What Motivates People to Donate Used Technology?

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Abstract

The digital era is rapidly advancing to meet the needs of today's society. The ACCESS Tech program at McMaster University aims to gather used technology through donation drive events, refurbish items, and donate items to a community partner to help Hamiltonians in need. The purpose of this study was to understand what motivates faculty, staff, and students at McMaster University to donate their used technology. The study was compliant with ethics and followed Braun and Clarke – a rigorous method of qualitative thematic analysis. Data was collected through in-person interviews and was then analyzed for key themes. Overarching themes included both motivators (direct reasons for donating) and facilitators (indirect reasons for donating). Motivators include benefits to self, such as the tidying of personal space and benefit to others such as serving communities in need. The facilitators include awareness and incentives provided. Our results provide insight into how to connect with donors' motivations and how to make future ACCESS Tech donation events more accessible and attractive to donors. Through this study, we provide several recommendations to improve future ACCESS Tech events. These include advertising to connect with donor motivations, broadening the target audience, continue providing incentives to recognize those who donate, and enhance the clarity and outreach of the event. Based on findings from this study, these recommendations are expected to generate more donations for future tech drives.

Key Words

Electronic waste, donation motivation, ACCESS Tech, thematic analysis, WEEE (Waste Electrical and Electronic Equipment), used technology donation.

1.0 Introduction

Since the start of the 21st century, the need to preserve the Earth has grown rapidly apparent. With increasing pollution in many forms (Fuller et al., 2022; Lu et al., 2018), each passing year makes it harder to ignore the fact that current systems of commerce and resources are not built to last (Sariatli, 2017). An effort to address these issues has gravitated towards looking for sustainable solutions to fix them. Importantly, sustainable solutions require meeting the financial, environmental, and social needs (Purvis, 2018). This means that sustainable solutions must be economically feasible, should help to reduce negative impact on the environment, and should be equitable to all who wish to participate. One easy method that promotes sustainability is the practice of reuse. Reuse is a simple method that gives a product a new life, does not require additional investment, and avoids contributing to pollution. Some examples of reuse include repurposing an item for another use or shopping from a thrift store rather than purchasing something new. However, there are some products that are conceived with an intentional breaking point, or more commonly known as planned obsolescence. Since these types of products are almost guaranteed to end up as waste and pollution (Rivera & Lallmahomed, 2015; Satyro et al., 2018), they become critical targets of alternative end-of-life management strategies. One type of product that suffers from planned obsolescence is modern electronic devices. If the lifecycles of electronics can move away from a linear lifecycle to a more circular one, we would secure a future that has less waste electrical and electronic equipment (WEEE), especially considering the rapid growth of the production and consumption of these electronics. One effective sustainable solution to the linear lifecycle of used electronics is to donate them for reuse. There are programs that collect, refurbish, and donate used technology to communities in need, giving the used technology another life instead of waste (ERA, 2022; reBOOT Canada, 2022; rTraction Canada, n.d.). However, donation drives can only give as much as they get, thus there is a need to increase the number of used technology donations. By identifying what influences people to donate, recommendations can be made to engage more potential donors.

There are common factors that influence people to donate as presented in prior literature. These factors include whether an individual consciously thinks about recycling (Darby & Obara, 2004), if the individual is aware of how to donate used technology (Wang et al., 2018), and the convenience of donating used technology (Casey et al., 2019). Prior literature also identified some barriers regarding donating used technology. Tang and Chen (2022) explore various factors that may prevent someone from donating their devices, such as privacy and security risks, their attitude towards sustainability, and rumors amongst social groups about bad experiences when donating used technology. However, the majority of prior research on the topic of technology donations covers the factors that help people donate their used technology, but not about what motivates them to do so. There is a formidable gap in literature that does not look directly at the motivations of why people donate their used technology. To address the gap in the literature, we wanted to find out *why* someone would donate their used electronics in the first place, instead of what helps people donate their used electronics. To differentiate these two throughout the paper, we will identify the reasons why people donate as “motivators” and identify aspects that help people donate as “facilitators”. Therefore, while prior literature investigates factors that may help

or hinder someone to donate their technology, literature that looks directly at the motivators behind why people donate their used technology is lacking.

The factors that influenced people to donate in general can be extrapolated to the specifics of technology donations. This can help us in investigating and distinguishing motivators and facilitators in our research. Regarding blood donations, Sojka and Sojka (2007) found that altruism was a common motivator. However, they also specify a difference in motivators between first-time blood donors and active blood donors. First-time blood donors were directly influenced by recruitment strategies, while active blood donors were influenced by a sense of being a blood donor as part of their identity. Steele et al. (2008) employed a quantitative approach to investigating altruistic motivators behind blood donations, and found that facilitators such as convenience, community safety, and personal benefit may have a stronger influence in eliciting blood donations. A similar suggestion was drawn for organ donations, where Bolt (2010) suggested that the wish to be useful after death made up most of the motivators for body donors. However, Bolt also mentioned that personal benefit, in forms of control of what happens with one's body after death, personal emotional reward, or as instruments in conflict were suggestable motivators. A quantitative study by Bolt (2011) regarding body donors suggested again that it is more likely that donor motivations stem from a combination of altruism and personal gain, rather than pure altruism. For philanthropic donations, Sen et al. (2017) employed a quantitative approach to find motivators and facilitators for money donations. They found that one's personal and financial situation play a large role as facilitators, and that altruism and personal reward were motivators. Ziloochi et al. (2019) also found that altruism and personal satisfaction were motivators for philanthropic donations and found that empathy for others in need acts as a motivator. In summary, when extrapolating from other types of donations, there is a common theme of altruism, empathy, and personal benefit as motivators, and convenience and recruitment as facilitators.

For this study, we will be working with ACCESS Tech and their donation drive to conduct our research. ACCESS Tech, previously known as Trash to Treasure, is a collaborative initiative of McMaster University and Empowerment Squared, in Hamilton Ontario. Empowerment Squared is a local non-profit based helping "newcomer, racialized, and marginalized communities in Canada" (Empowerment Squared, 2022). ACCESS Tech collects used technology from the McMaster community where the donations are sorted, cleaned, and wiped of previous data. The highest quality donations then are sent to Empowerment Squared for refurbishment and community distribution. Remaining items are then sent back to the McMaster community for reuse by students. Finally, donations that are not taken are responsibly recycled. It is important to note that for this donation drive to continue to serve Hamiltonians in need, there needs to be a reliable source of used technology being donated. Thus, we aim to understand the motivations of why people donate their used technology.

This paper will explore the motivations of why people donate their used technology to ACCESS Tech at McMaster University. The Methods section describes our qualitative thematic analysis process, detailing assumptions, and how we analyzed donor interviews. The Results section describes the themes and sub-themes that we identified from the data, distinguishing

motivators and facilitators. We conclude our paper by presenting the motivators, facilitators, and recommendations to increase used technology donations at future ACCESS Tech donation drives.

2.0 Methods

2.1 Overview

Prior to conducting the study, we got approval from ethics and then followed Braun and Clarke thematic analysis guidelines (Braun & Clarke, 2006). In this study, the main goal of our project was to increase technology donations within the McMaster community, through conducting qualitative research to aid populations in need. As part of our goal, we structured three objectives which will be discussed further in this section. Interviews were conducted to gather data for our qualitative research.

2.2 Piloting Interview Questions

To initiate the project, we started by brainstorming questions that we would want to ask the participants to gain insight into our research question. These draft questions were reviewed by our Community Project Champions (CPCs) and our course instructor. The CPCs consist of members from McMaster's Facility Services and University Technology Services (UTS). They are the primary decision-makers in implementing changes relating to ACCESS Tech at McMaster. The interview questions were revised until we were content with the quality of work. Revisions were made to ensure the interview questions were open-ended, provided flexibility in the types of answers that could be given, and directly related to our research question. In order to test the quality of the questions, a pilot trial was conducted within the SUSTAIN 4S06 classroom setting with our fellow classmates. This allowed us to receive feedback, get comfortable with our questions, and ensure everything ran smoothly for recruitment.

2.3 Recruitment

When the participants came to donate, they were given donuts as an incentive. Our 4S06 interview table was strategically placed next to the table with the donuts. This was great as we were able to recruit participants while they were receiving their donuts and encouraged them to participate in our interview to get another incentive, a water bottle. After receiving their water bottle, we interviewed the donors who wanted to share their thoughts regarding their technology donation. To start off the interview, we informed the staff/students more about our study, gave them details about how long the interview would take, and took them through the letter of information verbally.

2.4 Interviews and Participation

Our first objective was to collect in-person interviews from the McMaster community donors. The interviews were collected during an ACCESS Tech donation drive event on October 27th, 2022, which took place at the Burke Science Building (BSB) field across from University Hall. This location was centrally located in McMaster University with several lecture halls, the student center, bus stops, and food amenities. We estimated that between 10-15 participants

would be sufficient to draw conclusions about donor motivations, and that 20 participants would be ideal. As such, we planned to interview 20 participants within the 2-hour timeframe of the event. We chose to do in-person interviews to help gauge more participants by having incentives present at the location of the interview. The donuts intrigued people to come donate and the water bottles enticed people to participate in the interview. Once they consented to participate, we took them aside to a private setting and began by asking them the research questions while simultaneously either recording them via the recorder or making notes on paper.

2.5 Transcription and Data Security

After collecting the interview data, we analyzed, transcribed, and coded the interviews to understand why donors donate used technology. We began by transferring the interviews from the recorders into our McMaster OneDrive accounts on Microsoft Teams. We made a shared file, so all the members have access to the interview recordings. We used McMaster OneDrive because it is a secure portal for storing information, especially if one wants to maintain confidentiality of the study participants. We transcribed each interview by hand to prepare for analysis. We used a word document to compile our transcribed interviews, also in our secure OneDrive in a shared file. We ensured that no personal identifiers of the participants were present in our transcribed interviews, to maintain further confidentiality of the responses. We deleted the recorded interviews from our McMaster OneDrive once our transcripts were cleaned and finalized.

2.6 Thematic Analysis

Thematic analysis is "a qualitative method for identifying, analyzing and reporting patterns (themes) within data" (Braun and Clarke, 2006 p.79). Following guidance from Braun and Clarke (2006), we transcribed the interview data and shortly after, we began to familiarize ourselves with the data by identifying quotes which help to answer our research question. We jotted down ideas and potential coding schemes and eventually after several readings of our data, we initiated the formal coding process. Once the coding was complete, we sorted the codes into potential themes. During this stage, we created a rough draft of the thematic map with themes and subthemes. Furthermore, we revised and refined the themes and came up with our final thematic map.

The data corpus was all the research and interviews conducted by the us. The data set comprised of the interviews that the ACCESS Tech donor group conducted, and specific themes collected from our own interviews. Rich description was chosen as we looked at the Hamilton community, where we identified predominant themes instead of focusing a lot on their depth. We took an inductive approach in our research. This is where we first came up with our themes and sub-themes, and then performed a literature review after to get a broader understanding about the research topic. Previous research helped us to compare and contrast some of the donor motivators we found in our study. For our epistemology, we took an essentialist approach to understand the data at face value along with some interpretation of meaning. For example, there was discussion about what one of the interviewees really meant when they said, "sanitize my devices", prompting us to interpret the data to fully understand what they meant. We utilized a

semantic approach to identify themes within the explicit or surface meanings of the data. We especially progressed from a descriptive to an interpretative phase to identify the themes. In the end, we attempted to theorize the importance of patterns and their broader meanings.

Initially, a thematic map was constructed based on all the codes and themes from the data whether they directly related to our research question or not. This can be seen in Appendix A. We then narrowed down this thematic map based on keyness and primary themes that directly relate to our research question. The themes identified from the interviews were split into motivator and facilitator themes and sub-themes. After careful review of our interviews, we decided to label **key** themes as the ones that directly answer our research question, regardless of their prevalence within the interviews. For the sub-themes found under the key themes, we organized them based on our prevalence criteria. We decided that a sub-theme should be prevalent within 25% of our interview data for us to include it in our analysis. This is to say that an idea should be mentioned in 5/20 interviews for it to be considered prevalent.

3.0 Results

3.1 Themes: Motivators and Facilitators

The purpose of our research was to understand what motivates McMaster faculty, staff, and students to donate their used technology. Our study was performed by conducting in-person interviews of the donors who donated used technology to the ACCESS Tech event. They were given a McMaster reusable water bottle as an incentive for their participation in the interview. Some participants (4) did not take the water bottle incentive because they wanted to be conscious about their consumption. After coding the interviews for themes, we were able to find the motivations of the donors behind donating used technology, in parallel to some facilitators that helped with the donations. When referring to motivations behind donating, we considered direct reasons for why the donors acted in a particular manner to donate any previous technology they had. Through thematic analysis, we identified two overarching key themes and five sub-themes. We described the two overarching themes as Motivators and Facilitators. The direct benefits to themselves, the benefits to others and the environment, and the aspects that made donating easy, including awareness and incentives are the 4 sub-themes defined based on the prevalence criteria. The final thematic map of themes is depicted in Figure 1, and a description of each, along with participant quotes follows. The previous iteration of the thematic map can be found in Appendix A.

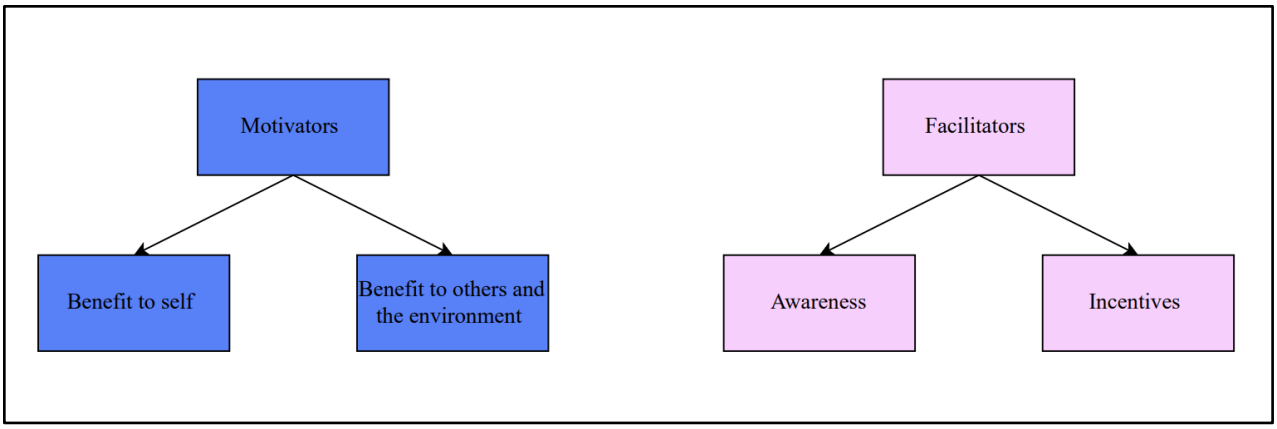

Figure 1. Final draft of thematic map: motivations and facilitators of why people donate used technology.

3.2 Motivator Sub-theme: Benefit to Self

As an initial sub-theme, we found that individuals are motivated to donate technology if they are acquiring a benefit to themselves through donation. This sub-theme of 'Benefit to Self' was mentioned by 17 out of 20 participants. Participants describe benefits to self in various ways, with one of it relating to their personal values. This comprised a feeling of trust in knowing that any data on their donated device would be sanitized/removed by a university representative before being donated. Participant #5 describes how it was through the advertisement of about the event that they became aware of the need for hard drive sanitization, and how the opportunity to have a credible university representative perform that function as a motivator for them to donate:

> *"I heard about this event and that they sanitize the hard drives, which I didn't even know was a thing. I was like oh to take it here, because then at least I know that someone's going to take the data off from it...A university sanctioned event so that they would make sure it was handled properly because of the people who were involved, and because it came over like the e-mail. When I saw the e-mail, it came from like our vice president."*

The sub-theme of trust in the event was mentioned in 5/20 interviews, meeting the prevalence criteria.

Another benefit to self commonly stated was in regard to clearing out their personal space. Participant #17 describes how donatable items were taking up valuable office space, and how gaining back that space was a motivator to donate:

> *"We need office space, and it takes up a lot of real space in our office that we can't afford to lose."*

The sub-theme of decluttering was mentioned in 17/20 interviews, meeting the prevalence criteria. These sub-themes and the different ways in which they are described by the participants can be seen in the figure in Appendix A.

3.3 Motivator Sub-themes: Benefit to Others and the Environment

We also found that individuals donated used technology for the benefit of others and the environment. The sub-theme of benefit to others comprises of the reasons that help to support the individuals in need who will be using the donated technology. Specifically, the donors often mentioned in our interviews that acting altruistically towards the needs of others was a motivation for them to donate their used technology. Altruism describes being selfless, behaving in a manner to increase the well-being of others in society without directly achieving a benefit to oneself. A quote directly coming from interviewee number 16 that depicted this altruism included:

> *"So if I can't use it, someone else can use it and there's no reason to sell it if we have resources on campus that will reallocate it to people who actually need it, who might not be able to afford it."*

This sub-theme was mentioned in 16/20 interviews.

Consecutively, the motivation behind donating used technology was found to be coming from possessing an environmental conscience. Participants mentioned their willingness to be sustainable to help the environment, which we discovered as another sub-theme. For instance, subject number 9 revealed in their interview:

> *"Oh, I think it's just environmental consciousness and I don't think it is right to just throw these in the garbage."*

This sub-theme was mentioned in 8/20 interviews. As a result, we found that a lot of individuals donated because of their morals to act in a specific manner. These morals relate to helping others in need, alongside taking care of the natural environment.

3.4 Facilitator Sub-themes:

The key facilitators that we discovered after coding the interviews can be detailed further into multiple contexts. These categories of the key facilitators are visually represented in Figure 1. To begin with, one key facilitator that made it easier for the donors to donate their used technology included the awareness of the ACCESS Tech event. In this case, awareness indicates the knowledge of the participants of the donation event being held on campus at McMaster University. One of the technology donors, number 17 came forward with their perception and shared:

> *"Specifically, yesterday I got an e-mail saying that the donation event would be happening and that they would be reusing the items to help the community."*

The sub-theme of awareness was mentioned in 13/20 interviews.

Secondly, the key facilitator that initiated the effort of the donors to donate their used technology included the incentives being offered at the donation event. Incentives were indirect motivators to stimulate the main outcome of donating, where a promise was made to offer a small concession to the participants who donated their used technology. In our event, these incentives included Donut Monster donuts if donors donated their used technology. In the interview, technology donor number 3 asserted:

"I will say the donuts were a draw as well."

The sub-theme of incentives was mentioned in 7/20 interviews.

To conclude, we found two main themes of Motivators and Facilitators from the interviews. The motivator sub-themes included benefit to self, and benefit to others and the environment, along with the different ways the participants described them. The key facilitators that encouraged people to donate by making the process of donation easier included the awareness, convenience, and incentives of the ACCESS Tech event, which served as the facilitator sub-themes.

4.0 Discussion and Recommendations

4.1 Leveraging Motivators in Event Advertisement

Our study found that people donated both for their own advantage and to demonstrate generosity. Twelve interviewees cited a combination of these two as their main motivation for donating, which is in line with the literature review we performed. Thus, being both self-less and self-centered can be motivators for technology donations, alongside donations for other items as stated by previous research (Ziloochi et al., 2019). Considering this idea, it might be advantageous to promote donations by using the phrase "Come engage in Selfless Service" in order to draw people who have a charitable mindset. Additionally, "Come declutter your space!" can be an alternate way to advertise to target those who would donate for the benefit of themselves. The current way of advertising donations on ACCESS Tech McMaster's website attracts those with an altruistic mindset as it mentions, "... distribute to Hamiltonians in need". However, it fails to incorporate the benefit to self-portion in the advertisements. Thus, we are not targeting those individuals who are donating for non-altruistic reasons.

4.2 Recommendations

The three recommendations that were greatly prevalent throughout the interviews included continuing incentives, reassessing the target audience, and enhancing clarity and outreach. These can help to increase donations for subsequent ACCESS Tech events.

4.2.1 Incentives

Seven out of the twenty interviews mentioned the donut reward, demonstrating the benefit of providing this incentive during donation drives. An interviewee remarked, "The donuts were a draw", indicating the impact of the incentive where a donut served as the reward for donating an item. Additionally, some people specially left to find an item to contribute to the donation drive after hearing about the donuts, leading us to conclude that the incentive had a significant impact on donation facilitation. The interviewees strongly valued the water bottles, which served as rewards for participating in the study's interviews, as evidenced by their in-person replies. As a recommendation for the future, the event should continue to offer donuts from Donut Monster as an incentive. These are local artisan donuts that support inclusivity, offering vegan options as well. It is also recommended to continue giving one donut to the first 50 donors to create a sense of urgency. We recommend that the event be promoted along the

lines of "Donut to Donate" in the advertisement section to highlight the incentive. All things considered; incentives are an effective tool for boosting involvement in the ACCESS Tech Donation Event.

4.2.2 Re-evaluation of Target Audience

Prior to the event, promotional emails were only sent to McMaster staff and faculty. Here, an assumption was made that McMaster staff members would donate more than the students. On the day of the event, it was clear that this was not the case. Due to the event being conducted at McMaster University, students that go to McMaster should be considered a part of the target audience. Many students who passed by said that they would have brought their used electronics to donate if they had heard about the event. A follow-up question was asked whether more students would have come to donate if they knew about the event. In response, six interviewees responded yes it would've resulted in a greater number of donations. Due to students not knowing, the McMaster staff made up the majority of those who contributed on the day of the event. To boost the number of donations in the future, it will be crucial to establish a student audience. Students should also be alerted via email, making them better prepared to provide more donations on the day of the event.

4.2.3 Enhancing Clarity and Outreach

Through these interviews, we discovered a few areas where improvements can be made. It would be beneficial to have active communication with the staff and students to answer their questions prior to the event. For example, one of the interviewees did not receive an email back when they inquired about the used technology being picked up from their facility. Even though they had numerous items to donate from their home, they could only bring a finite number of items to the event. Additionally, one interviewee said that the used technology donation drive should have a set event date every year, which is an interesting outlier that we found. This would provide regularity and entice people to donate at roughly the same time each year. A participant added that having a fixed date each year would enable them to accumulate donations and donate it all at once. Suggestions such as these will enable us to increase our communications which can then allow us to increase donations.

4.3 Summary

To conclude, this study answered our research question relating to donor motivations. We employed a qualitative research method guided heavily by Braun and Clarke to analyze the interview data we collected. We used the data to come up with themes and sub-themes relating to our study. The themes and sub-themes identified motivators and facilitators which are described in the Results section. We listed the motivators and facilitators and made recommendations based on our findings. Our findings suggested that individuals either donated from an altruistic and/or selfish mindset. Thus, we recommend advertising towards both selfish and selfless motivations to engage more donors. There are three main recommendations that were made by the interviewees which are essential to increase the number of donations. These include continuing incentives, re-evaluation of the target audience, and improving clarity and outreach.

With the help of this study, we intend to raise the most donations possible to support those residents of Hamilton who don't have access to technology.

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Appendix A

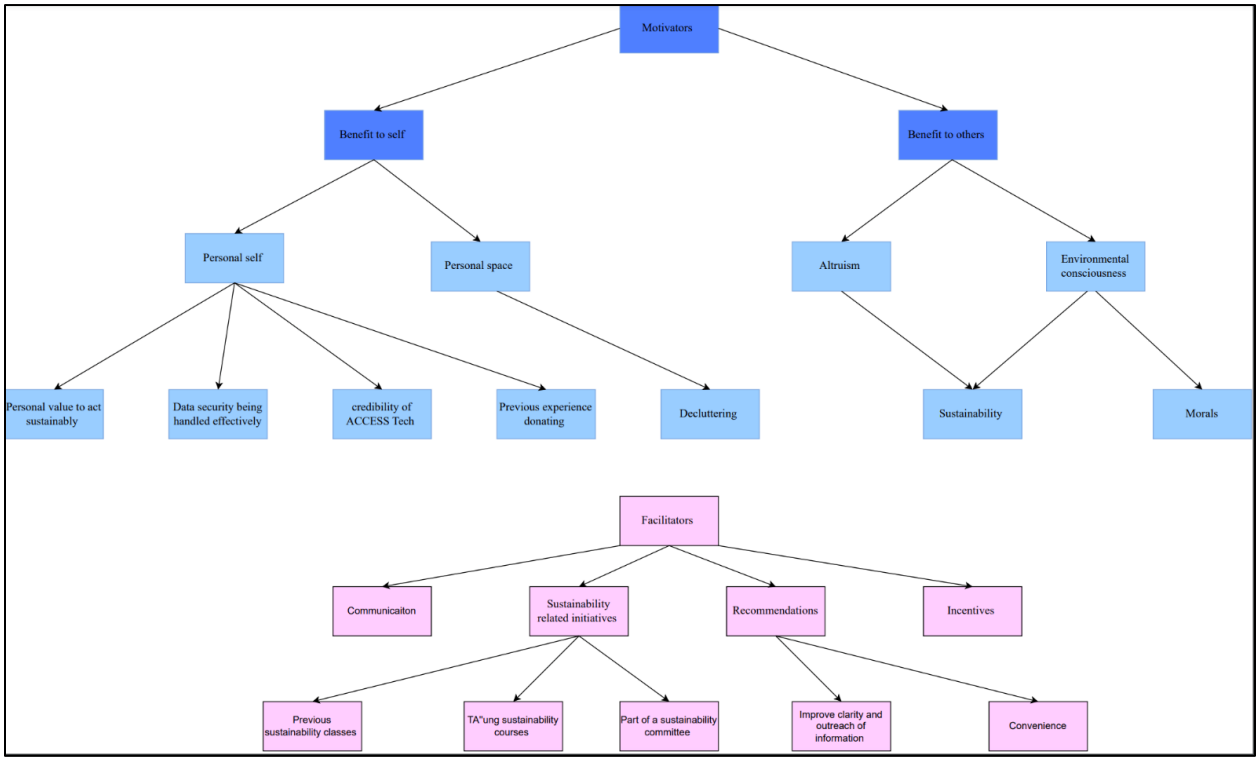

Figure 2: Rough draft #1 of thematic map: motivations and facilitators behind why people donate technology. The first thematic map based on initial codes, included an in-depth analysis of motivators and facilitators. The main themes were motivators including benefit to self and benefit to others, as shown in dark blue. When collecting direct quotes from interviews several other sub themes were created to explain "benefit to self" or "benefit to others", as shown in light blue. On the other hand, there were several indirect reasons that influenced individuals' decisions to donate their used technology. These include how well the event was communicated and advertised, whether interviewees were a part of sustainability related initiatives, recommendations for future events, and the incentives which drew participants.

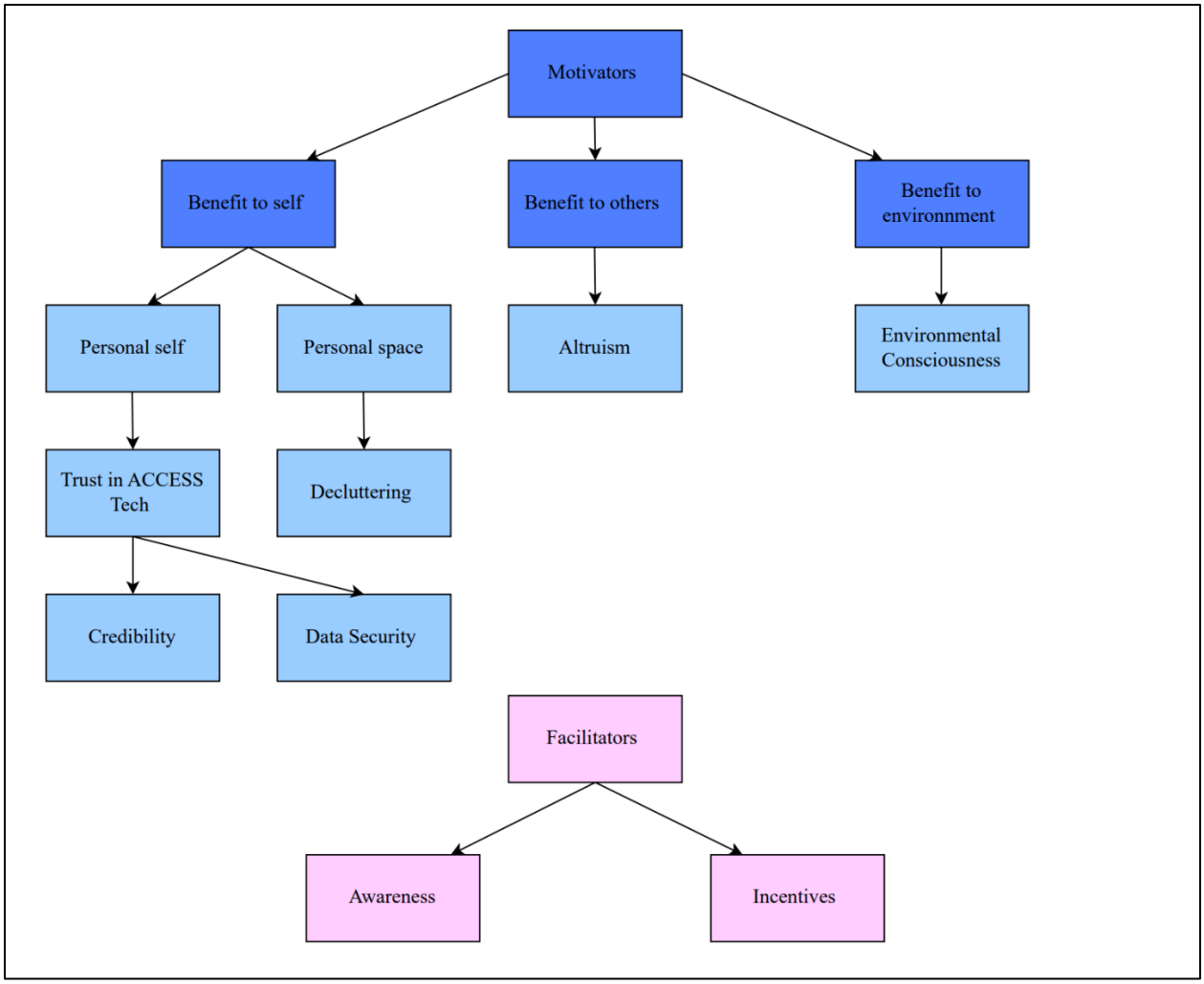

Figure 3. Rough draft #2 of thematic map: Sub-themes stemming from the key themes of motivators and facilitators. The thematic map was created in the second round of revision.