More Money, Fewer Problems: Making the Switch to Reusable Food and Beverage Containers on College Campuses

Introduction

In the morning of a busy day it is too easy as a college student to grab a to-go cup from the dining hall and fill it up with a caffeinated beverage to take to class, without a thought to the cost. Disposable food packaging materials are over-used by college students. These disposable materials are harmful to the environment because waste is not properly disposed of and the mass creation of waste possess an ecological threat around the world. One-time-use food packaging is also costly to college students and schools. Purchasing these materials each day adds up for college students on a budget, and the regular disposable of these materials creates more waste the school will have to pay to have removed.

 Disposable food and beverage materials are used every day all around the world. These materials include to-go boxes, paper coffee cups lined with plastic, and drinking straws. On average the American individual produces approximately 4.40 pounds of trash a day (U.S, EPA, 2016). This is a large amount of waste which accumulates day-to-day between millions of people and could be reduced with the use of reusable material to keep disposable ones from accumulating.

The use of reusable food and beverage containers by college students would be beneficial to students, schools, and the environment. The use of these materials would reduce costs for students, because they would not purchase as many disposable materials daily. This will result in less waste created for the school to dispose of, reducing waste removal costs. Less waste being removed from school campuses means less waste entering landfills and the environment.

Literature Review

 People produce mass amounts of trash all over the world, and college students are no exception. College students around the world produce mass amounts of trash each year. A large portion of this garbage comes from the use of disposable materials, including one-time-use food and beverage containers. The use of these materials is costly to students, the schools, and the environment.

College students produce mass amounts of garbage each year

 Each year college students drink a lot of coffee to help keep them awake and alert. Many students purchase coffee, some purchase it daily, from vendors or the dining services locations on their school’s campus. The result is many disposable paper coffee cups entering the trash at the school, resulting in mass amounts of waste when combined with other materials disposed of. In a waste audit at the University of Manitoba it was found that students from two campuses discarded approximately 1,191,000 disposable coffee cups during the academic year (University of Manitoba, 2018). The report stated that many of the cups had been improperly recycled, which resulted in the other recyclable materials exposed to the cups being sent to the landfill (University of Manitoba, 2018). Students are aware that they use paper cups regularly but are not always aware of how much waste they are creating by using paper cups often. At Williams College a survey found that 93% of student respondents reported using paper cups with over a third of respondents reporting using five to ten cups weekly (Ladd-Luthringshauser, 2013). Half of the respondents in this survey responded that they use one to five paper cups on a weekly basis. Paper cups are a prominent offender on college campuses, but they are not the only problematic disposable materials.

 Disposable plastic food and beverage containers make up a large portion of trash. These range from red cups used at parties to take out containers which students use to bring dining hall meals back to their dormitory rooms. Each year around the world 500 billion plastic cups are used and disposed of (Earth Day Network). This plastic enters landfills, but sometimes cups may be littered, and many enter the ocean. Cups are not the only plastic entering the oceans, around 269,000 US tons of plastic waste has entered water systems because of takeout orders (Earth Day Network). Take out containers for food and beverages cause a lot of waste.

 Americans produce mass amounts of waste each year. In recent events there has been so much recycling produced by Americans that China has stopped accepting shipments of plastic recyclables for processing. A report from the U.S. Environmental Agency found that 254 million tons of trash in the year 2013 (U.S. EPA, 2016). This means on average American individuals generate 4.40 pounds of trash per person per day (U.S. EPA, 2016). This amount of trash becomes a problem when there is no more space to accept it in landfills, a rising problem in the U.S. Currently there are government attempts to reduce this problem. The State of Connecticut Department of Energy and Environmental Protection recommends several methods for reducing waste, including replacing disposable cups with ceramic mugs, and buying in bulk rather than purchasing individual packaged items. This is suggested to reduce costs to the consumer thus saving money, as well as conserving resources, saving landfill space, and reducing pollution. These methods also keep waste from entering land and ocean ecosystems, which reduces the changes of injuring animals living in these ecosystems. The mass amount of waste produced around the world is a problem economically and is a threat to the environment.

The use of disposable materials is costly to students, the schools, and the environment

 Waste is costly for both to the individual and schools which are responsible for removing waste created by students and staff on campus. College students on a budget spend large amounts of money on products with disposable materials, and schools pay thousands to remove mass amount of waste each year. Not only is there a monetary cost but there is a cost to the environment, especially ocean and land ecosystems affected by dumping and landfills.

Sometimes waste comes as part of the product a consumer purchases, such as a paper coffee cup used for a drink at Starbucks or a bottle of soda, making it difficult to gage how much money is spent on disposable products. The average American will likely spend around $588.00 on 168 bottles of water annually (Wake Forest University, 2014). For college students on a budget even buying bottled water can become a large sum of money, and this does not account for money spent on other disposable materials used regularly such as soda bottles, to-go containers, and single-use packaging.

Waste removal is costly for schools as well, with thousands of students, staff, and visitors producing mass amounts of trash each day. At the University of Idaho, a waste characterization report found that the school generates around 1,500 tons of waste each year, and the cost to remove it is more than $350,000 (Nagawiecki, 2009). Large amounts of money from student tuition and other income go toward waste removal on campus. Waste removal, both recycling and landfilling, is not cheap. In the year 2014 the cost to recycle one ton of material was around $359.21, and the cost to landfill one ton of waste was around $717.11 (Lane Community College, 2014). Considering the report from the University of Idaho, universities generate many tons of waste per year. As the waste builds through the year so does the cost to the school to remove it from campus, sending it to landfills where it may harm local ecosystems and water sources.

The highest cost of waste is to the environment, both in creating and disposing of waste. The environment is used to create disposable materials, which in turns harms the environment by removing it. Paper cups are a threat to the environment when they are disposed, but also when they are created. Over 350,000 trees are bulldozed from forest each year just to provide paper cups to the United Kingdom (McCarthy, 2016). With added paraphernalia which comes with coffee such as sleeves and stirring sticks the number of trees would rise to over half a million trees deforested just for the UK (McCarthy, 2016). Deforestation removes ecosystems which animals call home, contributing to animal extinction, and removes trees which produce oxygen needed to breath. In combination with the carbon footprint produced by coffee cup production plants, there is a significant environmental impact from the coffee cup industry (Gabbatiss, 2016). While natural resources are removed from environments contributing to dangerous conditions in the environment, foreign man-made martials are entering environments and are equally dangerous.

Some plastics are littered, and others are properly disposed of but are very weightless and swept into environments from the wind. Plastics never completely breakdown. Over time, there is gradual breakdown into microplastics, which are sometimes eaten by animals when they are mistaken for food or in the food that animals eat (Gabbatiss, 2018). The microplastics may be potentially toxic to the animals, which includes humans who eat animals which may have ingested these microplastics (Gabbatiss, 2018). Along with toxins the buildup of plastic in the animal’s systems may cause deaths. Large numbers of animals die off from ingesting foreign materials which are unnatural to their environment, which is devastating to the ecosystems they live within. A study found that debris in the ocean is affecting human food as well, because the food humans eat is contaminated from ingesting waste made by people (Clean Water Action, 2018). In a study by Algalita researchers on a Pacific Gyre voyage in 2008 it was found that of 672 fish caught during the voyage, 35% had eaten plastic pieces which remained in their bodies (Moore, 2006).

Many are not aware of the costs of their waste producing patterns and may be more inclined to change their habits if they are aware of the costs. College students on a budget may be more inclined to look for alternatives to disposable materials if they are aware of how much money goes toward those disposable materials yearly. Schools may also be looking for a way to save money for other school programs. Many schools have green initiatives on campus and may be willing to boost green initiative efforts if saving money while aiding becomes a goal.

Methodology

*Messaging Strategy*

It is no secret that college students are usually looking for ways to save a few dollars here and there. Most people have been over exposed to “green advertising”, seeing too many images of polar bears floating on pieces of ice to be persuaded every time (Urbach, 2008). Many people are also aware that many companies greenwash themselves, meaning they spend more effort claiming to be green than they really are (Urbach, 2008). These messaging strategies to tug on the heart strings are no longer effective and are to be avoided as main persuasion strategies.

Generally, college-age adults trust each other for making decisions and base their actions of the actions of their peers. Based on this, campaigns should be relatable and implement more human connection to engage with the target audience of college students (DDL Advertising, 2018). Therefore, the message of this campaign coming from a peer will likely be more effective than coming from an older adult. A study which looked at the interaction between coworkers found that more people behaved in the desired manner when receiving informational feedback in combination with coworkers providing a model of the desired behavior (Fugas, et al, 2011). A study which applied social norms to encouraging college age student to engage in more physical activity to promote student health found that college students tend to focus on messages from other students and individuals who have been deemed as important (Marmo, 2013). For this campaign the message deliverer needs to be a peer but also have some credibility to provide the human connection.

After hearing the message, and seeing their peers engaging in the campaign, the door is opened for social norms and social cognitive theory to come into play. Most people learn behaviors through consciously or unconsciously observing the behaviors of others (Bandura, 1989). This is the social cognitive theory, and this theory applies to this campaign because students will observe their peers engaging in behavior to reduce the amount of waste they produce, and actively using reusable materials in the dining hall. The digital advertisement will show a peer at the university engaging in waste-reducing behaviors and saving money while doing so, which will encourage others to learn from the observed behavior. Digital media has been found to be an effective peer when encouraging college age students to participate in a behavior (Harris, 2017). This study looked at the behavior of students engaging with digital media depicting people cooking, and the study found students were more encouraged to cook and reported using digital media as a tool for learning by watching YouTube or cable television (Harris, 2017). Observing the peer in the video engage in the behavior may also increase the credibility of the message.

Once more students engage with the content and begin to consider their behaviors when it comes to using disposable materials social norms will come into play. In a study by Rimal and Real, it was found that the more an individual perceived that people are participating in a specific behavior, there is a greater likelihood that the individual will also engage in that behavior (Rimal and Real, 2003). Social norms are behaviors that are observed by many people and therefore perceived as normal behaviors which many are engaging in. Social norms may be most effective when the perceived norms align with the injunctive norm, or what people typically approve or disapprove of (Cialdini, 2003). Approval is a large component when it comes to accepting and engaging in normative behavior, and generally people considering engaging in normative behavior are considering the opinions of family, friends, and those they consider to be close to them (Neighbors et al, 2015). This campaign is generally aligned with a behavior people approve of or feel neutral about, which is encouraging the use of non-disposable containers. In the case of this campaign, the friends and peers will be the important others to be watched for approval of behaviors.

*Hypothesis*

Given the above review of the research evidence, the hypothesis is that if students who attend the dining hall are exposed to messaging where peers encourage the use of reusable containers for dining hall for food and drink products then there will be an increase in students using reusable containers because the students will participate in the Social Cognitive Theory and Social Norms.

Method

The target audience of this cross-sectional campaign is college students. College students are the largest population on college campuses, so they are the target rather than smaller groups such as faculty or staff. College students are learning constantly at school, and this campaign provides a teaching opportunity in saving money and environmental protection for life beyond college. The goal of using college students is to educate them on an angle they may not yet have seen when it comes to reducing waste and instill long-term thinking about their purchasing patterns and use of disposable materials. This age group has the opportunity to change behaviors for life at a relatively young age, and pass education on to any future offspring.

Recruitment for this campaign will happen by tabling outside of dining facilities with permissions of dining facilities. These tables will be accompanied by team members of the campaign, providing a human connection and peer as a face of the campaign for students entering the dining facility. The tables will have a sign-up sheet or computer, and students will be politely asked to participate with an explanation from the campaign team of the campaign. Emails will be collected to send out the survey and additional information about the campaign for students to pay attention to during the campaign duration. This campaign will not send too many emails so as not to have students become annoyed or ignore emails. To implement this campaign, permissions will need to be attained from the Institutional Review Boards of both Washington State University and University of Idaho, as well as the dining services department of both universities to conduct this campaign.

The instrument used in this campaign will be surveys at the beginning and end of the campaign. The survey will collect qualitative information from students participating in the campaign. This survey will be made in Google Survey, and sent to participants school emails. There will also be collection of quantitative data, collected in an excel spread sheet, to monitor the number of disposable containers used in the dining halls. This information will be recorded be either dining hall cashiers or a stationed researcher.

The campaign will be implemented on one dining facility on each of the Washington State University and University of Idaho campuses. This is to target students who are residents of on-campus housing and regularly use these dining facilities. The campaign will run for a total of eight weeks. There will be a small development team in charge of creating the advertisements which will be displayed as digital video ads and posters. This team will be in charge of coordinating with the dining centers, and likely the dining center staff will take over the responsibility of displaying the advertisements in a way which works best for functionality. The team leader of the campaign, likely Annabelle Hutson, will attend the selected dining facilities weekly to ensure posters are still intact and digital advertisements are both running and swapped after the first four weeks of the campaign. Cashiers at the dining hall will also be trained to monitor hoe many disposable and reusable containers leave the facility during their shift.

One week after the campaign has ended, the dining facilities will be closely monitored by the team leader in order to gain quantitative data on the number of disposable and reusable containers being used in the dining centers. The participants of the first survey will be emailed a second survey to complete to gather the qualitative data on the campaign’s effectiveness. The dining centers will be measured for quantitative data again five weeks after the end of the campaign, in order to see if the campaign produced lasting results and long-term change within students’ behavior.

Conclusion

There is a current trash crisis, with overwhelming amounts of garbage being produced daily around the world. One-time-use food and beverage containers are a large problem and add to the amount of trash an individual creates and how much garbage is created as a whole around the world. College students contribute to trash problems with disposable coffee cups and food containers, which is costly to both students who purchase these materials and the school which has to pay for the waste removal. The use of reusable containers in dining centers will reduce the amount of waste produced per student, reducing student living costs as well as reducing the cost to the school to remove waste from campus. Both of these benefit the student and the university while benefitting the environment as well. Students generally are already budgeting, and saving money is a great incentive to achieve a goal which could reduce plastic entering the environment as a threat to animals and reducing deforestation because less people will use paper cups. College students will be helping to save the environment, while also saving money for themselves.

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