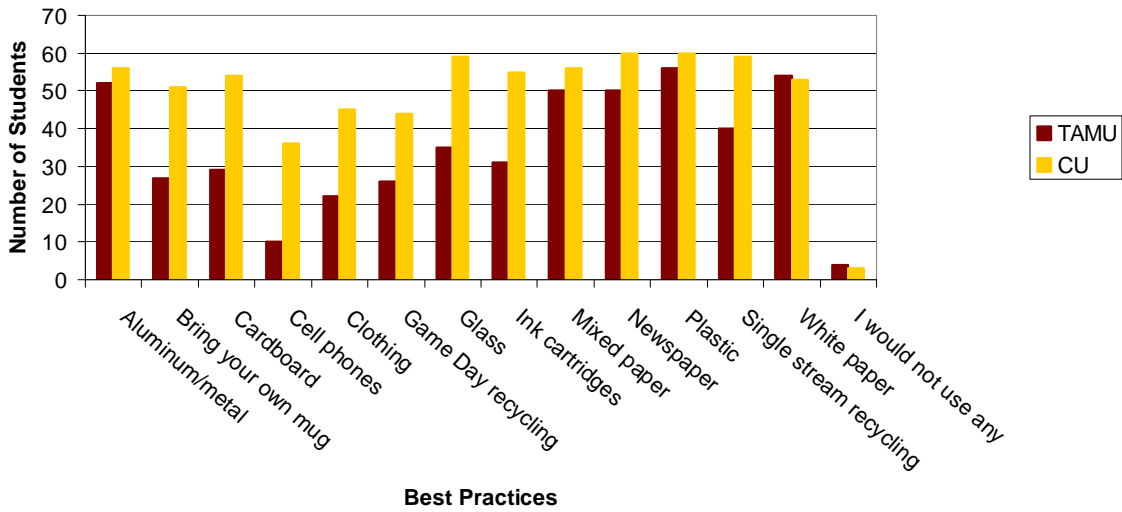
2, comprise the questions on the awareness factor. Figure 2 through Figure 7 show these results. When the results were compared to the Best Practices Report, they showed that the students at CU are more aware of the practices available to them. However, the students at both CU and TAMU would use many environmentally friendly options if they were available.

### Ethics and incentive

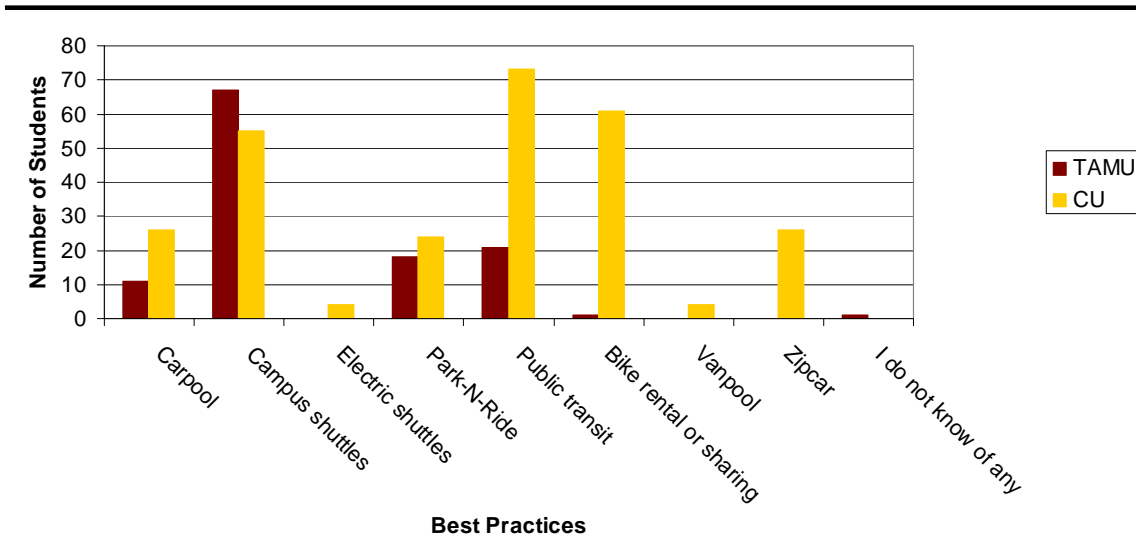
The ethics and incentive are underlying determinants in sustainable student behavior. As seen in Figure 8, CU has an overwhelming majority of students that are very compelled to participate in sustainable practices. At TAMU, the majority of students are either not compelled or somewhat compelled. The ethics factor can be considered a cultural influence. Incentive, like convenience, depends on the individual practice. Students find more natural incentive to take part in some green behaviors than others. Incentive will be further discussed in the following sections.



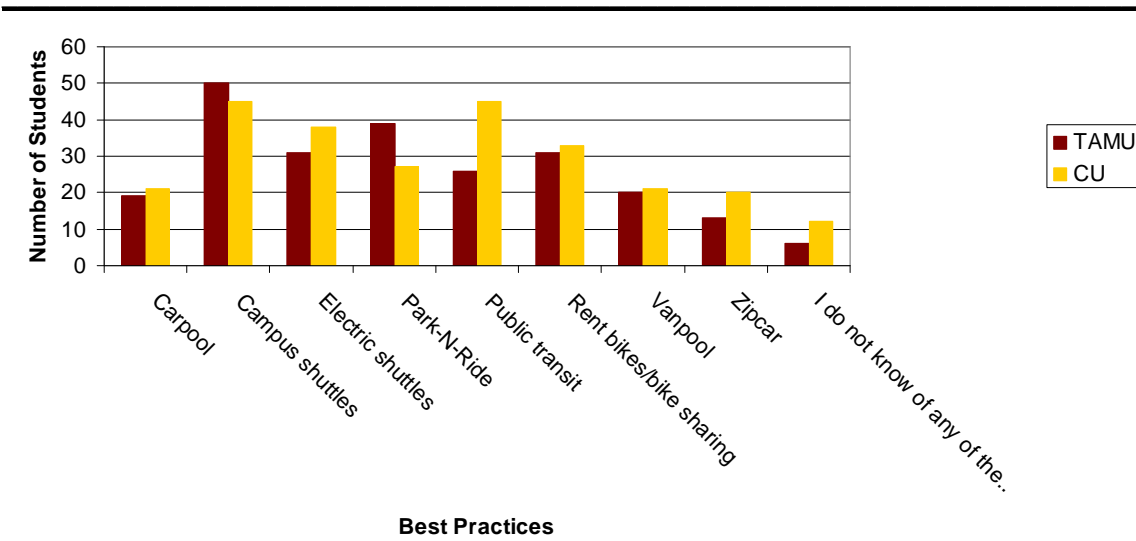
**Figure 2: Recycling options available on campus**



**Figure 3: Recycling options you would use if they were available**

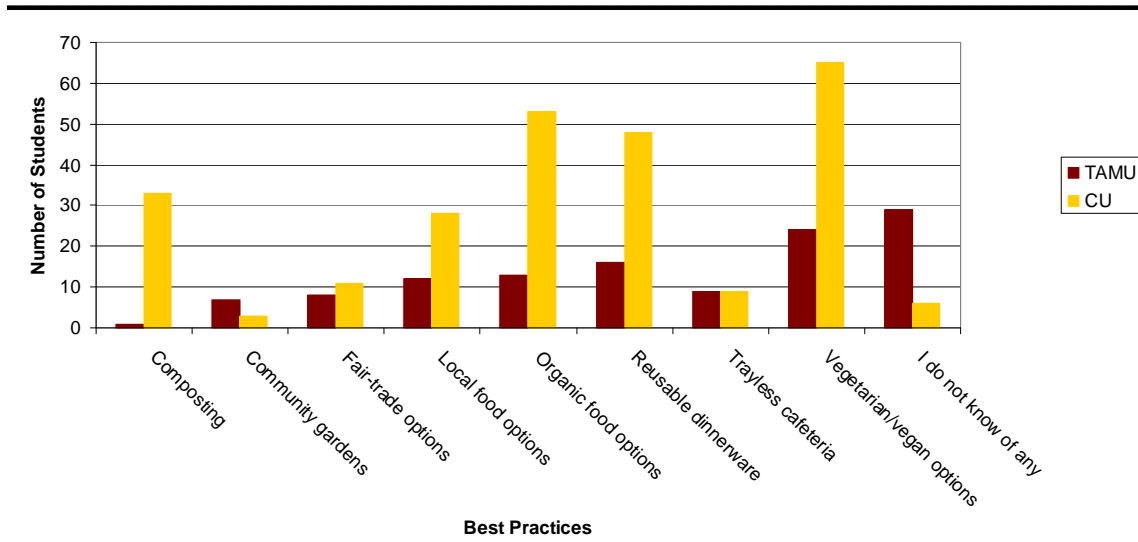


**Figure 4: Sustainable transportation options available**

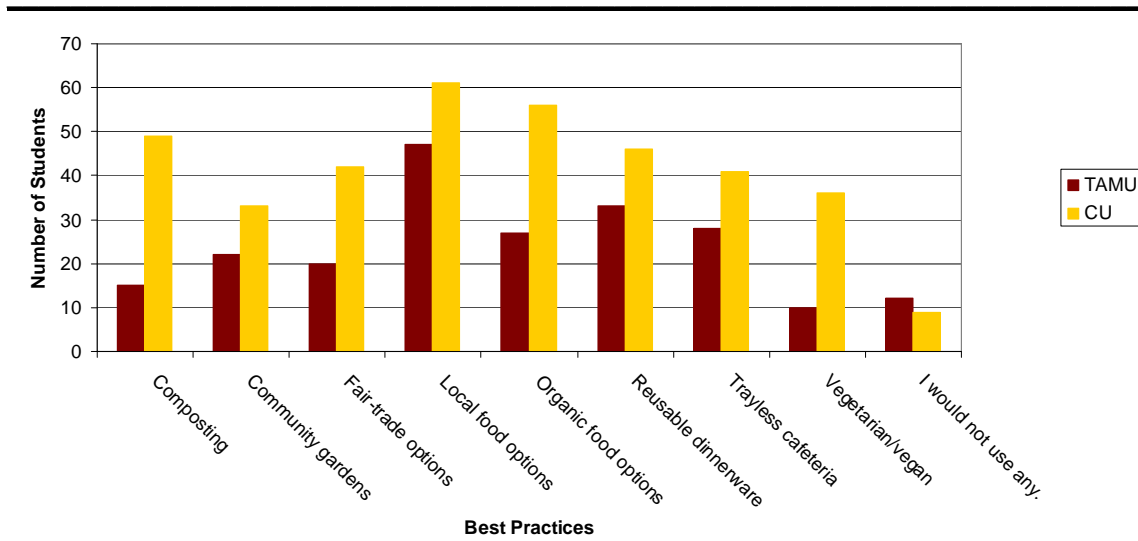


**Figure 5: Sustainable transportation options you would use if they were available**

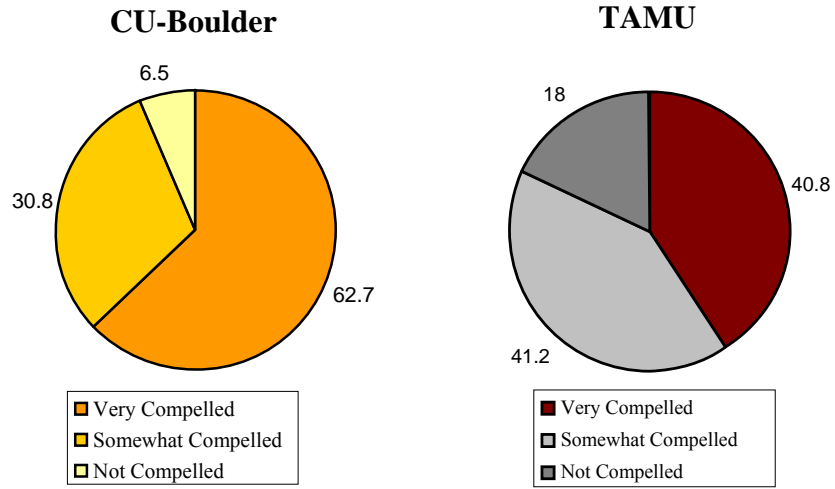




**Figure 6: Sustainable food options available on campus**



**Figure 7: Sustainable food and dining services you would use if they were available**

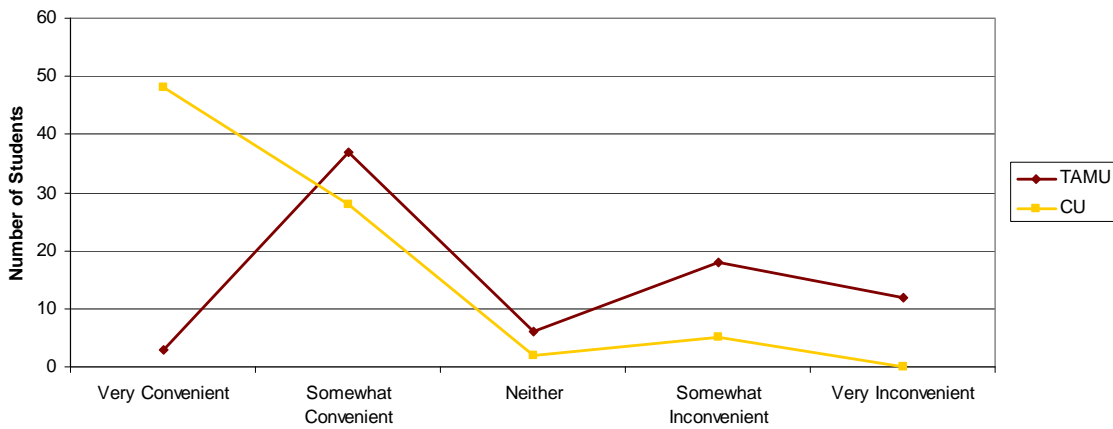


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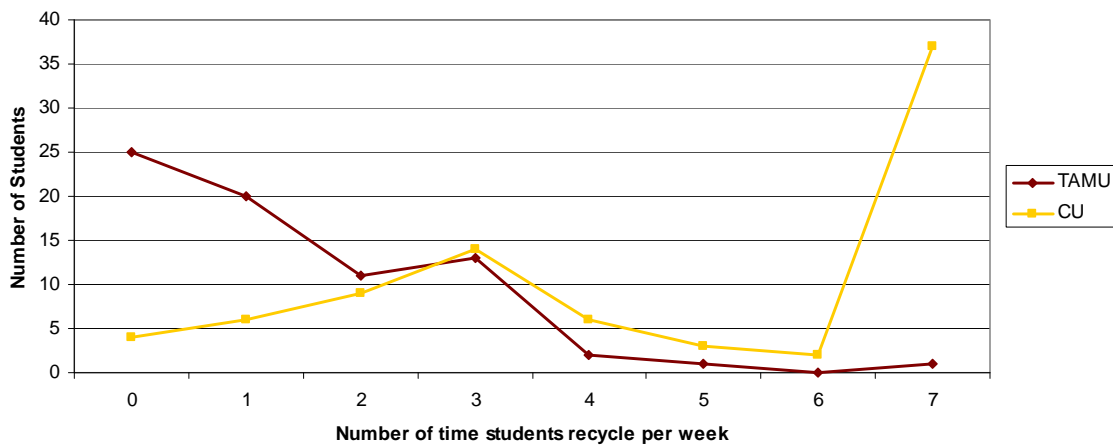
**Figure 8: Comparison of ethics factor**

### Recycling

There is a direct correlation between convenience and how frequently students recycle at both schools. The more convenient it is to recycle, the more students do so. These results can be viewed in Figures 9 and 10.



**Figure 9: How convenient it is to recycle on campus**



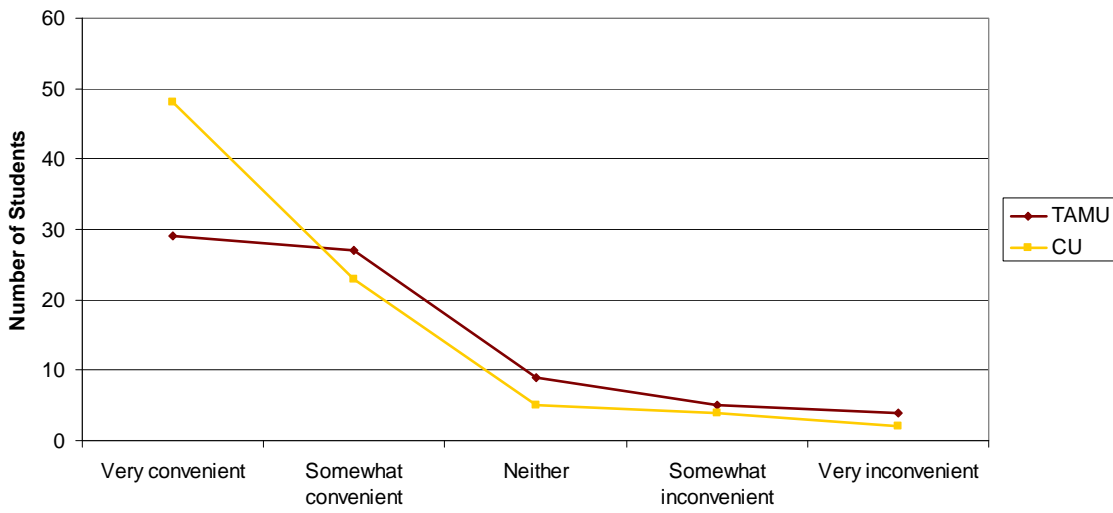
**Figure 10: Number of times a week you recycle on campus**

Transportation

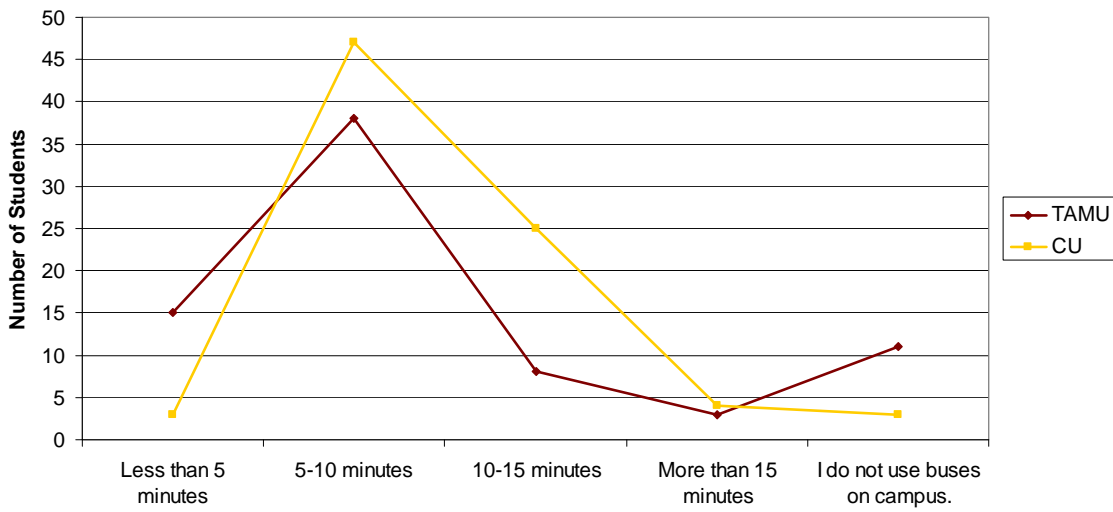
Transportation at CU and TAMU is broken down into two sub categories, on campus and off campus. On campus, the majority of students at both schools rank sustainable

transportation as somewhat convenient to very convenient. Most students only have to wait five to ten minutes for the next on campus bus. The uses of sustainable transportation on both campuses reflect this. Students at both schools typically use sustainable transportation either on campus everyday or not at all. Walking is another transportation option that many students use. Students at CU typically walk around campus, while students at TAMU use the on campus transportation more often. These results can be viewed in Figures 11 through 13.

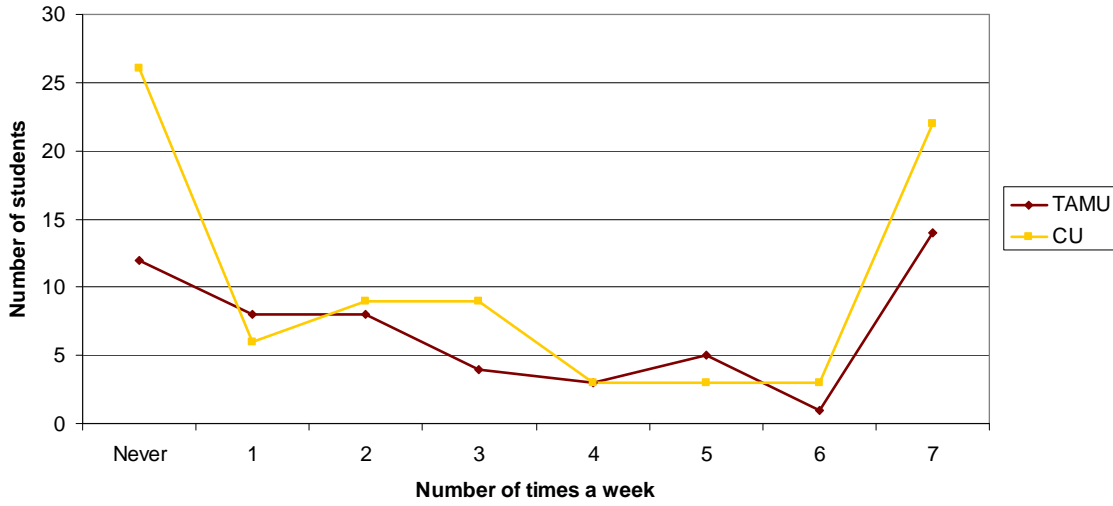
The majority of students at both CU and TAMU travel to campus everyday. The off campus sustainable transportation is used less often than the on campus transportation. At TAMU, students typically do not use sustainable transportation, such as buses or carpools, to get to campus. Most students selected “never” in the survey. However, it is more popular at CU, and like the on campus sustainable transportation, students participate in these practices everyday or not at all. Off campus results are shown in Figures 14 and 15.



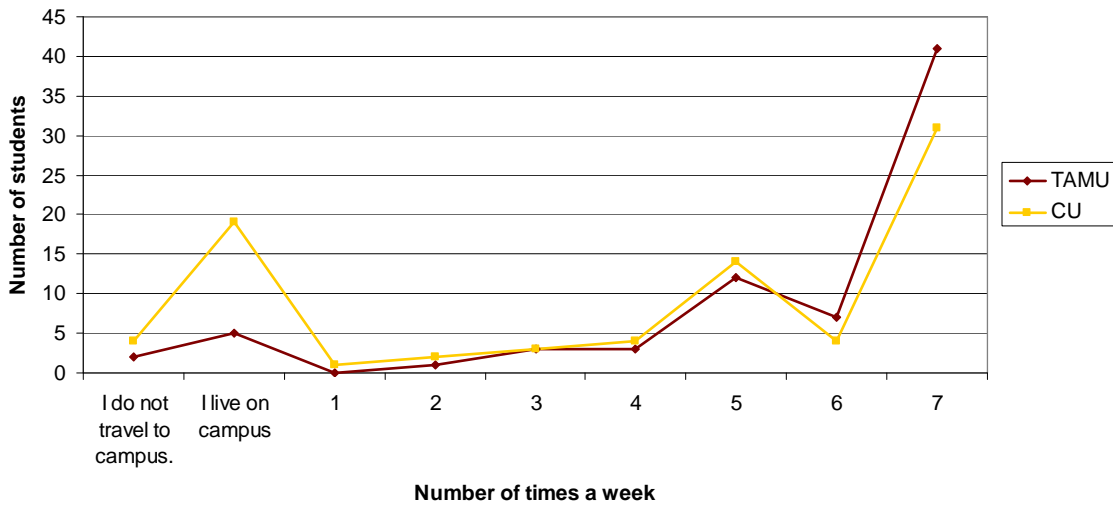
**Figure 11: How convenient it is to use sustainable transportation on campus**



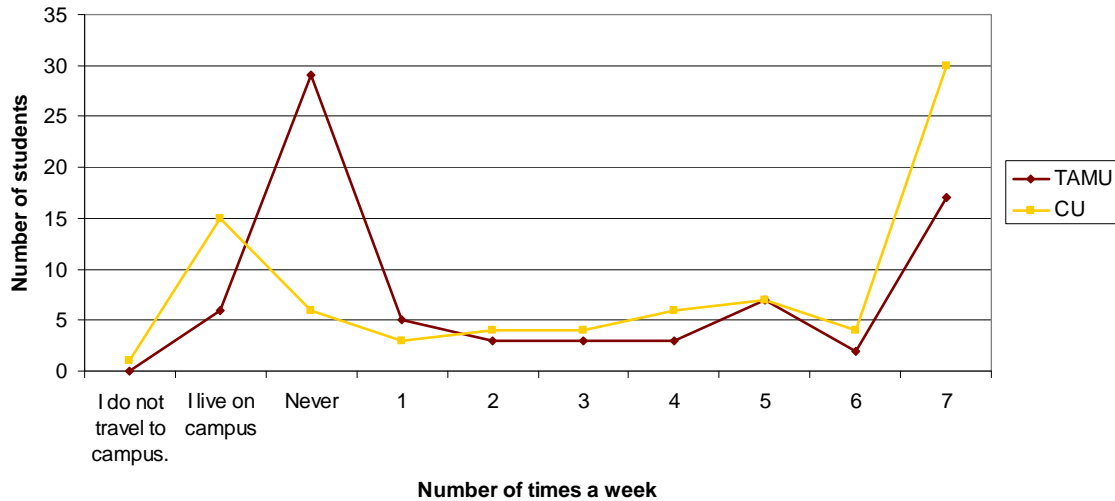
**Figure 12: Average time spent waiting for sustainable transportation on campus**



**Figure 13: Number of times a week you use sustainable transportation on campus**



**Figure 14: Number of times a week you travel to campus**

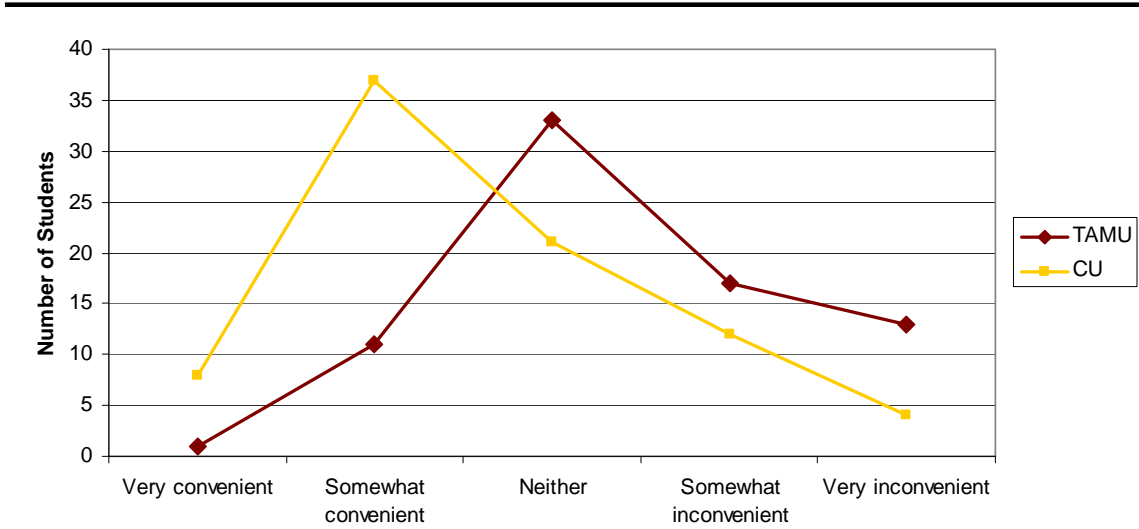


**Figure 15: Number of times a week you use sustainable transportation to travel to campus**

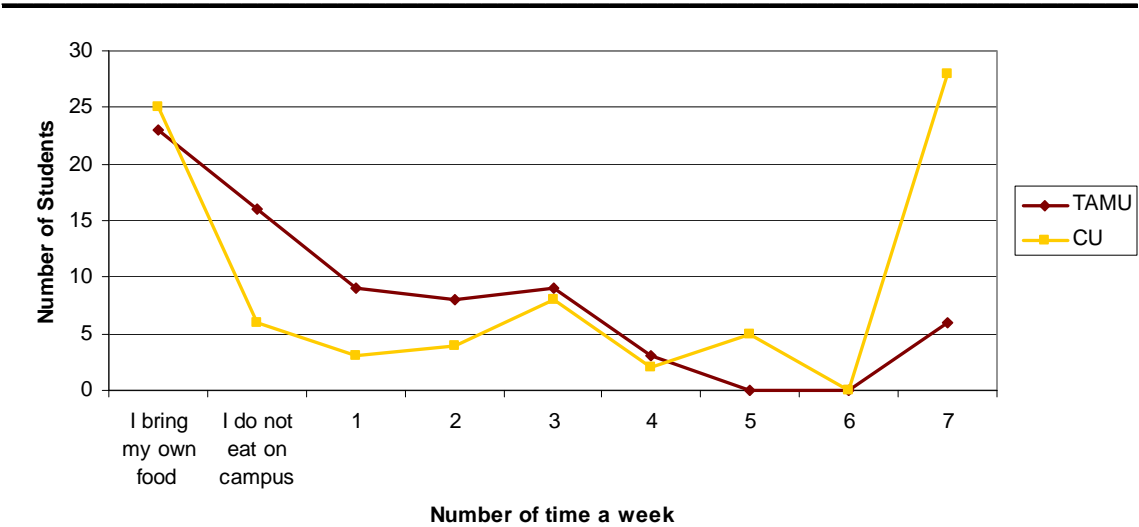
#### Food and dining services

Food and dining services have a unique opportunity to effect students every day. Often they are the only food services available on campus, which means students are very limited in what they eat. Most students at both schools eat on campus multiple times during the week or bring their own food to campus. At CU and TAMU, students rank eating local or organic foods on campus as somewhat convenient to somewhat inconvenient. Figure 6 shows that awareness of current practices in Food and Dining Services is lower than it is of the other two categories in this study, and Figure 7 shows a relatively low natural incentive for most of the food and dining services practices. The combination of low awareness, neutral convenience and low ethics could be the reason that students at both campuses rarely eat local or organic foods on campus. The majority of students on both campuses eat local or organic foods less than 2 days a week, if at all.

However, when asked about what practices they would participate in on Figure 7, many students at both schools advocated locally grown foods. Figure 16 through Figure 18 show the remaining results of food and dining services.

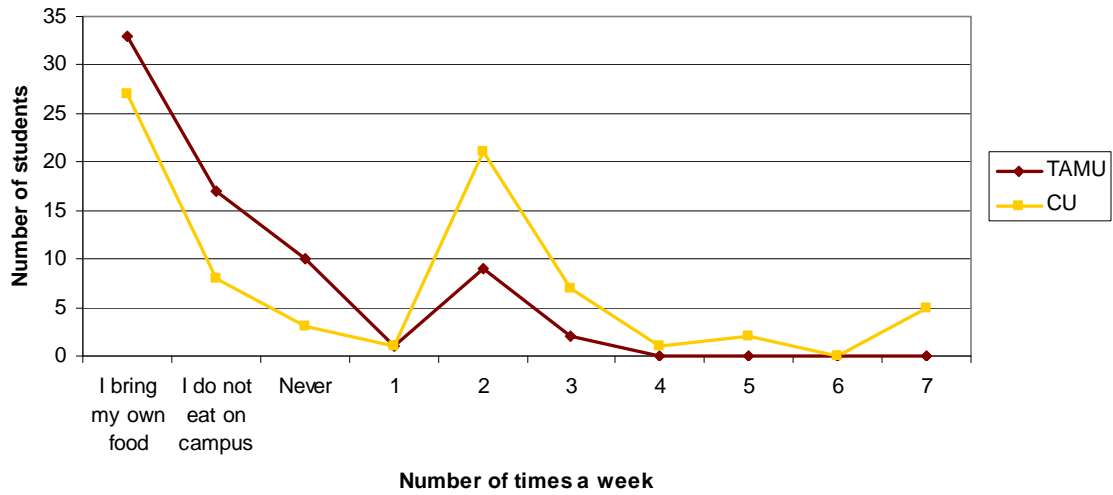


**Figure 16: How convenient it is to eat local or organic foods on campus**



**Figure 17: Number of time a week you eat on campus**





**Figure 18: Number of times a week you eat local or organic food while on campus**

## CHAPTER IV

### SUMMARY AND CONCLUSIONS

#### **Conclusions and recommendations for TAMU**

As discussed in Chapter III, convenience and awareness are the most influential factors in encouraging environmental responsibility on a college campus. Incentive and ethics are less important and may be considered cultural factors. If it is convenient enough and the students are aware of the sustainable practices, they are much more likely to take part in them. Based on these results, recommendations for increasing environmental responsibility at TAMU have been developed.

#### *Recycling*

To increase the usage of recycling on campus it needs to become more convenient to use, more accessible, and have more publicity and promotion. One way to achieve this is to place recycling bins with every trash can. This would give the option to recycle each time students throw trash away. The increase in recycling bins would also help to make students more aware of their presence.

#### *Transportation*

Students consider bus routes on campus at TAMU to be convenient and accessible. These routes should be maintained. Improvements on campus lie in the area of cycling. Many students choose to bike or walk on campus. Creating designated bike paths may

help both pedestrians and cyclists to feel more comfortable with cycling on campus. Students view off campus bus routes as inconvenient and inaccessible. Potential improvements in the off campus bus system are more covered bus stops and improved walking conditions for pedestrians. By making these improvements students may be more likely to use the bus system to travel to campus.

### *Food and dining services*

Awareness is the major issue in food and dining services. Foods on campus are not clearly marked as local or organic, and they are not offered at all locations. There is not a high demand on campus for organic foods, but locally produced foods are high in demand. By providing these foods and launching a marketing campaign promoting the consumption of local foods, students may take part in this sustainable practice. Trayless cafeterias and reusable dinnerware on campus may also raise awareness of current levels of water and food waste.

### **Limitations**

The limitations in this survey lie in the area of reliability. In his study on environmental attitudes and actions, Bickman questioned people on their outlook on littering and then observed their behaviors when presented with an opportunity to pick up litter. He concluded that there was a large gap between attitudes and behaviors (Bickman, 1972). Because my research consists of student surveys and not observed behaviors, I fall under this conclusion.

Another reliability issue is the inaccuracy and inflation of self-reported behaviors. A study on the inaccuracies in self-reports was conducted in the 1980s. Researchers in this study conducted surveys on energy use and compared them with actual utility bills. The results attributed inaccuracies to two reasons: 1) the design of the survey, and 2) the desire of participants to give a socially desired response to keep up with the perceived social norm. In the case of my research, the notion of sustainability is widely known. Sustainable behavior is desirable in today's society, but unfortunately, it is not always common. Reporting behaviors that society desires instead of the reality of personal actions is a common problem among researchers (Warriner, McDougall, & Claxton, 1984). To obtain accurate self-reports, two things must be accomplished. The respondent must be able to answer correctly, meaning the survey must be well designed and the appropriate answer is available. Second, the respondent must be willing to answer correctly and not give in to the social pressure. Nonetheless, this study concluded that there was not a good reason for the respondents to "systematically distort their response". These results are also relevant for daily activities, which applies to my research on daily sustainable behavior (Warriner, McDougall, & Claxton, 1984).

Sample size also limits my research. While the organizations offer a controlled and reliable audience, they are a very limited sample of the general student population. They focus on specific interest and may be more or less likely to perform a behavior based on

this affiliation. However, this study is still valid because students in organizations are still students at TAMU with environmental attitudes and behaviors.

### **Summary**

This study shows that our environment has a major effect on our behavior. Expansion on this study lies in design solutions. Further research on what physical distance is convenient for students to recycle, research on the current physical conditions of pedestrian routes to off campus bus stops, and how to implement local foods and trayless cafeterias are all potential design solutions.

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## CONTACT INFORMATION

Name: Grace Anne Koy

Professional Address: c/o Dr. Rodney Hill  
Texas A&M University  
3137 TAMU  
College Station, TX 77843

Email Address: [gakoy123@gmail.com](mailto:gakoy123@gmail.com)

Education: B.E.D., Environmental Design, Texas A&M University,  
May 2010  
Magna Cum Laude  
Undergraduate Research Scholar