

RECOVER



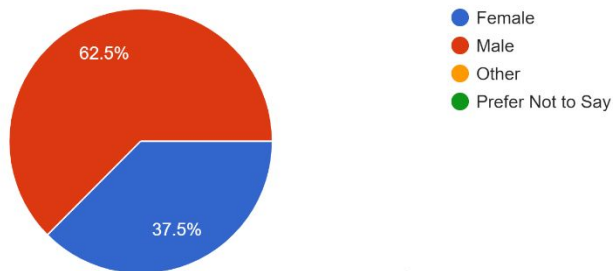
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Survey Results

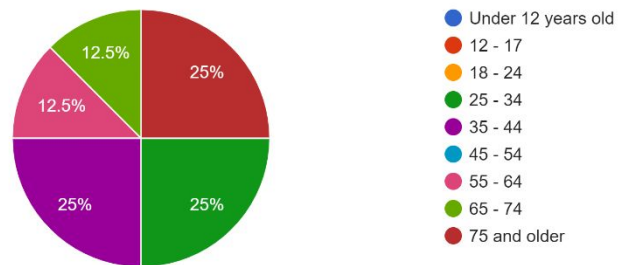
1. What's your gender?

8 responses



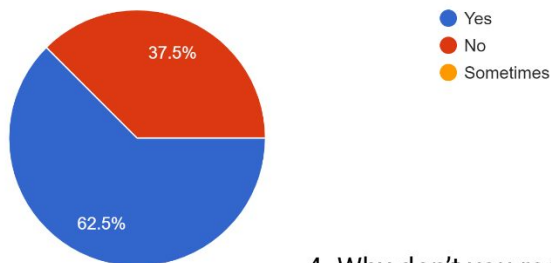
2. What is your age?

8 responses



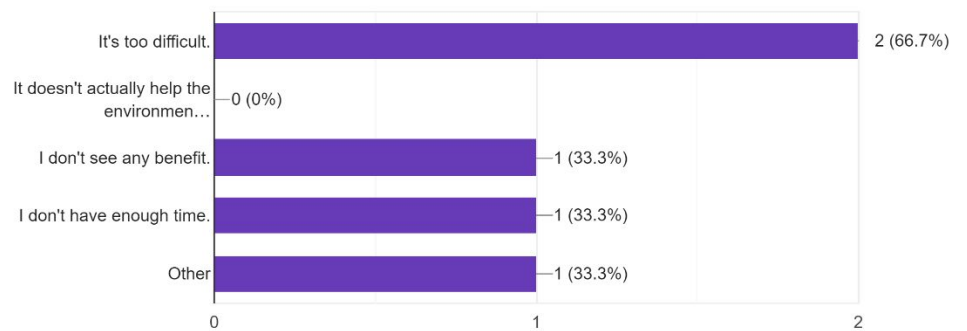
3. Do you recycle? If yes please skip to question 5

8 responses



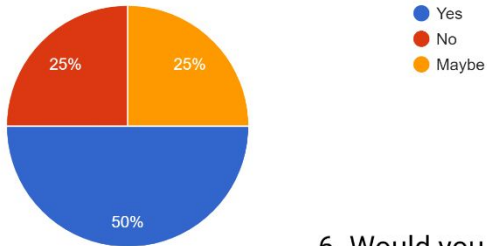
4. Why don't you recycle? Please select all that apply

3 responses



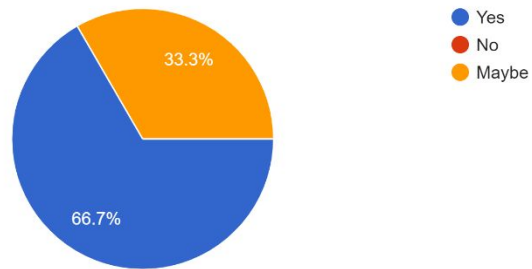
5. Would you use a recycling app to help you recycle? If no thank you for your time with this survey.

8 responses



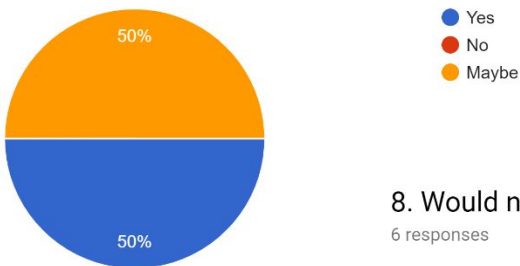
6. Would you use location based information to help you recycle?

6 responses



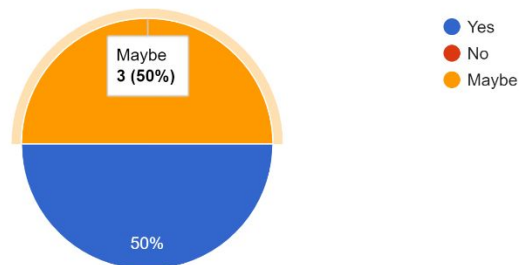
7. Would rewards help incentivize you to recycle?

6 responses



8. Would national and local leader board competition help you to recycle?

6 responses



9. What would you like to see in a recycling app?

5 responses

Information on what and how I can recycle in my community. Also, a way to keep track of my recycling.

Something that makes things easier.

I don't know.

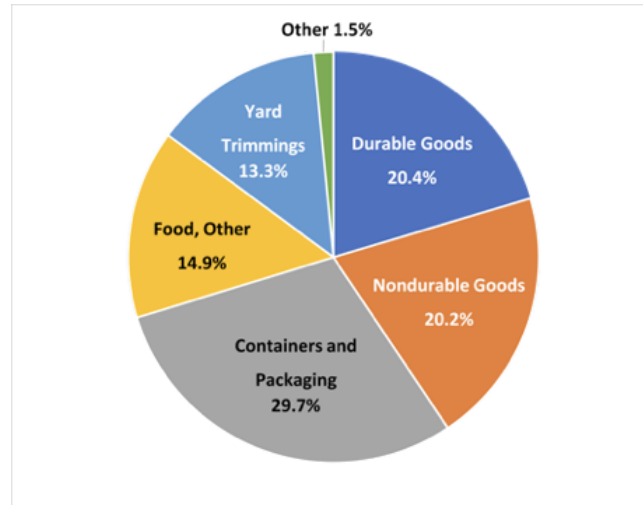
Something easy to use that I do not need to have my grand kids help me to use.

I want to be able to quickly find information and easily count my recycling.

Overall View of Project

Climate change has become a major issue due to the catastrophic impact it could have on the planet, which means humanity has to find a way to stop it before the effects become irreversible. Some of the consequences of climate change include rising sea levels, melting glaciers, increased spread of disease, loss of biodiversity and changing crop yields (*Waste and Climate Change*). One of the ways to help reduce the effects of climate change is to reduce how much waste is created (*Trash in America*, 2018). Reducing how much waste is made will reduce the amount of natural resources that will have to be farmed to make more products. By doing this it will help cut down on CO₂ and other greenhouse gasses that are harming the environment (*Trash in America*, 2018).

Garbage composition by product (*Trash in America*, 2018).



The solution that we have purposed is a mobile game that will help users turn recycling into a friendly competition with those around them. The idea is to have a main page, that is like the Instagram or Facebook feed's, with users posting about what, when, where, and how much they recycled. The social part will hopefully encourage people to do more, and perhaps even form events to go clean up a location. The biggest component of this app will of course be the recycling tracker. To ensure there is no cheating the user will need to verify their recycling by taking a picture. There will be a leader board that keeps track of those who are in the lead and those in the top three will receive special prizes. The last major part of the app is going to be the information section, here users will be able to learn about recycling, find places to go clean up (lakes, beaches, etc.), and statistics on how the apps users have impacted waste management. In the future, we hope to have more to do on the app like, for example, mini games to keep people entertained even when not recycling

Recycling is something that does take time and thought to complete. People have to be aware of whether or not something is able to be recycled, what bin it goes in, etc. Therefore, it makes sense why not all people recycle. By creating a game out of recycling, we hope that people will find the incentive they need to be able to start recycling. Choosing to do a mobile game, rather than a traditional one, will make it more accessible to the general population, due to the fact that most people today have a smart phone that is with them at all times (THIRD). Having the statistics section of the app will be a way for people to see their impact, which will hopefully keep them motivated to keep up with their new recycling habits. Overall, the goal of our mobile application is to get people motivated and stay motivated in recycling, so that we can hopefully start to make an impact against climate change.

Works Cited

Trash in America: Frontier Group. (2018, February 12). Retrieved from <https://frontiergroup.org/reports/fg/trash-america>

Waste and Climate Change. (n.d.). Retrieved from <http://www.sustainabilityroadmap.org/driverswastechange.shtml#.XXmF95NKgWo>



Target User Group

Target users would include those who want to recycle. These users could be people who already recycle and want to play the game to compete with friends or users could be those who are looking to start recycling and need motivation. This game provides an incentive to recycle, which could help users form the habit. This is a large target group because it includes people of all ages.

Some people either need to be incentivized to recycle or want to recycle but are not sure how to get started. This application tends to both of those needs. There are educational tools that point to where someone can recycle near them and gives insights into what projects the user could work on such as joining a local volunteer group. The user can get ideas of what kinds of activities to do to get them started on their journey to helping the earth. This application also uses a flower graphic to allow competition and motivate users to actually utilize the application.



As a team, we have collectively agreed that our target users will be mobile users, as cell phones are more widely accessible to a larger range of people and are much more portable than any other application friendly device. That being said, an enhancement to include desktop users is definitely in the realm of possibilities.

The purpose of the app is to provide an interactive experience to all users to encourage them to get involved in their local community to support a more environmentally friendly earth. The pollution and chemicals physically impact their health and safety as well as the future generations to come.

In <https://www.frontiersin.org/articles/10.3389/fenvs.2014.00069/full>, scientist Takahasi confirmed how air pollution is contributing to so many respiratory issues, and that is only the beginning of it. There are many more long term impacts, some of which have not even been fully explored today, that will affect all life on this planet, at some point in the near future.

Users:

Users of the recycling application will be strictly those on smart mobile devices. The application will need to be compatible with a variety of brands and display sizes, meaning the interface will need to be adaptable. Since the application can be utilized anywhere, and is not designed for a given environment, the interface can include both audio and visual elements -- which can be manipulated by the user through app settings.

Geographic area and impact:

In order to provide a more personalized user experience, the application will be location based. By creating a radius of a location for each user, the application will provide: nearby recycling centers, volunteer opportunities, and rewards backed by local businesses. Making the application's components more relevant to the user via location based content, the user will potentially have greater interest and incentive to continue using the software.

Local user data will be combined to track a community's progress. This combined data will allow individual users to compare themselves to their community. Community data will also be used to generate leaderboards, ranked by top recyclers in the area. In order to continue interest in the application, the top 3 ranked leaders will be awarded prizes on a monthly basis -- with 2nd and 3rd place receiving our company's branded items, like tshirts and water bottles, and with 1st place receiving items to local businesses, like gift cards and merchandise. In the case users are not interested in the advertised monthly prizes, there will be a variety of prizes to select from, keeping users from lacking in participation for the month.

Users' recycling activities can be posted to the application, and displayed in a newsfeed. Users will be able to view progress that is being made in their community, and establish connections with other nearby users -- allowing recycling outreach and cleanup projects to be organized.

Age range and impact:

The age range of users could be anyone with access to a smartphone. According to the Pew Research Center, over 90% of individuals between the ages of 18 and 49, 79% of individuals between the ages of 50-64, and 53% of individuals aged 65+ own smartphones ([source](#)). With this in mind, the application will need to be accessible and easy to use for all users. In order to meet this standard, the application will need to include both visual icons and text descriptions, minimal buttons and options for the user to interact with, intuitive design, and large text and color choices that convey a message. Essentially, the application will need to push the user in a direction to complete a desired function, requiring the user to think about how to interact with the application as little as possible.

Additionally, it is important that the content of the application is geared towards all ages. The application should not use vocabulary that is only understood by a given age range and should not require interactions that are only intuitive for specific users. The application must provide an adaptable environment, that is both understood and liked by all users.

Implication of economic standing:

Existing applications, such as Recyclebank ([Source](#)) , provide a more user centered system. Recyclebank allows users to watch videos on recycling habits, in order to earn points towards rewards funded by local businesses. In certain areas, Recyclebank has paired with recycling and trash companies — allowing users to earn points via recycling. However, this option is not yet available in Athens. The company has a Facebook following of 296,920, and posts frequently on their page. Out of the past 10 posts, the highest amount of people that liked one post was 18. Given their follower count, engagement is low.

While applications like Recyclebank serve a similar purpose, existing applications are missing the sense of community that our design would provide. By actively engaging others to compete and collaborate with themselves and others, greater interest and continued use of the application is promising ([Source](#)). Sustaining high levels of interaction with users will ensure companies will continue working with the application and supplying benefits to users.

Scenarios

Scenario 1: Imari wants to add to his recycling points in the app. Imari opens the Recover app. He selects the “Add Recycling Objects” from the main page. The app instructs him to take a picture from within the app of the recyclables he is recycling. Imari takes the picture and clicks submit. The picture gets uploaded to the Recover database. The Recover app calculates how many points to add to Imari’s progress. The app adds points to both Imari’s lifetime progress and his monthly progress. Then the app displays both progresses to Imari.

Scenario 2: Lily wants to find out where to take a large amount of recycling she has built up. Lily loads all the recyclables into her car. She opens the app and selects “Locate Recycling Facility” from the main menu. The app determines her location based off her GPS coordinates. The app displays the closest facility on the map and offers navigation to the facility. Lily decides to accept the navigation and gets in her car. Using google directions the app guides Lily to the facility. Lily arrives at the facility and gets out of her car. She pulls all the recyclables out of her car. Lily selects “Add Recycling Objects” in the app from the main menu. The app instructs her to take a picture from within the app of the recyclables she is recycling. Lily takes the picture and clicks submit. The picture gets uploaded to the Recover database. The Recover app calculates how many points to add to Lily’s progress. The app adds the points to both Lily’s lifetime progress and her monthly progress. Then the app displays both progresses to Lily. Lily then proceeds to take the recyclables into the facility for recycling.

Scenario 3: Adri decides he wants to help out with his local community. He opens the Recover app and selects the “Find Places to Help” from the main menu. The app finds a few local options based on Adri’s GPS location. Adri selects a park from the list of options. He gets on his bicycle and heads to the park. Upon arrival he finds trash scattered around the park. He starts picking up the trash and separating the trash from the recyclables. He places the trash in the proper receptacles. Adri decides to add the recyclables to his progress. He selects “Add Recycling Objects” from the app main menu. The app instructs him to take a picture from within the app of the recyclables he is recycling. Adri takes the picture and clicks submit. The picture gets uploaded to the Recover database. The Recover app calculates how many points to add to Adri’s progress. The app adds the points to both Adri’s lifetime progress and his monthly progress. Then the app displays both progresses to Adri. Adri then proceeds to place the recyclables in the proper recycling containers.

Scenario 4: Shan decides she wants to start recycling. She opens the Recover app and selects “Learn how to Recycle in my Area” from the main menu. The app shows Shan what is recyclable in her area and local facilities. Shan selects more information. The app displays the information of the local facilities and if they offer curbside pickup. Shan selects one of the facilities and calls them. She verifies what is recyclable and sets up service with the company. Shan then proceeds to start recycling.

Existing Systems

An examination of existing solutions: There are multiple apps out there that try to educate users on how or what to recycle. One application, Recyclebank, has a rewards system to try to encourage users to recycle in addition to being able to look up location-based recycling information. However, its rewards are not enticing and not reliable as they rely on external companies. While this is a good idea it has flaws by relying on external companies to provide the rewards. Many will only do so for a short time and if no benefit is seen by the company providing the reward (discounts, free samples, etc.) they will discontinue. A few applications are games about recycling. Some are for educational purposes others are just basic games and while providing entertainment and some knowledge they lack location-based information for users to actually be able to recycle and no incentives for users to recycle. While other applications only provide information to users about their local facilities (not location-based, they are location specific). This is good information to provide, but there is no incentive for users to recycle and no education or information on what can be recycled. Based on search results no application was found that was in line with what we are proposing.

Summary and Evaluation of what we learned

While the target users are those who want to recycle many people need incentives. Competition and collaboration can provide that incentive in the form of a game. Our users will be of all age ranges and thus we need to design a game that will be entertaining for the masses. The education and information must be easily understandable by those young and old. Both text and visuals could be very beneficial in the design. The app will need to be maintained well, to make sure the incentives remain up to date and the education and information provided remains current. While working to gather information on what users want in an app for recycling trying to get direct answers was difficult. Many potential users could not provide solid answers and getting them to take a survey proved tougher than expected.