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Volunteers in non-profit groups are a valuable workforce that contributes to economic development and supports people in need in the U.S. However, many non-profit groups face challenges including engaging and sustaining volunteer participation, as well as increasing visibility of their work in the community. To support non-profit groups' service, we explored how engaging community members in the volunteer-acknowledgment process may have an impact. We set up workstations and invited community members to write thank-you cards to volunteers in non-profit groups. We conducted 14 interviews with volunteers and community members, collected and analyzed 25 thank-you cards. We found that the acknowledgment activity can help circulate social goods through multiple stakeholders, that authenticity was valued in the acknowledgment process, and that non-profit groups intended to distribute, reuse, and publicize the acknowledgments to utilize them to a fuller extent. Our contributions include expanding knowledge on experiences, needs, and impact of community acknowledgment from different stakeholders, as well as presenting design opportunities.

CCS Concepts: • Human-centered computing → Human-centered computing.

Additional Key Words and Phrases: Community engagement; non-profit; volunteering; acknowledgment

1 INTRODUCTION

Volunteering seems to be a light-weighted paradigm for engagement, but it provides an impactful workforce that contributes to economic development and helps people in need in the community. For instance, in the U.S., 77.4 million volunteers devoted 6.9 billion hours of their time to support a non-profit group in 2018 and generated 167 billion dollars worth of labor [1]. Besides providing benefits to the service receivers, volunteering is also valuable to volunteers themselves. The benefits include enhanced vitality, perceived well-being, self-esteem, and life quality [43, 61].

Despite the value of the non-profit groups, many groups face challenges in their work such as attracting potential volunteers, sustaining participation, and increasing group visibility in the local community [24, 49, 56]. Non-profit groups rely on volunteers to provide public services and achieve the groups' missions, but many constraints prevent people from becoming volunteers, such as a lack of time and little awareness of available opportunities [45]. In addition, the non-profit groups struggle to motivate volunteers to stay with the group and continue their services. For instance, the average volunteer attrition rate was 35 percent in the U.S. which means that non-profit groups may lose one out of three volunteers gradually [2]. Another challenge is a lack of visibility in the local community [11]. For instance, local environmental groups hike to the streams to obtain water samples and monitor water quality. Their work is critical but invisible in the community [11]. This challenge could hinder volunteer recruitment, because people need to be aware of these groups' presence and understand the value of their work to contribute as a volunteer [8]. It may also prevent the groups from making a greater impact, because few community members know and utilize their services.

Researchers have a great interest in helping non-profit groups tackle the aforementioned challenges. Particularly, previous studies found that giving acknowledgments to current volunteers can help the groups build a relationship with their volunteers and motivate volunteers to sustain participation [19, 60]. These studies focused on acknowledgments within the non-profit groups, such as verbal appreciation, training, and certifications, as a part of the volunteer management strategy [27, 56]. Previous studies also illustrated the benefits of engaging community members in different aspects of community development such as public health [4], democratic participation [15], and heritage preservation [5] among others. For instance, engaging community members can help to create social ties and build trust [14]. While

volunteer acknowledgment can ease challenges such as volunteer attrition [19, 60], it is unclear if and how engaging community members in the volunteer acknowledgment process may have an impact on the volunteers and community members themselves.

To answer this question, we set up workstations and invited community members to write thank-you cards to volunteers in non-profit groups in a local community. We used these stations as design probes to evoke volunteers' and community members' reactions and talk about experiences with the acknowledgment activity. We utilized the workstations to explore how technologies can support the acknowledgment activity among volunteers and community members. We define acknowledgment as any gesture to recognize ones' work which could include showing gratitude or making connections. These thank-you cards were also presented on a publicly accessible website. We chose to use thank-you cards, because they are accessible without any device ownership requirement. We used physical workstations as probes, because tangible artifacts are more visible to generate interactions and collaborations [36, 47]. At the stations, the participants can view photos of volunteers providing services, and write thank-you cards to groups or people of their choice.

We conducted interviews with ten volunteers and four community members to understand the experiences of the volunteers and community members. We interviewed the volunteers to understand their impressions of acknowledgment and their thoughts of the stations. We inter- viewed community members who browsed the website that presented the thank-you cards and who wrote thank-you cards at the stations. We found that the volunteers appreciated this novel form of acknowledgment, and intended to publicize and reuse acknowledgments to maximize the impact. They believed that the workstations helped to increase their visibility in the local community. Moreover, the community members were able to gain from this activity as well. They enjoyed the acknowledgment activity, learned about resources in the community, and intended to contribute to public services in the future. Finally, we identified that authenticity was a valued characteristic in acknowledgment. We present the insights using both interview data and user-generated content on thank-you cards. We further discuss and provide implications of the findings to provide recommendations for future designs. Our work has primary contributions to the HCI and CSCW community by presenting how engaging community members influences the experiences of volunteer acknowledgment, expanding the knowledge on the value of authenticity in a pro-social activity,

understanding the needs of non-profit groups to utilize acknowledgment to expand the impact, and providing design implications of how future technology can support volunteer acknowledgment activity.

2   RELATED WORK

This study aims to explore the experiences with acknowledgment from both volunteers' and community members' perspectives. The acknowledgment activity may help raise awareness of the non-profit groups, and engage community members in actively producing public goods. In this section, we discuss prior work that the study is built on from two aspects, raising awareness in the community and enhancing task-oriented community engagement.

2.1   Technology designs to raise awareness in local community

In the field of HCI, researchers have investigated various ways to support community development including increasing visibility of meaningful places [54], memories [29], and emerging community issues [3, 17, 20, 58]. For instance, Han et al. [28] used a prototype *Local News Chatter* to invite community members to read the local news, and investigated participants' willingness to distribute news on other online platforms. Community members chose to explore news that was less salient as they intend to become more knowledgeable about their local communities. Similarly, *MoveMeant* allowed participants to view aggregated local community movement data, which helped local community members to make sense of places based on movement traffic [54]. The high-traffic spaces enticed community members into learning more about unfamiliar community spaces [54]. *Lost State College* was a walking tour application that engaged local community members to reflect on personal experiences in the local community and co-create local history of places [29]. *PosterVote* was a voting prototype to collect community members' opinions on social issues [58]. These studies presented the potentials of using designs to raise awareness and help community members to learn about different aspects of communities. The goal of this study aligns with previous studies' which is to raise awareness of community information. This study expands the context to the non-profit groups in the local communities, because their work can benefit everyone in the local communities, but many groups have a lack of visibility which may hinder their recruitment [8] and reaching out to people in need.

Studies examined approaches that non-profit groups currently use to increase the visibility the groups. For instance, non-profit groups leveraged online platforms, such as social

media and emails, to raise awareness and share updates [16, 41, 44]. However, non-profit groups faced challenges in utilizing these digital platforms. They were concerned that the information has not been efficiently used [26]. Specifically, many groups distributed newsletters through emails, but they were not certain about the number of people who opened and read them. The groups also had challenges in effectively engaging different types of audiences [39]. These studies revealed that non-profit groups put effort into raising awareness of their groups' existence and impact, but still faced challenges to increase their visibility. The non-profit groups' uncertainty of whether community members opened or read the newsletters is due to the one-way street communication, which inspired us to explore an approach that allows non-profit groups to receive visible feedback from community members and turn the one-way communication into two-way communication.

2.2　Enhancing task-based community engagement

Besides having more knowledge about their communities, community members can also take action and produce public goods. One main approach to contribute is through volunteering. Volunteers are essential for non-profit groups to sustain their work and make an impact in the community.

Many studies investigated the designs to help ease the challenges of non-profit groups from the aspects of volunteer recruitment, management, and adherence [7, 13, 32, 52]. Kapsammer et al. pointed out the insufficiency of the volunteer management system such as a lack of matching automation, long-term participation incentives, as well as personalization [35]. Carroll et al. suggested an integration system for non-profit groups and the local time banking to ease the process of volunteering seeking, assure the service quality, as well as simplify time coordination [12]. *iVolunteer* was proposed to assist volunteer scheduling, task assignment, and other coordination. The proposed design incorporated gamification as well as personalized recommendations [35]. Jackson et al. used pop-up messages to inform volunteers if they were the first contributors [32]. This strategy motivated online volunteers to contribute to online citizen science projects [32]. Liao et al. examined different types of volunteers in offline grassroots projects and provided design implications to support regular and episodic volunteers' work [40]. Thomas et al. suggested strategies to better provide volunteers with clear expectations before joining a non-profit group to support the recruitment [56]. Specifically, designs should help potential volunteers to understand the impact that they could have as a volunteer

[56]. These studies provided insights for using systems to support volunteer management and recruitment from the organizational perspectives, pointing out what systems and non-profit groups can do to improve and sustain volunteers' participation for virtual and offline groups.

Moreover, previous studies presented the value of acknowledgment to current and potential volunteers. For instance, factors that influence college students' choices of volunteers include visibility and impact [59]. Volunteers like to see that their work has an impact on a larger population, which helps them feel a sense of fulfillment from their work [59]. Thus, acknowledging the potential impact of the volunteers may be important in volunteer recruitment [56]. Giving acknowledgment to volunteers is also associated with sustained participation [22, 33, 51, 60]. Similarly, acknowledgments are also beneficial to volunteers in the online community such as among Wikipedia editors [22]. Similar effects transfer to the online context that receiving acknowledgment can help to improve the retention rate [22]. Providing online volunteers opportunities to connect with others can also encourage future contribution [21]. Recognizing contributions among the selected groups of volunteers may motivate participation more compared to public recognition on large-scale distributed online volunteer platforms [10]. Giving employees opportunities to appreciate others' work can also help increase the visibility of work within a company [37]. Studies that explored the effect of volunteer acknowledgment focused on types of acknowledgment from within the non-profit groups, such as verbal feedback from volunteer coordinators, as well as souvenirs and certifications from the non-profit groups [34]. These designs and implications considered non-profit groups and volunteers as the main stakeholders in the acknowledgment.

Systems have been created to turn community members into public service providers by building connections and supporting collaboration. For instance, *With share* was a mobile application that enabled community collaboration where people can organize task exchange sessions within the local community [14]. This application helped community members to establish weak social ties while strengthening existing social ties [14]. Similarly, *Foodsharing.de* and its Facebook group were designed to encourage food sharing in the local community to avoid wastes [23]. These studies illustrated the potentials of engaging community members to support services and goods exchange. Connecting with others and donating resources are both helpful ways to include community members to produce public goods. These studies encouraged us to explore a different activity that community members can also actively participate

as stakeholders. We utilized giving acknowledgment as an activity to engage community members. While previous work explored approaches that considered non-profit groups and volunteers as the main stakeholders in the acknowledgment, we also included community members as stakeholders in the acknowledgment activity. We aimed to further understand if and how giving acknowledgment could have an impact on community members.

3   METHOD

3.1   Thank-you stations

We set up workstations in the local community to invite the community members to write thank- you cards to volunteers in the non-profit groups. We used these stations as design probes to evoke volunteers and community members to talk about experiences with the acknowledgment activity. Design probes are common approaches to explore the opportunities for technology designs to support experiences or interactions [25, 30]. We utilized the workstations to explore how technologies can improve experiences with acknowledgment. We chose to use thank-you cards, because they are accessible without any device ownership requirement. Writing thank-you cards might also be a familiar activity to many people, thus the activity may be straightforward to complete. Additionally, workstations and cards are tangible artifacts that are more visible to generate interactions and collaborations [36, 47].

We refer to these workstations as thank-you stations. The stations had several components: a monitor, a group description sheet, thank-you cards, instruction sheet, collection box, IRB, and pens. Figure 1 presents a photo of a thank-you station. The monitor was used to present volunteer activity photos of a few selected volunteer groups. The groups covered several non-profit causes including environmental, medical, wildlife, mental health, as well as festival celebrations. We intentionally chose the photos of volunteers in action to present a genuine image of their day-to-day work. For instance, one of the photos presented that senior volunteers were collecting water samples from the water streams. These photos were only examples of volunteer groups that community members can choose from. Community members were free to write to any groups that they'd like to. We also provided a short description of each group to show more context of the groups' work. Free thank-you cards were left at the stations for community members to use. The instruction sheet presented guides to participate in the activity. We asked participants to select and write thank-you cards to non-profit groups, and drop the cards in a collection box. The collection box was a cardboard box

to collect thank-you cards at the stations. The project has been reviewed by the IRB review board. To follow the protocols, we included a one-page project explanation and participation requirement at the thank-you stations. For instance, we explicitly mentioned that all participants needed to be at least 18-year-old. We also informed the participants that their thank-you cards will be posted on a publicly accessible website.

To find the space for the stations, we reached out and collaborated with local community spaces such as community centers. We set up two workstations in two community centers for two months. The centers provided monitors for the stations. To attract participants, we asked permission from the community space managers and leaders of non-profit groups to send out promotional emails about the stations. To engage more community members, we also set one up at a community Christmas party. We aimed to design the station to be self-serving, and two out of three stations were not monitored by researchers. For those stations, researchers visited the stations weekly to collect, scan, and upload the thank-you cards to a publicly accessible website. We eliminated identifiable information such as names on the cards to follow the IRB protocols. The station at a Christmas party was monitored by the researcher. The researcher introduced the thank-you stations and invited party attendees to participate.

3.2   Data Collection and Analysis

We used two sources of data in this study, namely the interviews and the thank-you cards. Firstly, we interviewed two types of stakeholders involved in this activity to understand their experiences: ten non-profit volunteer members representing six non-profit groups, and four community members. Among six non-profit groups, three of their groups received thank-you cards. The other three did not receive thank-you cards from the stations, but we interviewed them to diversify the non-profit groups' types. We recruited the volunteers through direct contact and snowball sampling. Among four community members, two of the community members wrote thank you cards. The other two heard about the stations and explored the thank-you station website. We recruited the community members who wrote thank-you cards from the station at the Christmas party. We were not able to recruit any participants from the stations that were not monitored, because we did not collect any contact information to follow the IRB protocols. Through the community space leaders, we were able to connect with two community members who heard about the stations. The other source of data was from the thank-you cards. We analyzed the texts

on thank-you cards to understand the content of the thank-you cards and how the community members chose groups to appreciate.
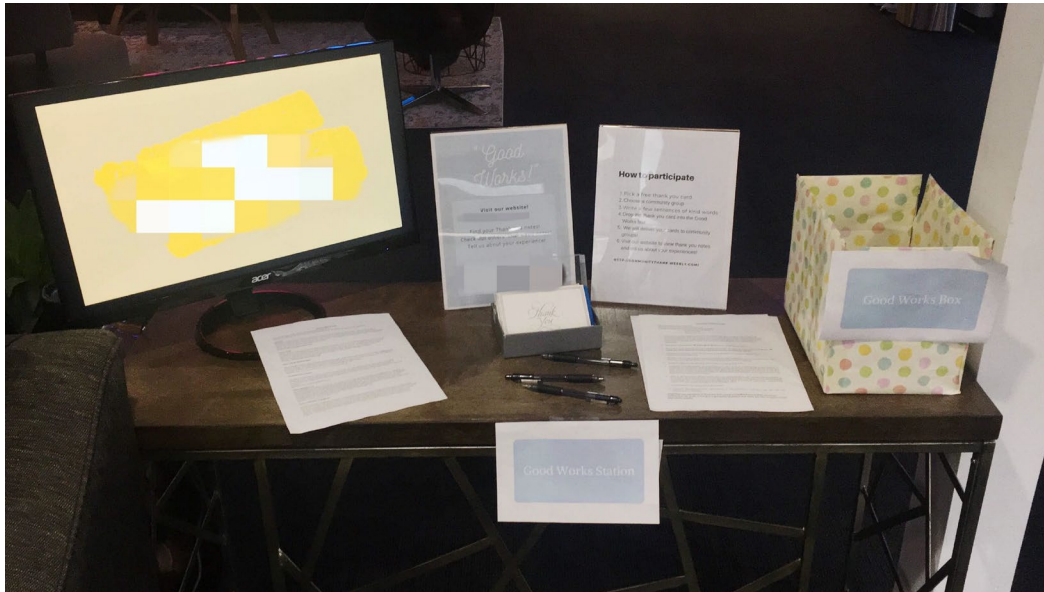

Fig. 1. Photo of a thank-you station.

We conducted 11 interviews through phone calls or Zoom and three through in-person interviews. During the interviews, we asked volunteers questions about what they thought of receiving acknowledgment and the thank-you stations. For community members, we asked about their impressions of the stations, the website, and the thank-you card writing activity. All the interviews were audio-recorded and transcribed. Due to the exploratory nature of the project, two researchers conducted an inductive thematic analysis using an iterative coding approach [9]. We first read the interview transcripts and the thank-you cards to gain a general understanding of the contexts. We then coded all transcripts and thank-you cards for any quotes that were related to the research questions. We analyzed and organized the quotes to generate the initial themes. We further analyzed the quotes to ensure they fit in each theme as well as the overarching themes. Finally, we defined each theme and its meaning, as well as selected examples from each theme as quotes to present in the finding section. We included the coding themes, descriptions of the themes, and code examples in table 1. We quoted volunteers' interviews with identifiers VXX, community members' interviews with CX, and thank-you cards

with TXX.

	Theme	Descriptions	Code (examples)
with ment	Volunteers' experiences acknowledg	Volunteers' previous experiences with receiving acknowledgment	Received acknowledgment from individuals and groups
of	Volunteers' impressions reacted thank-you stations	How volunteers reacted to thank-you stations	Appreciated cards from outside of the groups; Helped to increase visibility
usage	Volunteers' of thank-you cards	How volunteers intended to use the thank-you cards	Store and reread cards in the future share with other volunteers and publicize in the community
with	Community members' experiences the thank-you stations	How community members reacted to thank-you stations	Learned something about non-profit groups; Considered future participation
cards	Content of in thank-you	Types of information the thank-you cards; Thoughts about hand-written format	Acknowledged the groups' general impact reflected on personal experience indicated an interest in future contribution; Hand-written form is more authentic.

Table 1. Coding themes, descriptions, and examples

4   RESULTS

We presented the findings from two perspectives, namely volunteers and community members. From volunteers' perspectives, we report their previous experiences with acknowledgment, experiences with the thank-you stations, and the usages of the thank-you cards. We found that volunteers received various types of acknowledgment previously, but receiving thank-you cards from the thank-you stations was novel to them. They enjoyed receiving acknowledgment from community members who might not be their clients. They believed that the stations could help them increase their visibility in the community. Also, they intended to distribute and publicize them within and outside of their groups, as well as preserve and reuse the cards in the future. From the community members' perspective, we report their experiences with the thank-you stations, and how they wrote thank-you cards. All community members expanded their knowledge of local non-profit groups by interacting with the thank-you stations or the website.

They felt more proud and confident in their local community, and expressed an interest in contributing to these groups in the future. Finally, both the volunteers and the community members enjoyed the authenticity that the tangible thank-you cards illustrated.

In the following sections, we start from the volunteers' perspectives on receiving acknowledgment and their experiences with the thank-you stations. Then we report from the community members' perspectives on their experiences with the stations.

4.1 Volunteers' experiences

4.1.1 Previous experiences with acknowledgments. During the interviews, we asked the volunteers about their previous experiences with receiving acknowledgments to understand if and how the thank-you stations differ from their previous experiences. Similar to previous research, we found that receiving acknowledgment was rewarding for the volunteers. The acknowledgment was a form of compensation that helped them feel fulfilled. For instance, the following volunteer (V8) said that *"We find them [acknowledgments] rejuvenating. Those appreciations compensate us with the energy there."*

Similar to previous studies that investigated the types of volunteer acknowledgment [34, 48], we found that volunteers received acknowledgment from both individuals and organizations. From individuals, they received verbal appreciations, phone calls, or thank-you cards. For instance, a volunteer (V3) enjoyed receiving verbal appreciation after leading a bird watching tour, *"We go for a walk on the trail. Generally, I say to them, 'thanks for coming out this morning'. And they say 'Thank you. That was really fun. That was really great.'"*

A group that prepares and delivers meals to community members routinely received thank-you phone calls from a client. The volunteer (V8) enjoyed them, and even transcribed them to preserve and share with others, *"We have one gentleman who calls at least once a week and leaves voicemails. I have a student volunteer transcribe his phone calls so that we are able to share."*

A few groups also received thank-you cards previously. Volunteers enjoyed receiving thank-you cards directly from their clients. They especially liked when service details were mentioned in the cards. These details made the appreciation more genuine and personal, *"The reason I remember this one is because it was really specific. It talks about a specific thing that we helped them through. It really makes me feel connected to that person. I feel like it makes it more meaningful." - V5*

Besides these direct appreciation acknowledgments that previous studies have explored [34], we found that volunteers also perceived inquiries, client participation, and volunteer engagement as forms of acknowledgment. Volunteers sometimes encountered others who asked about their involvement with the volunteer group. They appreciated others' curiosity and interest in their work, and considered these casual encounters as a form of acknowledgment. For instance, a volunteer's (V1) neighbors knew about the volunteer's hobby and asked them questions about it. The volunteer appreciated the inquiries from their neighbor, and considered that as a type of acknowledgment. Also, when the volunteer was observing birds in nature, some tourists in the area saw and approached them. The volunteer was excited to share their bird-watching experiences, and would love to spark others' interests in bird watching, *"Very often tourists will just show up, because they're interested in what we're doing and why we're so crazy out there in the cold. It's fun. That's a good feeling. You may have some little kid start watching birds."*

Volunteers also considered client participation as acknowledgments. This specifically applied to the groups who directly interact with people for their work such as meal delivery and suicide hotline. Volunteers thought that client participant was an indication of trust. Clients trusted them to show their vulnerability, and believed that the services would be helpful. For instance, the following volunteer (V5) worked in a group that provides a suicide hotline and other counseling services. They elaborated on how they appreciated their clients for reaching out to them, *"I know that that takes a lot of courage, strength, and time. And I think that it's important to let them know that we appreciate them coming to ask for help. That shows that they trust us."* In addition, future volunteer engagement was a form of acknowledgment for the volunteers. One great way to show support to a volunteer group is through volunteering. Current volunteers perceived volunteer engagement as a way to reassure the value of their work, because people would put time and effort into the services that are valuable to them.

Besides individuals' acknowledgment, volunteers received organizational acknowledgment as well. The volunteers enjoyed being included in local publications. They also valued collaboration opportunities with related groups, as well as being included in community issue discussions. For instance, the following volunteer (V4) said that, *"Another source of acknowledgment is that other organizations think about connecting with us. when there's*

an issue in the county, we will frequently be contacted and get involved.".

4.1.2 *Experiences with the thank-you stations.* Although volunteers had experiences with various forms of acknowledgment, all of them reacted positively to the thank-you stations. Receiving acknowledgment from the thank-you stations was novel to them. It differed from receiving acknowledgment from within the non-profit groups. Our thank-you stations allowed volunteers to hear from community members whom they may be unfamiliar with. The volunteers felt that they didn't provide any services to the thank-you card writers, and this form of acknowledgment was not reciprocal for them. For instance, the following volunteer (V3) explicitly called out on the novelty of the thank-you station *"So there are social norms that you would expect people to say thank you for what you do for them. It's transactional. So in this case of unsolicited thank you cards, I would just say that the novelty is that maybe it seems to be random acts of kindness.".* Similarly, the following volunteer (V5) felt that they did not directly provide any services. They felt that the thank-you card writers were doing a good deed to show appreciation, *"Maybe we didn't directly help them. But they're thanking us for the help that we do for the community. And that's so special. I think it's them showing their separate kindness."*

Additionally, the volunteers believed that the thank-you stations may help them increase the visibility of their groups. For groups that seek to expand the size of the group, visibility is especially important. Many groups that we interviewed were content of their current size, and did not intend to increase the number of the members rapidly. These groups still valued visibility, as they would like to make a greater impact on the local community. For example, the following volunteer (V3) elaborated on his perspectives on the thank-you stations and group visibility, *"One thing we have a hard time with our club is finding a better way to promote ourselves and reach the community. If more people are aware of the group and what we do, people can become more involved in it. That [the stations] might become a neat way to reach out to people.".*

Moreover, the volunteers believed that receiving acknowledgment from someone who was not involved in the group was a piece of evidence that the group was becoming more visible. For example, the following volunteer (V9) mentioned that *"It might be kind of neat to know that more people in the communities were aware of what our group does versus just getting an acknowledgment from your people within your club."*

The volunteers believed that increasing group visibility was mutually beneficial for the groups and the community members who learned about the group. For instance, the following volunteer (V9) pointed out that they would benefit from the visibility. Also, it would be beneficial for the community members, because it would be an educational opportunity for the community to learn about the local environment. More people may understand the need to sustain the volunteer work, and they may get involved in the work, which would eventually benefit the community in the long term, *"It makes me happy knowing more and more people are becoming interested in birds. They're more aware of protecting the woods and open areas. It helps educate more people."*.

Besides increasing the groups' visibility, we found that the volunteers wanted to use the acknowledgment to make a greater impact by distributing them within the groups, preserving them for future use, and publicizing them in the local community. Firstly, the volunteers would like to showcase thank-you cards within the groups to appreciate all volunteers, even if the thank-you cards were addressed to one targeted individual. Many volunteers emphasized that all individuals contributed hard work in the group. However, some volunteers served in more visible roles, such as cooks in meal services, or doctors in the medical services. Other volunteers who were in less visible positions, such as janitors, also made an impact. The volunteers wanted to distribute the thank-you cards to make all volunteers in the group feel appreciated. For instance, the following volunteer (V8) mentioned that, *"For the janitor, how often does he get thanked? You might have been helped by a counselor, but there's a whole support system built around them that deserves recognition as well."* The volunteers appreciated the easily preservable form of a physical thank-you card as well. They felt that it was more personal, and it revealed the effort that the card writers put in to appreciate the volunteers. For example, the following volunteer (V6) mentioned that, *"I think that they just provide an extra personal touch. People had to make extra effort to go to a location to actually leave the thank you note."*.

Having a physical artifact to preserve and look back to was valuable to volunteers as well. These thank-you cards were considered as something that they could keep for a long time and always go back to. For instance, a volunteer (V9) mentioned that they would display the thank-you cards in the office where everyone could see it, *"I think it's a nice idea, because it's easy to keep, save, and look at it again. It's a nice idea to have as a keepsake."*

Finally, the volunteers wanted to publicize the acknowledgment outside of the groups. Thank-you cards were considered as positive confirmation from the community. The volunteers wanted to use them as evidence of their value to attract future participants. For instance, the following volunteer (V3) elaborated on what set the thank-you stations apart from acknowledgment from previous encounters, *"I think you can say to people that our group is valuable, and you should be an active member. Here [the acknowledgment] is a data point that says that the community does appreciate it. Because here's someone that you don't know recognizes that. "*

4.2   Community members' experiences

4.2.1   Learning about and contributing to the community. Community members enjoyed exploring the thank-you stations as well as writing thank-you cards. They liked thinking about gratitude, learned about public services in the community, and expressed interest in making contributions in the future.

Firstly, the community members enjoyed the activity of thinking about gratitude. It helped the community members to sustain a positive mindset. For instance, the following community member (C1) elaborated on why gratitude was helpful to them, *"Finding points of gratitude can turn the negative mindset around and make it positive from a mental health perspective. So to find things to be*

thankful for, and to tangibly write that down in some format, and then have a destination for that is nice." This echos the findings in previous research that daily gratitude reflection is associated with positive effects on physical and mental well-being [18].

Additionally, all community members learned something new about the non-profit groups, which was an indicator of increased visibility for the groups. The community members who were familiar with volunteer groups felt the stations concretized the work and the impact of the groups. For instance, the following community member (C2) felt that they learned more about the day-to-day work that volunteers handled. These details made their work more "real", *"It makes it a little bit more real. For instance, when you see somebody thanking them and talking about all the training, and it really breaks it down into the hourly things that they're doing rather than the yearly group promotions."*

As community members learned more about the community, they felt more confident and proud of the local community. They developed more trust and appreciation towards these local

groups. For example, the following community member expressed that it helped them to recognize the positive efforts made in the local community, as well as how supportive people were to one another, *"It's refreshing. It helps you remember that we're all good people that want to be helpful to each other. It makes me more proud. It makes you realize that there is an infrastructure for helping." - C2*

Finally, the community members expressed an interest in taking actions to utilize and contribute to the local community resources as well. After learning about new volunteer groups, community members became more aware of available resources in the community. They recognized the great resources that they may utilize and refer to others. They also planned to contribute to these groups in the future. For instance, this community member (C3) was looking for non-profit groups to get involved in, and they mentioned the benefit of reading a list of non-profit groups on the thank-you station website, *"Knowing their purpose helps me appreciate them more. Also if a friend is in need of their service or interested in helping out, I can direct them to the local community needed."*

4.2.2   *Contents on the thank-you cards.* We collected 25 thank-you cards from three different thank- you stations. Among these cards, 13 were from the Christmas party, 12 were from the community centers. These thank-you cards were addressed to 15 non-profit groups. Community members wrote thank-you cards for several different reasons including recognizing the impact of the groups, as well as appreciating services based on personal experiences with the groups. Community members used these thank-you cards to express gratitude, show interest in future involvement, and encourage continued contribution.

The majority of the thank-you cards (20 out of 25) were about recognizing the impact of the groups. These cards did not describe personal anecdotes or interactions with these groups. Instead, community members wrote cards to recognize the general contribution and the importance of the groups' work. In these thank-you cards, community members chose groups based on issues that they cared about. For instance, the following thank-you card may be from a community member who deeply cared about the environmental issue. They wrote a card to appreciate an environmental group, *"I've been reading about the increasing pressure that species face in our era – the habitat lost. In such time, know the work you do to care for injured and displaced wildlife is more important than ever." - T24*

The following statement (T22) seems to be from a community member who loved animals.

This card was addressed to a group dedicated to animal care. They used the word "doggos" to mention dogs, which may be an indicator of someone's passion for animals, *"Thank you for working so hard to provide extensive care to the many doggos and kittens each year. You save countless animals from an alternative fate and put smiles on the faces of countless local residents."*.

The community members also chose groups based on reflection of the groups' impact. For instance, the following participant (T17) seemed to be a long-time resident of the community. They remembered the contribution of a group from when they were a child to the present day, *"When I moved here, I was 6 years old. They were the fire company doing great work. . . and now I'm 60+... and you're carrying on the tradition! Thanks for your many hours of training. Responding to emergencies, and selfless help to all!"* Similarly, the following community member (C3) chose to write to a medical group, because they recognized the high expense of their work. In the interview, they appreciated the willingness of medical volunteers to donate their time and skills in a high-cost field, *"I chose the group because of what they do, because I know how expensive health care is here."*

A few community members not only gave general appreciation to groups, but also expressed an interest in contributing in the future. For instance, the following community member (T10) wrote a card to a non-profit group that provides shelters to homeless people, *"I'm planning to help you in the near future, but for now. I just want to say. 'Thanks and keep up the good work!'."*.

Although most of the thank-you card writers gave appreciation based on a general understanding of the non-profit groups, a few community members (five out of 25 cards) mentioned personal interactions with the non-profit groups in the thank-you cards. A few community members received services from these groups, and they appreciated the services that they received. Others heard about services that their friends received. For instance, the following community member (T15) received help from a group and felt grateful for the staff, *"Thank you for always being there for me and helping me along the way. Thanks again for everything that you do not only for me, but for everyone as well."*. Similarly, the following community member (T20) served as a volunteer in the past. They looked back to the time serving with the group, and appreciated the group's persistent contribution, *"I was a volunteer there in the early 90's. My (free!) training was amazing! And benefits me to this*

day. I have a great appreciation for the work you continue to do. You are a huge asset in our community."

Other community members were not service receivers of the non-profit groups, but they have witnessed the impact that the groups had on people that they know of. For instance, the following community member (T19) appreciated the help that their friend received, *"Thank you to the [non- profit group name] that saved my friends' life when she was intoxicated."*. Similarly, a community member (T25) wrote a thank-you card to a group dedicated to cancer fund support. The community member witnessed the impact of the work on others as a social worker. They not only showed gratitude towards this group, but also encouraged the group for continued contribution, *"I am a social worker and have witnessed the benefit, relief, and support you have provided to many. Keep up the good work!"*

The community members enjoyed the written format of the acknowledgment. This format illustrated genuineness, and easily showed that these cards were written by different people instead of generated by algorithms. Community members appreciated the authenticity that handwriting can convey. They also enjoyed reading the written thank-you cards as they could decode different personal styles. For instance, the following community member (C2) enjoyed reading through different handwriting styles, *"So I can analyze writing handwriting. You see different personalities."* Some community members suggested also carrying over the thank-you station into a digital format. They assumed that handwritten cards may be more attractive to the older population, and the commuting time to the stations could cause barriers to participation. For instance, the following community member (C1) mentioned that *"They're tangible and in one place, rather than when it's electronic, it's easier to submit the information and collate it. It also takes on the idea of a certain population of people, as far as the generation who are used to handwritten notes. I don't know that this current generation of college students, how many of them are used to handwritten notes. The handwritten ones are really nice, but I don't know how many people are used to it."*

5   DISCUSSION AND DESIGN IMPLICATION

We found that volunteers experienced different types of acknowledgment previously. Some were from individuals or clients within the groups, others were from organizations that collaborated with them. Moreover, we identified several benefits of thank-you stations for different stakeholders in the community. Firstly, it brought volunteers a novel experience of receiving

acknowledgment from community members without previous interaction. The volunteers felt that it helped them reach more community members, increase their work's visibility, and validate their work's value. Secondly, it helped community members expand knowledge about the non-profit services in the local community, provided opportunities for future contribution, and felt more confident and proud of the local communities.

These findings have several implications including 1) engaging community members in volunteer acknowledgment can transform them from non-profit services' beneficiaries into service providers, and the transformation helped to generate a synergy of good deeds, 2) the tangible form of acknowledgment was perceived as more authentic, which was a desired characteristic of acknowledgments, 3) there is a need to use the acknowledgments to make a greater impact by publicizing and reusing the acknowledgments. In the following sections, we discuss these implications in detail and provide design implications to improve future community engagement technology.

5.1   Generating a synergy of good deeds

This study illustrated that the acknowledgment activity created two-way communication among stakeholders in the community. It helps to generate a synergy which is an efficient way to circulate good deeds. The circulation started from engaging the community members and transforming them from public service beneficiaries to service providers. By giving acknowledgment, the effects of community members' good deeds were circulated to the volunteers, because the acknowledgment helped the volunteers to understand that others have noticed their work and appreciated them. They felt more visible, appreciated, and fulfilled, which may motivate them to sustain their work [33, 51, 60]. In the meantime, it also helped the community members learn about the non-profit services and motivated them to contribute in the future. Thus, the social goods were circulated to other community members who did not participate in the acknowledgment process. More public services may be generated as more community members intend to contribute to these non-profit groups. The circulation of good deeds became multiplicative, because the action of the community remembers initiated the social good circulation that benefited themselves, the volunteers, and others in the community.

Our study identified benefits of volunteer acknowledgment that aligned with the previous studies. For instance, the acknowledgments helped the volunteers to recognize

their impact and feel rewarded for their services [35, 51, 59]. The volunteer acknowledgments that previous studies investigated were mainly reciprocal service exchange. While volunteers contributed services, in exchange, there would be appreciation and recognition from within the volunteer groups such as verbal appreciation, souvenirs, and certification among others [34]. Expanding on the previous literature, our study explored how including community members in volunteer acknowledgment can produce multiplicative services and circulate social goods to not only the volunteers, but also the community members. The effects of the acknowledgment illustrated how synergistic social goods can be co-produced by volunteers and community members [46]. This form of acknowledgment could be an additional way to consider supporting non-profit groups' work in local communities. Our study explored a different type of interaction between volunteers and community members and helped community members understand the day-to-day work of volunteers. Different from the approach suggested in [10], we found that inviting community members to give acknowledgment helped volunteers feel fulfilled, gain a piece of evidence to showcase their impact, as well as understand their work has become more visible. Although our study was situated in offline spaces, our findings could also support online large-scale volunteers to increase their visibility by engaging people who benefit from the work to learn about and acknowledge volunteers' work. Previous studies have explored how to motivate online large-scale volunteers, such as Wikipedia editors and online reviewers, to contribute to the online platforms [22, 50]. In online large-scale volunteer communities, volunteers' contributions are often invisible, especially for people outside of the volunteer community. They do not understand the expertise involved, which makes it difficult to appreciate volunteers' work. One study suggests that recognizing contributions among the insiders who understand the expertise and efforts may be more helpful compared to a public recognition [10]. These challenges are analogous to the dilemma that non-profit groups in the offline community are confronting. Based on our study results, we argue receiving acknowledgment may also help maintain or even boost the retention rate for online volunteers [22]. Future designs should help organize volunteer acknowledgment from both within and outside of non-profit groups. Designs can consider drawing community members in the acknowledgment process and attracting community members to take part in the public services with little commitment. More forms of volunteer acknowledgment can be provided to community members, and they can be invited to learn about and appreciate the public services. This

implication may be applicable for virtual volunteers as well. For instance, we could provide Wikipedia users an opportunity to appreciate the editors. However, future work is needed to understand how to implement such interaction.

5.2 Authenticity as a valued characteristic

This study also indicated that the physical forms of hand-written notes revealed a sense of authenticity, which is important in the acknowledgment. Volunteers felt that the appreciation was genuine, because they could directly see the effort that each community member put into commuting to the stations and writing the cards. The uniqueness of different handwriting styles can also easily reveal that the cards were written by multiple individuals as opposed to machine-generated content. The uniqueness made these cards more personal and helped the readers to recognize other community members' involvement in the acknowledgment. It may help to make the social good circulation more salient to the participants, because the number of people who were involved can be easily revealed. Our participants enjoyed the hand-written format of the thank-you cards, because it was authentic, personal, and meaningful.

Our work echos the findings from previous studies, where authenticity is valued in various contexts. For instance, being inauthentic on online platforms may jeopardize social connections. Being authentic on social media platforms such as Facebook is associated with being more likely to reveal emotions [53] and connect with others [42]. Social media can support authentic self- presentation [55]. Concerns exist for inauthentic online reviews, where algorithms are designed to differentiate the authentic and fake reviews [6]. People also rely on existing social networks to validate product information due to concerns about authenticity in the marketing [57]. Previous studies revealed authenticity's effects on online socialization and product marketing. We expanded the understanding of authenticity's effects in the context of a pro-social activity. We want to highlight that authenticity is a valued characteristic of acknowledgment, and it should be carried over into different forms of acknowledgments including digital platforms to create more meaningful experiences. We argue that future designs should leverage the characteristics of authenticity when designing systems for acknowledgment. Future designs should consider features that make effort and personal traits salient to the acknowledgment readers, whether it is in a physical or a virtual format.

5.3 Supporting the usages of acknowledgments

We found that non-profit groups intended to use acknowledgments to a fuller extent by

distributing them within the groups, preserving them for future use, and publicizing them in the local community. Firstly, we found that volunteer coordinators had the desire to better distribute the thank-you cards to all volunteers including the less visible volunteers. They would like all volunteers to feel appreciated, not just the ones directly being addressed in the cards. Secondly, the volunteers intended to preserve acknowledgment in the long-term, and read these cards in the future. Thirdly, the volunteers wanted to publicize the acknowledgments in the local community. The volunteers perceived these acknowledgments as reassurance from the community to show the value and impact that the groups had. Publicizing them in the community may motivate more donation or volunteer participation.

Previous studies presented the use of acknowledgment to increase volunteers' satisfaction and sustain participation [31, 33, 51, 60]. For instance, non-profit groups should show how volunteers' work can contribute to science in the recruitment message [38]. Also, technology should help volunteers to track their work and contribution, as well as visualize their impact [59]. These forms of acknowledgment were associated with satisfying recruitment and volunteer experiences.

Previous studies provided insights on how acknowledgment influenced the attitudes or behaviors of individual volunteers. Expanding on previous research, our study presented nuanced ways to use acknowledgments from a non-profit groups' perspective. The volunteers would not just look at the acknowledgments and move on to their work. Instead, they would like to distribute, preserve, and publicize the acknowledgment to help more volunteers feel appreciated, reflect on the value of their work in the future, and prove the groups' value to support volunteer recruitment.

These findings indicated that designers and researchers should be aware that the volunteers may take further actions to distribute and publicize acknowledgments as well as reuse them in the future. Firstly, researchers and designers need to be aware that acknowledgments are not distributed only to the targeted individuals who are directly addressed. It is likely that the acknowledgments will be shared among other members of the groups. Secondly, future designs should allow volunteers to store and reuse the acknowledgments. Thirdly, designs should support non-profit groups to raise awareness of the acknowledgment outside of the groups.

6   LIMITATION AND FUTURE WORK

This study investigated how engaging community members in volunteer acknowledgment

works in a local community situated in a town in the U.S. Future studies can examine how engaging community members in volunteer acknowledgment may have an impact in different types of communities and cultures. For instance, future studies can further understand how acknowledgment from users may influence the experiences of Wikipedia users and editors. In addition, we found that authenticity is a valued characteristic of acknowledgments. It was out of the scope of this study to develop implications for how authenticity should be established. This presents an opportunity for future studies to investigate what authenticity means in the acknowledgment context, as well as how to enhance it. Moreover, we found that the volunteers intended to distribute, reuse, and publicize the acknowledgments, and we suggest that future designs should support these usages. We did not investigate how to support these different usages. Future studies can examine how to support non-profit groups to use the acknowledgments to make a greater impact. Finally, we recognized that the reactions to the stations were all positive, as the activity was designed to bring positive effects to all stakeholders. Potential negative effects could have been overlooked. For instance, a moderator may be helpful to read through the thank-you cards before making them publicly available to avoid disrespectful content being released to the public.

7   CONCLUSION

Previous studies have investigated approaches to support non-profit groups to improve volunteers' retention and satisfaction by providing acknowledgment within the groups. Expanding on the previous work, we used a tangible and accessible design probe to engage community members in the volunteer acknowledgment. We utilized the thank-you stations to understand possible ways to use technologies to support the acknowledgment activity among volunteers and community members. We conducted 14 interviews with users of the design probe. We found that engaging community members in the acknowledgment process helped to circulate public services in the local community. The benefits from the acknowledgment activity became multiplicative and influenced both the volunteers and the community members. We also found that authenticity was a valued characteristic of acknowledgment, and the non-profit groups intended to distribute, reuse, as well as publicize the acknowledgment to make a greater impact. The findings revealed that designs should consider engaging community members and enhancing the authenticity of the acknowledgment. Additionally, designers and researchers should be aware that the use of acknowledgment does not stop at delivering it to a targeted

recipient. The volunteers intended to publicize and reuse the acknowledgment in the future. We contributed to the HCI and CSCW community by presenting how engaging community members influences the acknowledgment experiences from different stakeholders, expanding the knowledge on the value of authenticity in a pro-social activity and the need to utilize acknowledgment, as well as providing design opportunities of how future designs should support volunteer acknowledgment.

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