

ASU's Zero Waste Initiative
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March 13, 2022

Background

The Zero Waste Program at Arizona State University is an initiative to reduce waste from going to landfills by many different means, but mainly focusing on recycling and composting. Started at Arizona State University on April 1, 2014, the initiative was created to achieve zero solid waste by 2015. With a new goal of reaching zero waste at ASU by 2025, the program has evolved over the years with the help of local city support and an increase in interest among students.

The program focuses on diversion of waste by advocating for reusable and compostable materials, as well as taking the waste that is produced and disposing of it in more sustainable ways. Not only does the program focus on the waste that is generated, but they also specifically target ways that less waste could be generated initially. One way that the Zero Waste Initiative does this is through education around food consumption. For example, the team recommends only taking what you can eat, and being mindful of excess food that will just go to waste. Their website points out that dining halls that are “all you can eat” style typically have issues around consumption, and that this is a target area for improvement.

While there is an emphasis on making a more sustainable choice first, the ZeroWaste Program places most of their focus on diverting waste from landfills. Arizona State University states that almost all of the waste that is produced on campus can be diverted from the landfill to composting or recycling programs. They claim most of the waste produced is recyclable and about half of the waste is compostable. The program was designed and is managed by Kendon Jung, a sustainability staff at Arizona State University. With local help from the City of Phoenix Composting Facility, ASU works with the service to help manage the amount of trash and waste that is produced on campus.

This idea of Zero Waste at ASU began in November of 2013 when there was an announcement published stating that at football games there would be limited trash cans, influencing students to use either the recycling or composting bins for their waste. Also in 2013, and becoming official in April of 2014, ASU established a goal for the university to be zero waste by the year 2015. Seemingly, this goal was not met as the program has extended the goal to be for the year 2025.

Since its conception, the initiative has grown vastly and implemented many resources and programs to help students avoid waste. The Zero Waste team manages trash bins, compost bins, recycling blue bins, and special collection bins, including E-waste collection, soft plastics collection, and office item recycling and composting. Most of the trash, recycling, and composting bins on campus are labeled with one of the signs created by Zero Waste, and they have the Zero Waste logo and web address. These signs also include infographics about what goes in each bin, showing pictures and examples of the types of things that students could potentially throw into each bin. The program also has an interactive website that includes information on the Zero Waste program, as well as a waste directory that gives students the ability to track where their waste goes. This gives students the ability to see the impact that they have in their day-to-day lives, based on the choices they make to recycle or compost.

The Zero Waste organization also puts on different events throughout the year to help spread awareness of the program and educate students about the waste, advertised throughout the teams' social media and throughout campus. One of their largest impacts on campus is seen through the collaboration with ASU Athletics programs, as one of the earliest changes that was made on campus was through the reduction of trash-cans in the sports complexes on campus. The "think-before-you-throw" approach was adopted at all sporting events in an effort to educate more people about the influence that they have in their choice of waste management.

Rationale

We wanted to gain an understanding of the interaction that students have with waste on campus. As Sustainability students, it is something that we take very seriously and think about in different settings. We decided to study ASU students' perception of sustainability because it is a topic that not a lot of people know about, yet can provide information on the social dimension of this topic. This gives further insight of the true ideas of ZeroWaste, outside the basic knowledge and data from the program. Our research provides a deeper understanding of why the ZeroWaste program is seeing the data they are today. We make choices based on our understanding of the complexities within waste management, but we also recognize that this is not a common occurrence among most students. We gained insight via a survey and recognized possible skews in our data. We also conducted a personalized interview with the head of the program to dive deeper into this issue. It is interesting to see the difference of understanding and many perspectives that are shared, or not, among the student body at Arizona State University.

Research Question

What are the key sustainability features of the ASU Zero Waste Program, and what are the perceptions of ASU students on the program's achievements as well as constraints/barriers?

Methodology Used

Interview

We started off our interview process by creating multiple questions to guide our interview. These questions included topics such as the goals of the initiative, the setbacks that the program has seen, as well as the student response that has been observed so far. The ZeroWaste initiative is very active on multiple social media platforms including Instagram, Facebook, Twitter, and many more. We decided that reaching out via Instagram would be the quickest and most efficient way to get in contact with the team, and get a response. After several days of communication with the Zero Waste Initiative, we were given the information of Kendon Jung, head of the ZeroWaste initiative at Arizona State University. We sent Kendon the questions through email and received his response. He was able to answer most of the questions, but asked for further clarification on two of the questions. We decided as a team that with the limited time we had left and the amount of time it took to coordinate the prior responses, we would be able to efficiently use the answers that were previously provided.

Survey

To gain the best understanding of the population that we surveyed, we included basic demographic questions to be answered by the people who took our survey. We limited our survey results to people who were specifically Arizona State University students. The questions asked included age, gender (man, woman, nonbinary, and other), year of school at Arizona State University, and major.

When starting the survey, students are introduced to Juliana and Karli, and given our contact information, as well as given the contact information of our advisor, Milan Shrestha. The first question after filling out the demographic parts of the survey is a question asking if they know what the Zero Waste Initiative at Arizona State University is. If the student answered “No,” they would be taken to the end screen of the survey, thanking them for their time. If they were to answer “Yes,” they are taken to the next few questions.

In order to best quantify the data, we asked questions and gave students the ability to select how likely they were to do something (on a scale of 1-5), and how much they agreed with something (on a scale of 1-5). The options for answering on the scale ranged from 1- very unlikely, 2 - somewhat unlikely, 3 - neutral, 4 - somewhat likely, and 5 - very likely. This was the same model that we used for the second round of questions, but this time it was 1 - disagree, 2 - somewhat disagree, 3 - neutral, 4 - somewhat agree, 5 - agree.

When picking the questions, we wanted to reach an understanding of the knowledge that students had about the Zero Waste Initiative here at ASU. These questions were aimed to not only gauge students' understanding and feelings about the initiative, but to plant small questions that they would hopefully ask themselves later. The first questions are tailored to understand the behaviors of students, before asking about their opinions on the initiative. These sections included things such as, “How likely are you to use recycling bins on campus?”, and “How likely are you to make conscious decisions about packaging when making a purchase?” The next questions included more Zero Waste-related questions, including “How much do you agree that Zero Waste has increased your understanding of recycling?”, and “How much do you agree that you see the Zero Waste Initiative represented throughout campus?” Once this section was completed, respondents were thanked for their time, and the survey ended.

Interview Results

The first question that we asked was “What are the goals of the Zero Waste Program and how have they changed since the start of the program?”

In response, Jung stated, “the Zero Waste department guides the pursuit of ASU’s circular resource system goal.” The ASU circular system aims to utilize the circulatory system that nature uses, eliminating waste while still maintaining strong economic status. The main goals of implementing the circular system at ASU are to “Achieve 30% diversion by fiscal year 2025 and achieve 90% diversion by fiscal year 2025.”

Jung also encourages “...interested people to review our Annual Reports to explore changes over time.” The Annual Impact Report that Jung links in his response highlights many important aspects of the Zero Waste initiative, including the goals and missions of the programs. The report also highlights important data from the year 2021. From the report, during the 2021 fiscal year, Arizona State University had a 41.3% diversion rate, or 2,843 tons of waste created at ASU campuses were diverted from the landfill in 2021. Furthermore, the total amount of waste created at ASU decreased by 39% in 2021, a change from just over 8000 tons in 2020 to under 7000 tons in 2021. The report also details the program's goals moving forward. For the upcoming years, the Zero Waste initiative will focus on solutions such as “compost collection expansion into offices” and a “focus on behavior change.”

While the goals of the program are clearly stated, we wanted to know what a complete implementation of the program would look like in the future. Jung writes that in his understanding, there is not just one way that implementation of this program will present itself, due to the complexity of the situation. He states that “ASU is the size of a city, making our approach to zero waste quite unique. However, there is only so much that ASU can provide.” Jung argues that a lot of the responsibility of making this program a success actually lies on the individuals within the system, such as staff and students. He claims that “opportunity in our diversion and aversion goals comes down to the individual choices faculty, staff and students make every day. It is hard to say what that looks like for every individual.” While ASU can provide the resources for the community to want to make a change, it will never reach its goal if people refuse to participate.

Today, there are already many of these resources available to students. There are a plethora of composting and recycling bins available all throughout ASU campuses. We wanted to know what kind of push-backs was the ZeroWaste team facing when it comes to people participating. Jung responded that “there isn’t a push back per say as much as getting individuals to recycle and purchase differently.” This raises many questions as to why the program is not seeing higher numbers in participation and waste diverted from landfills. We used this idea as a base for some of our survey questions.

Before this program was implemented, there was a lack of knowledgeable students on the waste problem, as well as a lack of resources to address it. We asked Jung if he believed that there has been an increase in student participation in composting since implementing the composting bins and system. He responded that while there has been an increase in participation, most importantly there has been overall increased interest and advocacy for the program. He stated that “Initial metrics suggest that students like and engage with the program and we have been working to accelerate and increase adoption.”

More people have begun to want to participate, even when resources are not or were not available nearby. Jung exemplifies this as he explains that there “has been an increase in interest by students (especially in Vista del Sol, Barrett Complex, Taylor Place and USG) wanting to compost their food waste.” The interest demonstrated by students and other members of the community has led the initiative to develop new goals such as “piloting a public facing,

residential life food-waste collection program, with a focus on how to increase participation and retention.”

Along with this, we wanted to know how the program team decided to place the waste-diverting bins, such as compost or recycling. Overall, the program has three major classifications for the bins. As reported by Jung, the first is “exterior commingled collection, aka Dual Litters.” Followed by “interior commingled collection,” or what the team calls desk-side or community bins. The last classification is “specialty collection,” which includes Office Compost, Blue Bag, and E-waste. After the classification of the bins, the location “for bins are determined by where specific waste is generated.” For example, staff at ASU are more likely to produce food waste in break rooms where they are able to eat or make coffee, promoting the use of compost bins and blue bags in these locations. These different specifications are determined by the specific needs of the community, and placed as needed.

While the ZeroWaste program is not able to control how many people participate, or even if people participate, they can influence and educate the ASU community by using consistency and familiarity. When asked about the repetition of use among students, Jung states that the bins and program appeals to the psychology of people because “humans are creatures of comfort and consistency.” The ZeroWaste team bases a lot of their actions on this principle including standardizing the look and presentation of the collection bins, as well as branding and constant colorization. The initiative also uses “images more than text on our labels to remove a language barrier for our international population.” Lastly, the team “intentionally put recycling bins next to landfill bins – so not matter what ASU location you are on, so it is easy to recycle.” When people are exposed to consistent promotion of the same product they are more likely to adapt to it and learn about it.

The last question we wanted to address is what the team feels needs to change in order to become more successful. As the initiative focuses on expanding and reducing the footprint of waste created by ASU, one of their goals is making the program market more mobile friendly. Jung hopes that this will allow the initiative to “meet students where they are and solicit the program.” The program would not be where it is without its participants and essentially, the “success relies heavily on the individual to ensure they are separating contaminants out of their food-waste bins.” While the program is not where it would like to be quite yet, Jung assures that it will continue to grow and it is a “small action that has a HUGE impact.”

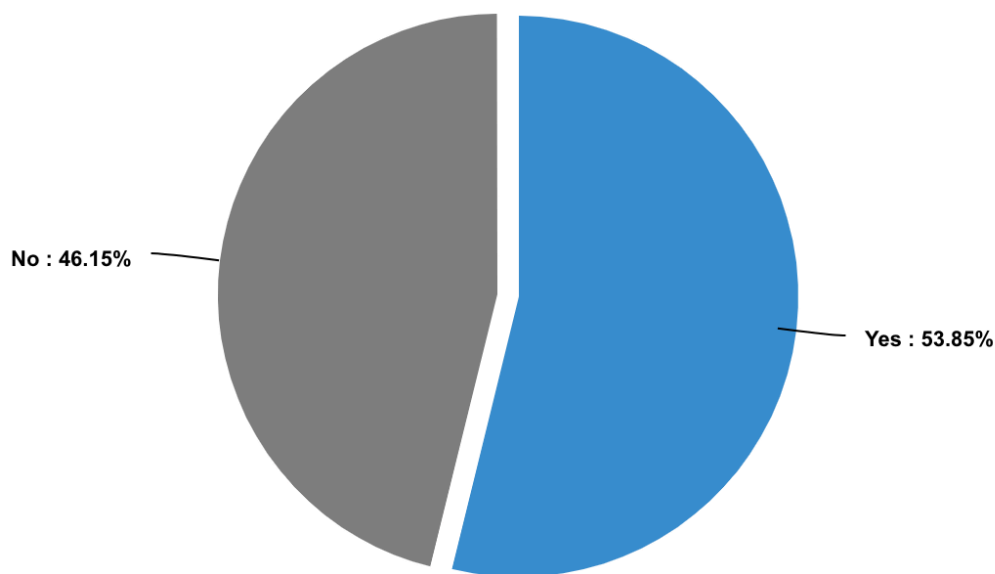
Survey Results

The survey that we conducted was structured to ask the students about their understanding of the Zero Waste Program at Arizona State University. Once opening the survey, they are met with a screen that describes what the survey is, what the data will be used for, as well as the information of Karli and Juliana, and our instructor, Milan Shrestha.

Once they have read this screen and begin the survey, they are asked “Do you know what the Zero Waste Initiative at ASU is?” The results for this question were almost fifty-fifty, with 47.37% of the respondents answering “No,” and 52.63% of the respondents answering “Yes.”

We had a total of 38 respondents to the survey, with 18 of them answering “No” and 20 answering “Yes.” If the respondents were to answer “No,” as 18 of them did, they are then taken to a closing page that thanks them for their time. If the respondents were to answer “Yes,” they are taken to a demographics page, where they answer questions about who they are, what they are studying, and their ages. If we were able to redo the survey, we would position these questions after the initial question around Zero Waste, as we were not able to collect data about the respondents that answered “No” (see fig. 1).

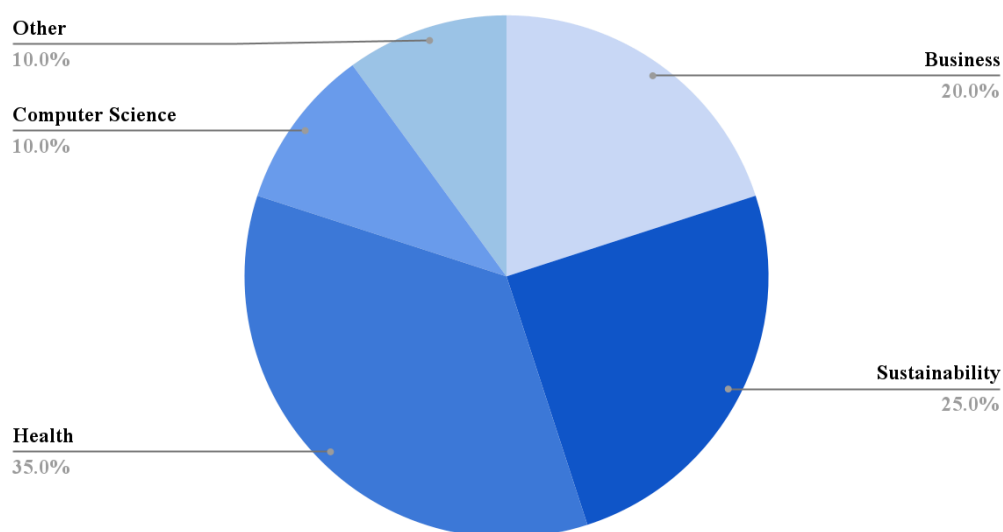
Fig. 1 Do you know what the Zero Waste Initiative at ASU is?



This first demographic question that respondents were asked was about what gender they identified as. They were able to select from “Woman,” “Man,” “Nonbinary,” and “Other.” Of the respondents that answered “Yes” to the first question, 18 of the 20 identified as women. Two out of 20 of the respondents identified as men. For our respondents that answered “Yes,” their ages ranged from 18-21, with the majority, 55.00%, of them being sophomores at ASU. Along with asking what year in school the respondents are, we also asked them to report what they are majoring in. We had a wide range and variety, but of the 20 students that answered “Yes,” four of them were Business-related majors, five of them were Sustainability majors, seven were Health-related majors, two were Computer Science-related majors, and two were other majors.

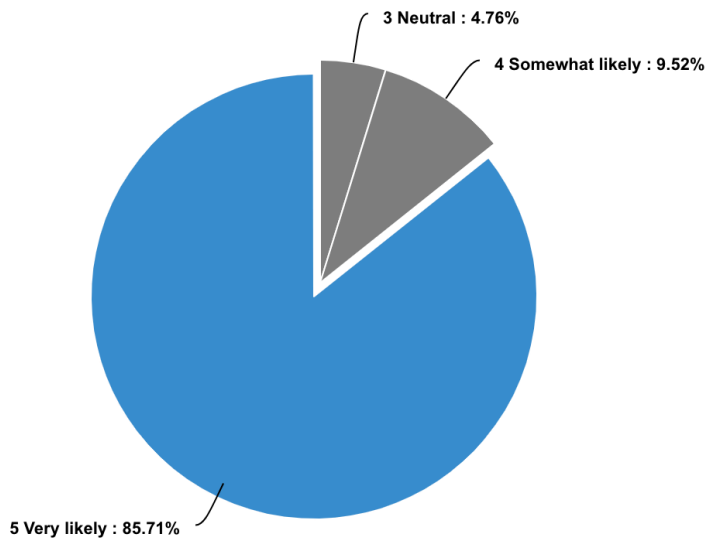
	Age	Gender
Standard Deviation	0.8891	1.008
Mean	19.7619	2.409
Minimum	18	2
Maximum	21	18

Majors



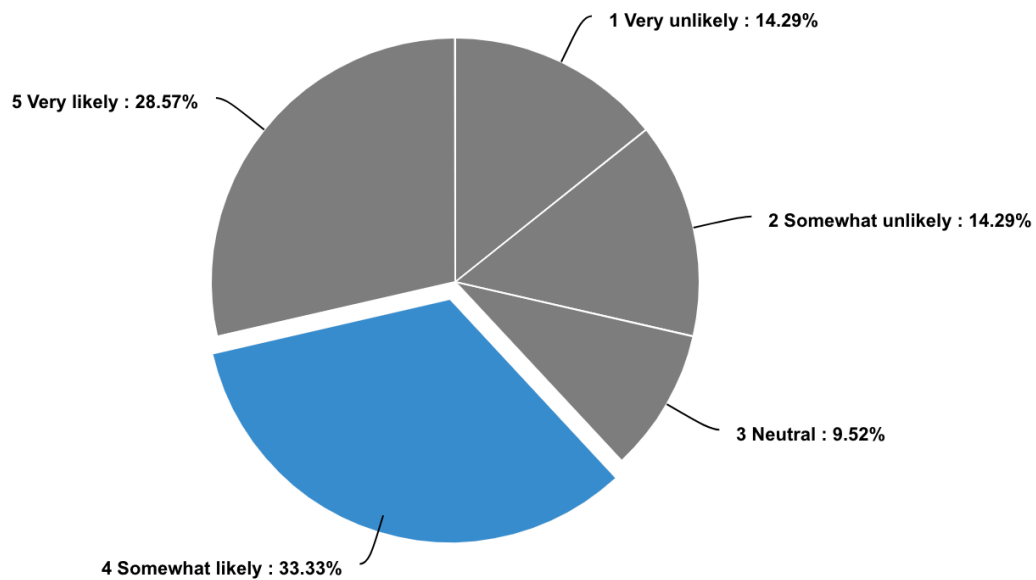
In the next section of questions, this is where it was broken down into how likely a student was to do something. By far the highest scoring question was “How likely are you to use recycling bins on campus?,” with an average score of 4.8 out of 5. This meant that the majority of respondents answered that they are “Very likely” to use recycling bins on campus. To break this data down more thoroughly, 17 people responded that they were “Very likely” to use recycling bins on campus, two people responded that they were “Somewhat likely” to use recycling bins on campus, and one person responded that they were “Neutral” in their likelihood of using recycling bins on campus (see fig. 2).

Fig. 2 How likely are you to use recycling bins on campus?



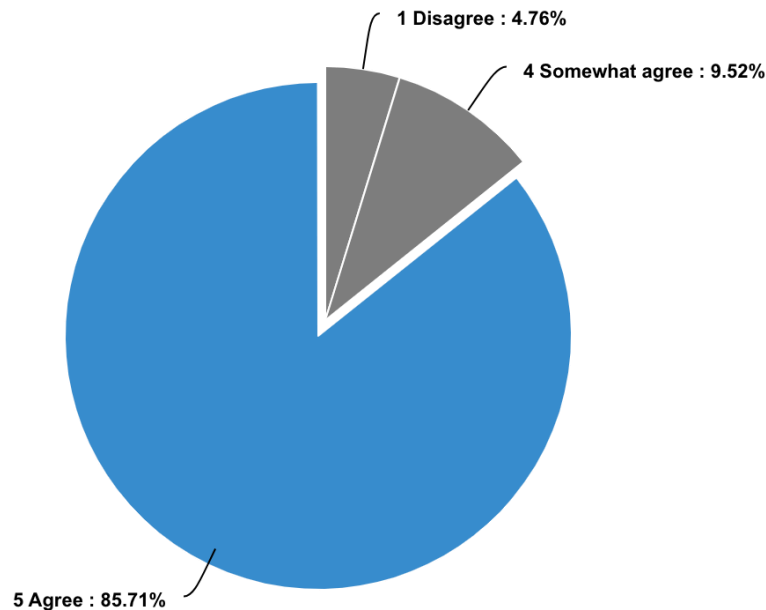
Additionally in this section, the lowest scoring question was “How likely are you to tell your friends about the Zero Waste Initiative?” This section had an overall score of 3.5 out of 5. To break this data down, only six people said that they were “Very likely” to tell their friends about the initiative. Seven people said that they were “Somewhat likely,” one person said that they were “Neutral,” three people said that they were “Somewhat unlikely,” and three people said that they were “Very unlikely” (see fig. 3).

Fig. 3 How likely are you to tell your friends about the Zero Waste Initiative?



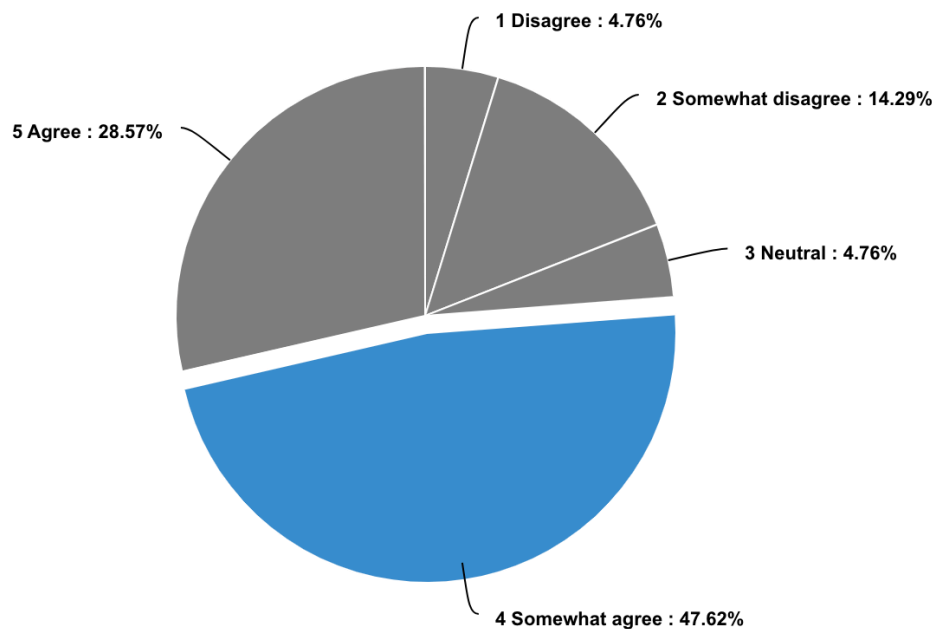
In the next section, we asked students how much they agreed with the statements that we gave them. The highest scoring question on this section asked students about their individual feelings around understanding recycling. To the question, “How much do you agree that: I understand the importance of recycling,” 17, or 85.00% of respondents answered that they “Agree” with the statement. Two respondents answered “Somewhat agree,” and one answered “Disagree” (See fig. 4).

Fig. 4 How much do you agree: I understand the importance of recycling.



In relation to our research question, when asked about the statement “How much do you agree that: I see the Zero Waste Initiative represented throughout campus,” only 30.00% of respondents (6 people) said that they fully agreed with the statement. Half of the respondents stated that they “Somewhat agree” that the Zero Waste Initiative is represented throughout campus, with 15.00% stating they “Somewhat disagree” and 5.00% saying they “Disagree.” Furthermore, to the statement “How much do you agree that: I feel like my contributions to recycling make a difference on campus,” six people responded that they “Agree,” and six people responded that they “Somewhat agree” (see fig. 5).

Fig. 5 How much do you agree: I see the Zero Waste Initiative represented throughout campus.



Another statement that we proposed to respondents was about how direct an impact the Zero Waste Initiative has had on them. “How much do you agree that: Zero Waste has increased your understanding of recycling?” The majority of respondents answered that they “Somewhat agree” with the statement, meaning that nine out of 20, or 47.37%, respondents replied with this statement. The rest of the respondents were split, with 21.05% replying they “Agree,” 15.79% replying they were “Neutral,” and 15.79% replying they “Disagree” (see fig. 6). Similarly, we asked the same question, but about the increased understanding of composting. To this question, the answers were much more split. Only 25.00% of respondents answered that they “Agree,” 30.00% of respondents answered that they “Somewhat agree,” 25.00% of respondents answered “Neutral,” 5.00% of respondents answered they “Somewhat disagree,” and 15.00% of respondents answered they “Disagree” (see fig. 7).

Fig. 6 How much do you agree that: the Zero Waste Initiative has increased your understanding of recycling?

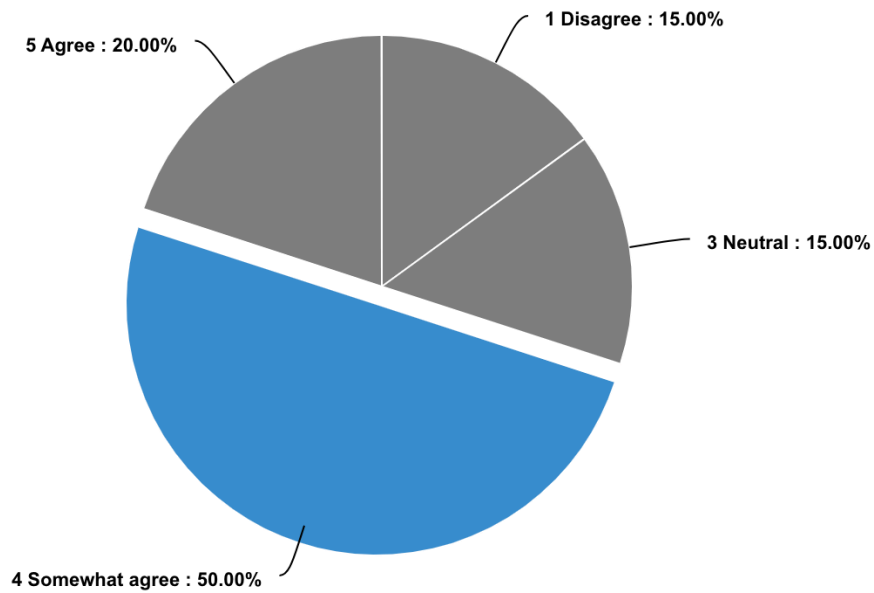


Fig. 7 How much do you agree that: the Zero Waste Initiative has increased your understanding of composting?

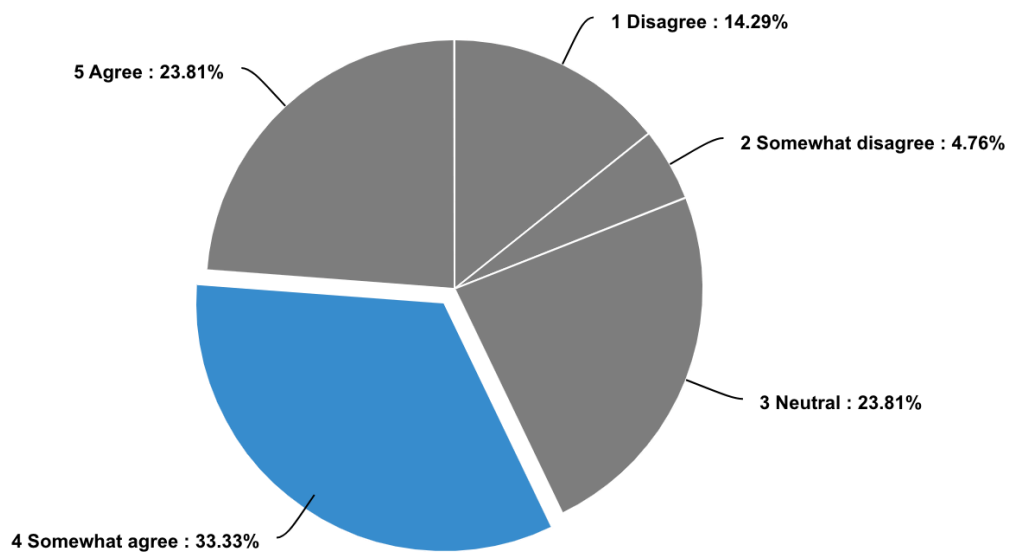
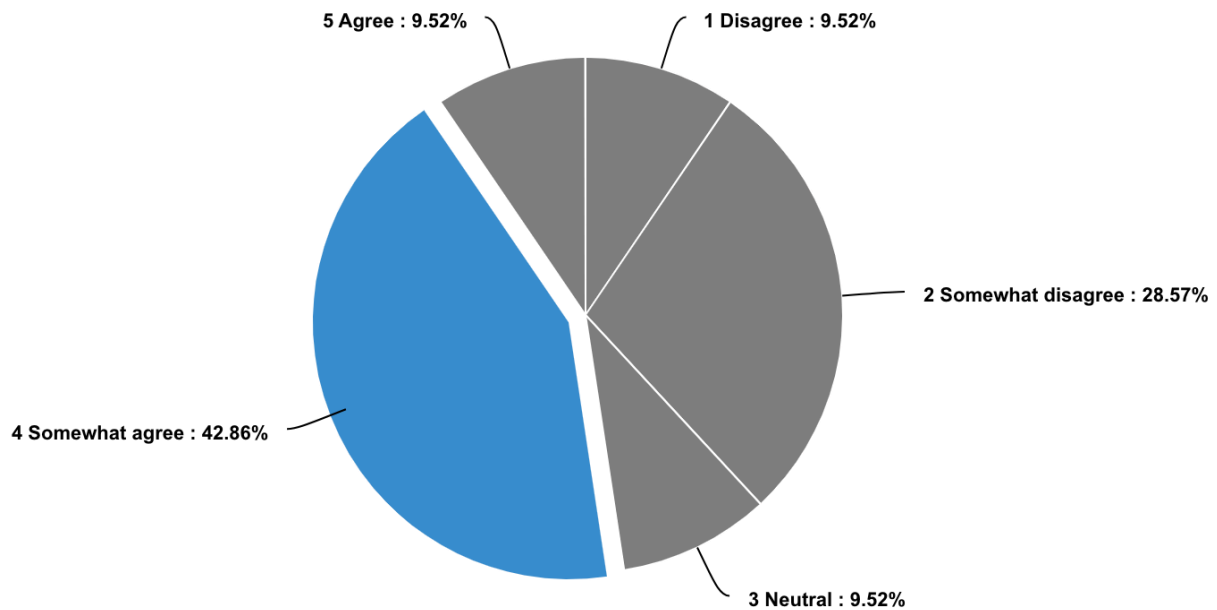


Fig. 8 How much do you agree that: I feel like other ASU students care about the Zero Waste Initiative.



Another statement which we had students respond to was “I feel like other ASU students care about the Zero Waste Initiative.” We had a majority respond, 42.86%, stating that they “Somewhat Agree” with the statement. The second largest category is “somewhat disagree” with a response rate of 28.57%. “Neutral,” “Disagree,” and “Agree” statements were all tied with a response selection of 9.52%, being the lowest selected categories. This relates more specifically with the research question that we wanted to answer, as it explicitly asks how much a student feels their peers care about the program.

Conclusion

Based on the data that we collected, we have come to the conclusion that Arizona State University’s Zero Waste Initiative has many mixed views from the student body. For the most part, the survey questions that we gathered data on received positive responses, indicating that of the students who took the survey, most had an understanding of the program and what the goals are. However, though students showed an understanding of the program, it was more of a surface-level interest rather than a comprehensive knowledge. Many of the goals that Kendon Jung outlines in his response parallel what we have seen with the response garnered from students. There seems to be a lack of ease with interacting with the program, and the program’s goal of focusing on increasing engagement would directly impact student involvement and momentum for the initiative. From our observations, it seems that the sample of the student body we surveyed show a general understanding of the components that are a part of the program, from composting and recycling, to their opinion on fellow students’ engagement. Additionally, it seems that many of the students show an interest in increasing their understanding and gaining more knowledge of the program as a whole. Though there is an interest within students for the

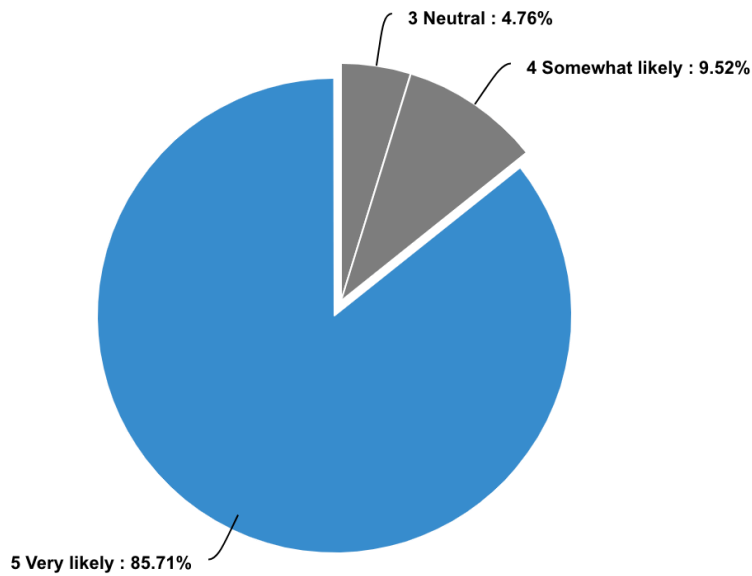
growth of the program, it is apparent that the program has areas in which improvement is necessary, as Jung has laid out. While the program continues to adjust its tactics surrounding involvement, it will not be able to succeed without the dedication of students and staff. As the program has grown and developed since its first implementation, based on the students' responses and Jung and the Zero Waste Team's goals, we are confident in the upcoming success of the program.

References

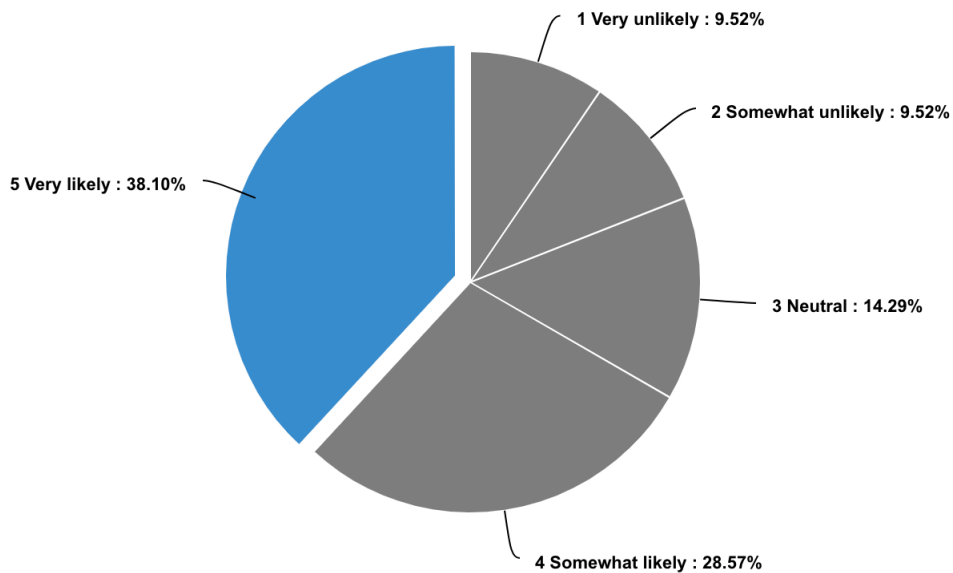
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Appendix

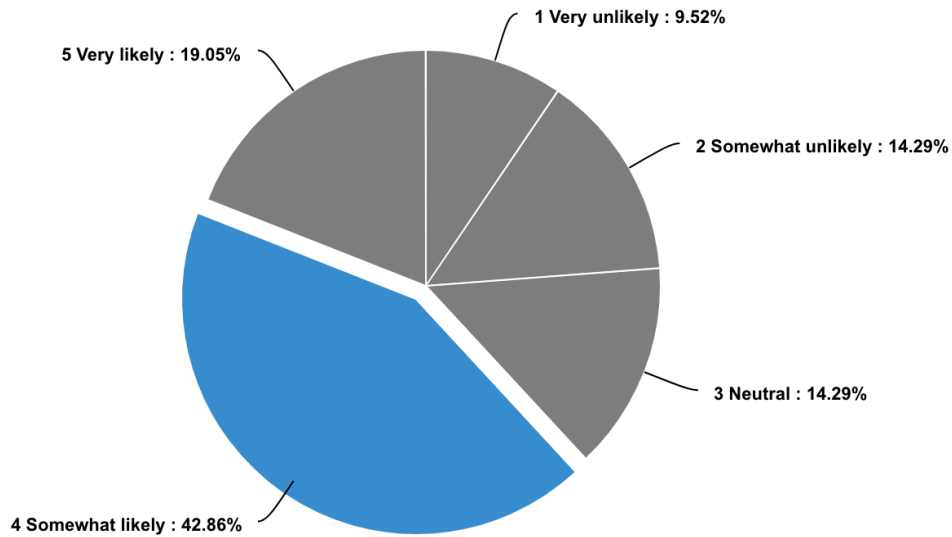
How likely are you to use recycling bins on campus?



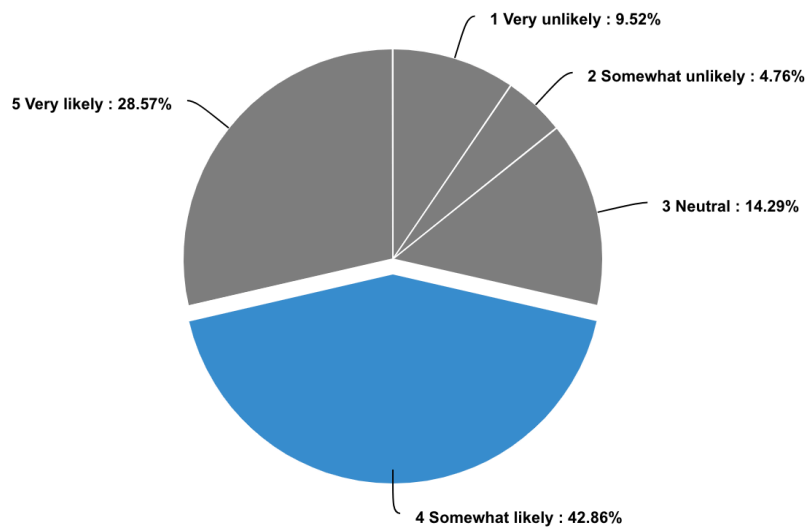
How likely are you to use compost bins on campus?



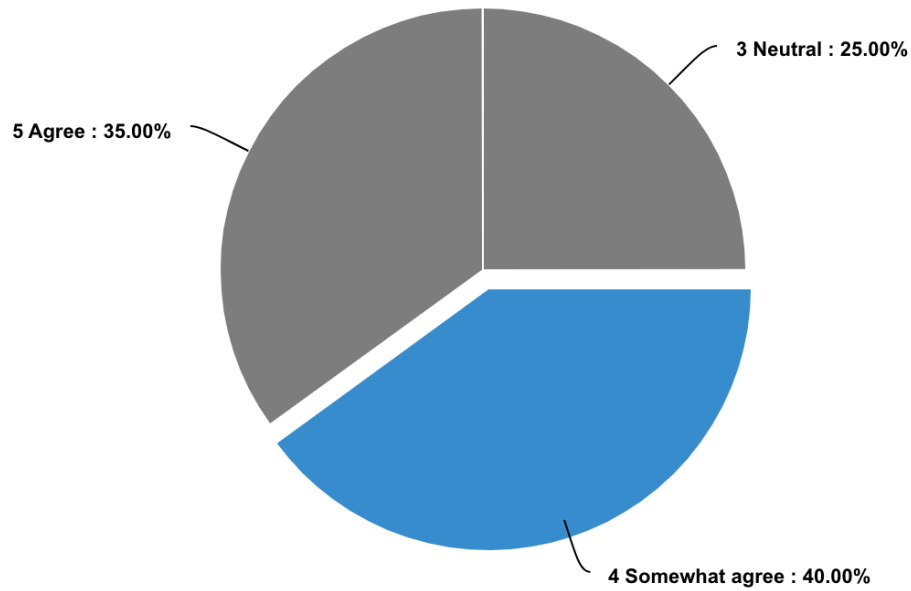
How likely are you to read Zero Waste informative signs on campus?



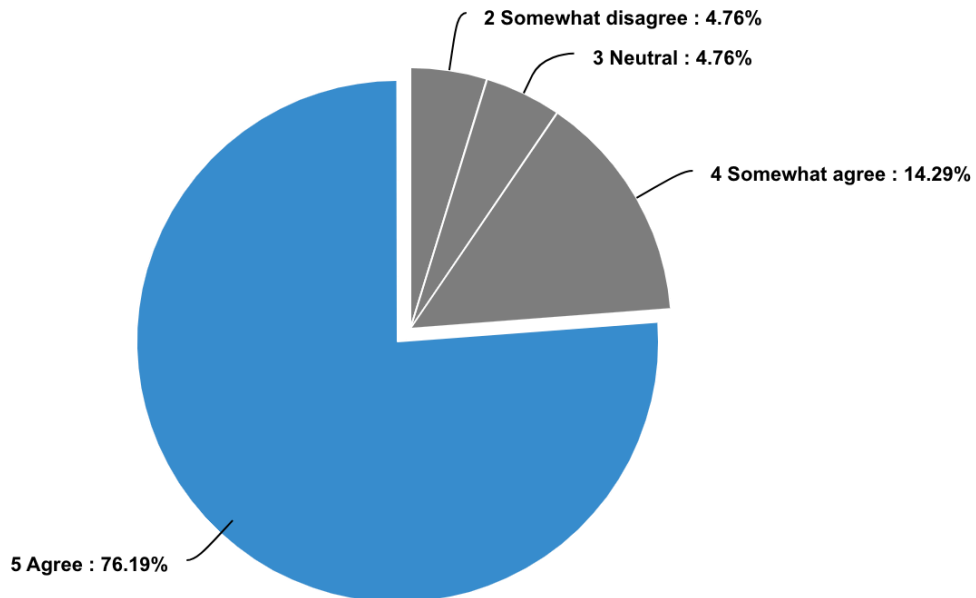
How likely are you to make a conscious decision about packing when making a purchase?



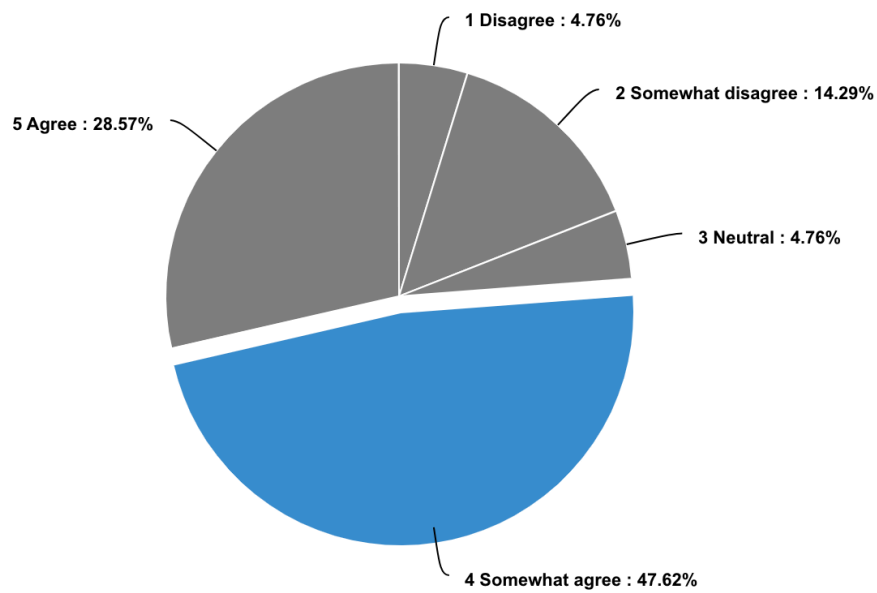
How much do you agree that: The Zero Waste Initiative is important to me.



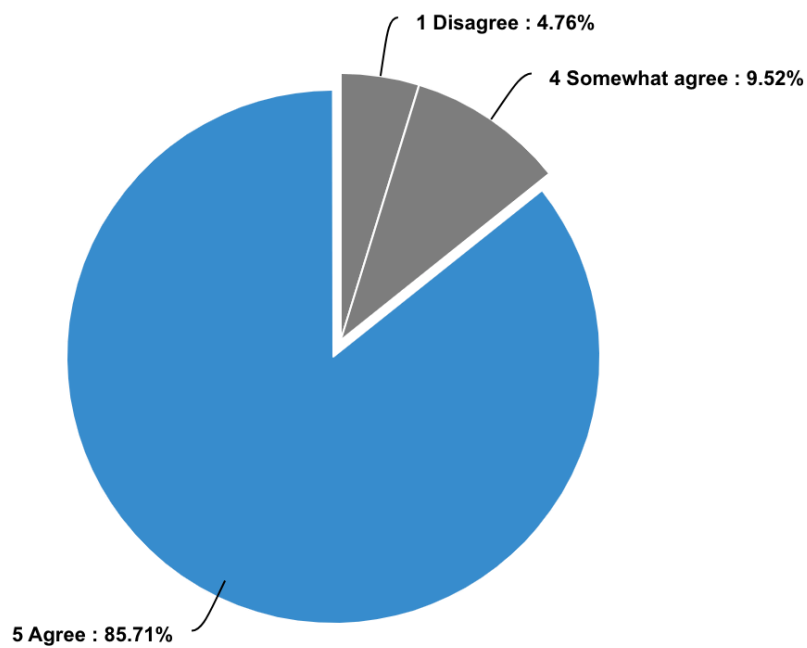
How much do you agree that: I make a conscious decision to utilize the correct bins for my waste.



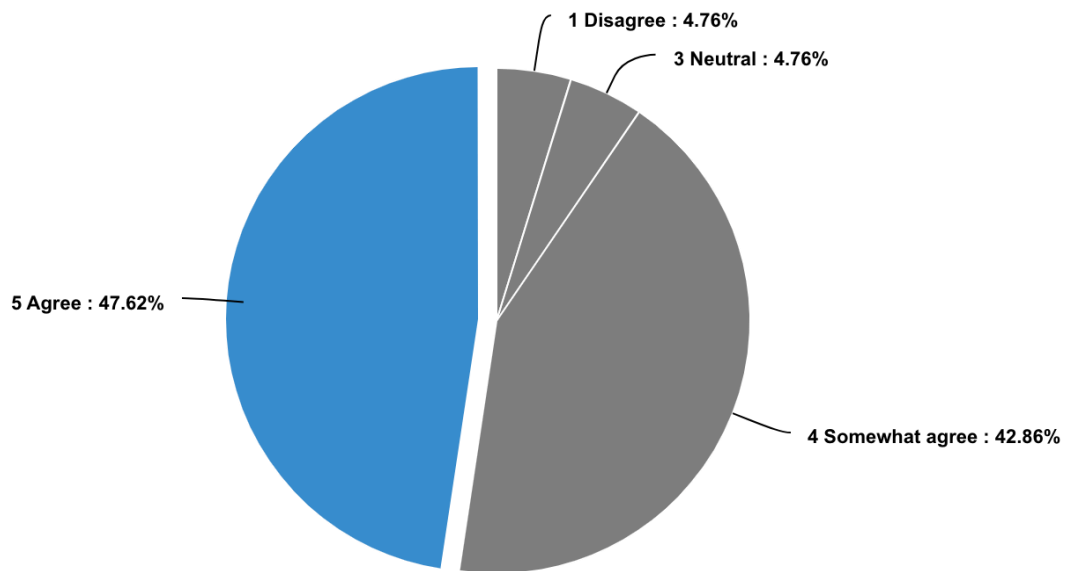
How much do you agree that: I see the Zero Waste Initiative represented throughout campus.



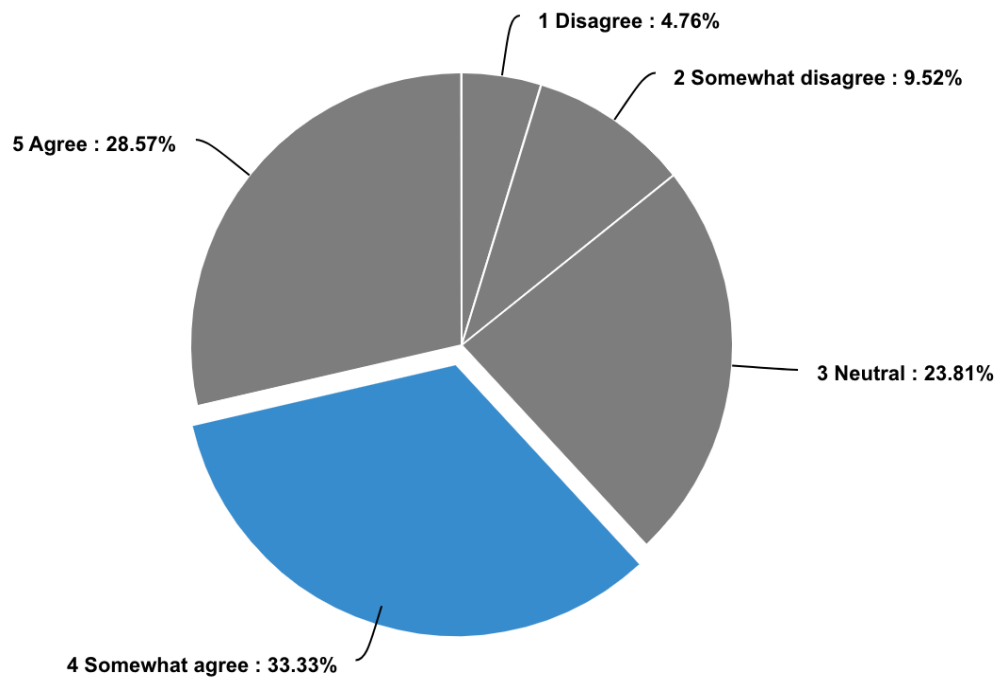
How much do you agree that: I understand the importance of recycling.



How much do you agree that: I understand the importance of composting.



How much do you agree that: I feel like my contributions to recycling make a difference on campus.



How much do you agree that: I feel like my contributions to composting make a difference on campus.

