Retiree Volunteerism: Automating "Word of Mouth" Communication

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Many retired people gain self-actualization by seeking volunteer opportunities as a means to give back to their communities, stay physically and intellectually active, and build and expand their social networks. Our grounded theory research revealed though that they typically avoid searching for volunteer opportunities through relevant websites and connecting via social media due to a lack of trust in those tools and their concern to protect their privacy. Instead, they rely on word-of-communication, often facilitated with an email with individuals and organizations they trust. To support this type of communication, both for retirees and organizations seeking volunteers, our team has proposed an automated interaction mechanism for secure emailing of interactive, content-rich visual newsletters with the searching/viewing process being aided by recommender system technology. . The application would facilitate online creation of user-defined activity-preference based communities and allow users to view and add new peers and events to each peer group, as well as create and join new peer groups, but with privacy controls that do not reveal personal email addresses or personally-identifiable information. The next step in our research is an experiment with three variants of our interaction mechanism to determine what balance of privacy and community connectivity retirees would prefer.

1 GENERAL INTRODUCTION

The motivation of our research team was to propose a decision support mechanism for the decisions retirees make when finding and participating in volunteer opportunities. In our first study, our research group interviewed retirees and near-retirees to uncover the processes involved in finding and assimilating into volunteer roles. More specifically, we aimed to discover what compels them to volunteer, how volunteer opportunities are found and shared within their communities, and the extent to which volunteering is a social process and a factor in self-actualization. Our research team conducted Grounded Theory interviews with six retirees representing four different lifestyles to understand their decisions about volunteering (see Appendix A1 for participant demographics). We chose to use Grounded Theory as our data collection methodology to better understand the key factors that motivate retirees to volunteer initially, than to assimilate into the role they choose, and then how they may prefer to elicit others in their social circle to join them

in volunteering, Our expectations were that the decision of whether to volunteer in retirement and the role the retiree would take on would be highly personal for each individual. We anticipated that some retirees would view retirement as an escape from the working world and not be interested in volunteering while others would embrace volunteerism as a way to stay engaged, support community organizations they deem valuable, and build new social connections. We expected they would rely on web sources such as VolunteerMatch, the AARP Volunteering platform, or volunteer recommendations in city and county publicity or newcomer websites. We further expected they would gravitate to volunteer roles that reflected their professional careers and prefer a routine similar to their previous work life but less demanding and with less stress but with the source of satisfaction in "giving back" to a mission, they find worthwhile. The two most significant findings in analyzing those interviews are that retirees typically do not use automated tools to find research opportunities, relying instead on "word of mouth" from acquaintances, internal email newsletters, and their knowledge of their community's needs and secondly, once they engage in a volunteer role, they prefer to personalize their experience in a way that provides them self-actualization on their own terms. In some instances, they personalize that role to reflect their careers prior to retirement but in many instances personalize it to do something completely different. Once in their role, they often become enthusiastic about sharing their experience with their acquaintances and encouraging them to join them in a volunteer-centered social network but are protective of their privacy and the privacy of peers they might contact to join them in volunteering.

These findings informed our design goal to devise an interaction mechanism that facilitates this outreach approach by building on existing volunteer opportunity email newsletters with the addition of privacy protections and automated recommender and elicitation capabilities. We designed an email-based Personal Community Volunteer System(PCVS) to allow volunteers to find opportunities to volunteer using a decision support system that incorporates social recommender system principles to incorporate "word of mouth" into recommendations. We designed variants of this mechanism with different levels of community features to balance community interests with privacy interests.

Our research questions were :

(1) How can "word of mouth" recommendations for volunteer opportunities among retirees be best supported by a secured private email mechanism?
(2) Which variant of our mechanism – high community/low privacy, high privacy/low community, or medium privacy/medium community – will retirees prefer to use in pursuing and sharing volunteer opportunities while protecting their privacy and the privacy of others?

Our study 2 investigates these questions with an experiment that will help us understand how the balance of privacy and community affects perceptions of the PCVS.

2 LITERATURE REVIEW OF RELATED WORK AND GAPS

Several prior research papers and textbooks informed our research on retiree volunteerism and the development of our resulting system mechanism and user experiment to test our theory. Constructing grounded theory: A practical guide through qualitative analysis [5] was our guidebook in conducting our grounded theory research and data analysis. In probing the user experience in seeking and reacting to recommendations, our questionnaire contents were influenced by Explaining the user experience of recommender systems [13] with the need to consider the "personal and situational characteristics" of users in reacting to recommendations in general and particular from social-media-based systems that our retirees indicated they are reluctant to trust.

We also considered the implications of choice overload by retirees and if that was a factor in their avoidance of volunteer recommendation websites and were guided by the research described in "Understanding choice overload in recommender systems" [2]. The paper "A reason to rise each morning: The meaning of volunteering in the lives of older adults. [3]" led us to probe the motivation by retirees to volunteer and our finding that they volunteer to stay engaged and intellectually active was echoed often in our interviews. Our evaluation of the degree in which volunteers may be motivated by recommendations from friends and acquaintances was influenced by the need for inspectability and control objective aspects and personal characteristics of familiarity with recommenders and trust levels [11] and "social matching" tendencies of individuals in reacting to recommendations [15].

Our interest in probing the privacy concerns of retirees was motivated by research and recommendations expressed in Privacy Aspects of Recommender Systems [9] and particularly in the context of social media networking in the paper Exacerbating mindless compliance: The danger of justifications during privacy decision making in the context of Facebook applications [1] Also, the design of our experiment was guided by concepts from Evaluating Recommender Systems with User Experiments [11]and our investigation of scale techniques for user questionnaires was influenced by Scale Development Theory and Applications [7]. While we found prior research in the phenomenon of "word of mouth" communication in many contexts, we found none specific to retirees' distrust of social media and the methods they use to find volunteer opportunities. We hope our future research can further explore the nexus of volunteerism, aging, and privacy protection.

3 STUDY 1: USER RESEARCH AND SYSTEM DESIGN

Our team followed the Grounded Theory approach [5] to determine what processes and tools older retired individuals use to find, explore and assimilate themselves into volunteer roles. Grounded theory begins with identification of an appropriate base of research subjects with relevant experience in the area of research interest, crafting an interview process and questions that elicit open conversation about the subject area, and recording of the interviews so transcripts of the entire conversation flow can be analyzed in detail. Analysis begins with a meticulous line-by-line visual inspection process of the consolidated transcripts that identifies codes, which are the keywords that best define and capture the subjects' feedback. These detailed codes are then distilled into subject concepts and categories that lead the researchers to development of theories about the research subjects' motivation and behavior. During the entire process, researchers insert memo notes for documentation of key factors and observations and capture key quotes from the interviewees.

3.1 Participants

We focused our interview selection on three sources – first with current retired volunteers of the Osher Lifelong Learning Institute (OLLI) and then with residents of the Clemson Downs Retirement Community both in Clemson, SC, and then with family members. OLLI is a nationwide membership-based organization with a mission to provide ongoing education programs and interaction events for enrichment as its members grow older, including lecture series, interest groups, and outings. Clemson Downs is a local privately-owned and resident-funded community offering four levels of care for older residents - Independent Living, Assisted Living, Skilled Nursing, and Memory Care. Participants of both organizations tend to be academically oriented due to proximity to Clemson University, so our third source of interviewees was family members of one of our researchers that do not reside in the Clemson area. Through prior research projects and through affiliations with the Clemson University Institute for Engaged Aging, we asked administrators of Clemson Downs to recommend residents who might be interested in our research on retiree volunteerism and for the OLLI executive director to recommend individuals who might agree to be interviewed. For Clemson Downs, the local administrator

arranged interviews and for the candidates suggested through OLLI, we contacted them via email, briefly describing our research project and asking them to participate in an hour-long interview, either in-person or via Zoom. All agreed to be interviewed, three in person and three via Zoom. For the two family relatives, both were interviewed via Zoom. Profiles of each interviewee are in Appendix A2.

3.2 Materials

We conducted our interviews in compliance with the Clemson Institutional Review Board, under an IRB-approved protocol for human-subject protection. Each interviewee reviewed and acknowledged acceptance of the IRB-base consent form and all agreed to having their interview recorded under the privacy protection of the IRB process. The questions were not revealed visually to the interviewee but posed verbally after the protocol was described and consent forms signed and collected. We interviewed individual subjects rather than as a couple or group, and in three of our six interviews we had two of us researchers participate. Our interviews were semi-structured in that we worked from a common list of proposed questions but rather than being a rigid question-answer forum, we allowed the conversation to flow freely and naturally as the subjects shared their experiences and recommendations over exchanges varying from about 30 minutes up to an hour and 15 minutes but most just under one hour. The questions were arranged from general to specific – first gathering introductory information on the individuals' education and work background, then addressing the participants' interest levels and motivations to volunteer, how they found volunteer opportunities, their past and current volunteer activities and how volunteerism can best be promoted and publicized. Our Research Protocol and Questions List document is in Appendix A3.

3.3 Grounded Theory Data Collection and Analysis

The audio recordings of each interview were transcribed using the vendor online transcription tool Temi from Use Rev Support Transcription Services. All lines of each transcript were then loaded into a single shared spreadsheet tool with columns for each of our researchers to individually peruse each line of the interviewees' comments. Adjoining cells for each row of interviewee feedback were then used to derive the code words and to capture our researchers' memo notes and direct quotes. These were then further analyzed to find the most common indicative codes, categories and concepts from the initial codes in each documented line of feedback. This analysis then was used to derive the theories explained in the next session on how retired people learn about volunteer opportunities, decide on which if any they want to pursue, then assimilate into a role that they personalize to their interest and availability and then in many cases encourage others in their community to volunteer likewise. Figure 1 is a brief excerpt from our Grounded Theory collection and analysis repository tool and more detail is shared in the Appendix. The full version of our repository is available on request.

3.4 Results

3.4.1 Qualitative Findings. Through grounded theory we aimed to reach a theory of participation in volunteer activities. We found a number of influences on participation that guided our general theory of participation. Our findings revealed a predominant influence of personal factors, such as personal motivations and interests, interpersonal relationships, and feasibility of participating when volunteers find and recommend volunteer opportunities to others. Our findings highlight the importance of personalized experiences (e.g., concordance with interests, enabling deeper interpersonal connections, enabling autonomy) when volunteers find and recommend volunteer opportunities.

Interview	R1 Codes	R2 Codes	R2 Codes	R3 Codes	Transcribed Interview		Concepts (Actions, Gerunds)	Category (Aggregations of Concepts)	Axial Codes	R1 Memos	R2 Memos	R3 Memos	R4 Memos
INTERVIEW1 - U01					Speaker 1 (00:03:38):								
INTERVIEW1 - U01					Yep. Now, where, where were you doing that? Was that in the Clemson? No, no. Area. Or did you move into Clemson later on?								
INTERVIEW1 - U01					Speaker 2 (00:03:44):								
INTERVIEW1 - U01	volunt eer, teachi ng, admini stratio n			History teachi ng, acade mic admini stratio n, non-pr ofit history, history of moving	I I've lived all over 'em from upstate New York originally, then Colorado, then I took a job teaching in Tennessee at a small liberal arts college. Then I ran a 24 hour hotline volunteers. That was a total volunteer organization. Then I moved to Kentucky where I was associate academic dean at a small, small four year liberal arts college. Then moved to Florida where I this is so boring. But it's it's the story that I have to tell. It's I moved it to community mental health. Now my background is sociology, and so I'm not a counselor, but I worked in the executive staff of this community mental	U01	VOLUNTEERING, TEACHING, ADMINISTERING,	RELATED TO INTERESTS, PARTICIPATION	"participation" more likely in activities "related to interests"		Quote - both U01 and Skip - "word of mouth" - Neither depend on apps to search for vol opportu nities or recomm endation		U01 has a rich history teaching, doing academic admin, and running/v olunteeri ng in non-profi t operation s

Fig. 1. Our top-down Grounded Theory process and the counts of codes and other indicators.
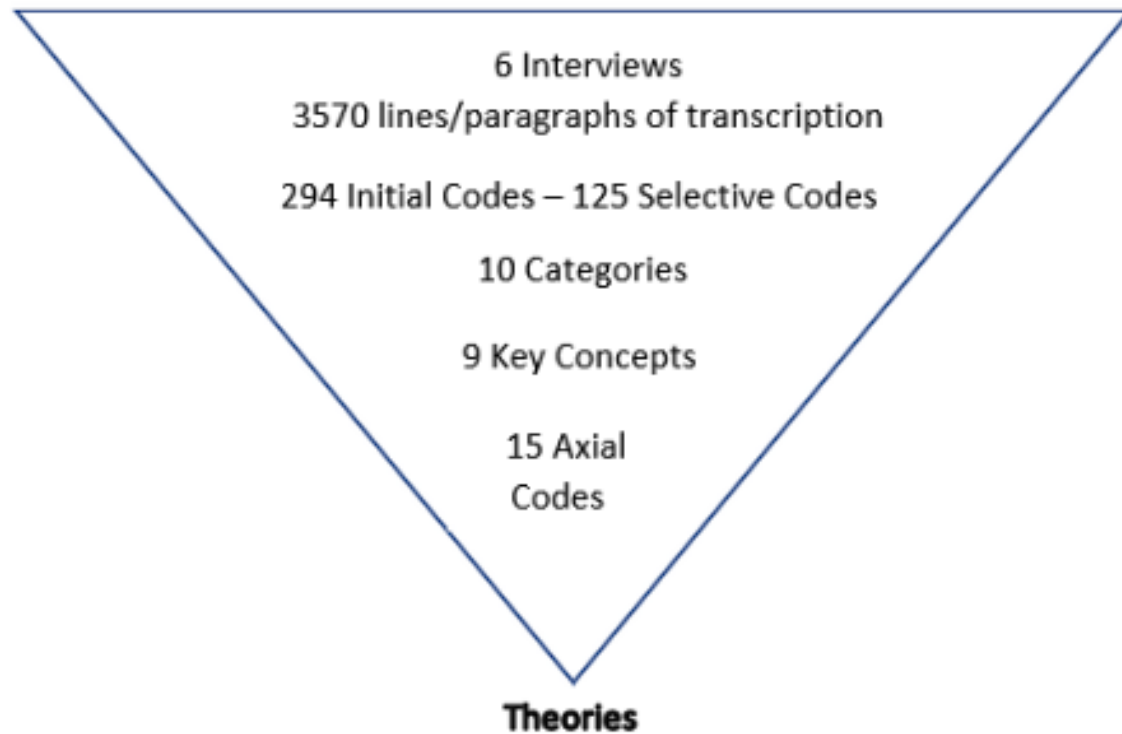

Fig. 2. Grounded Theory process and the counts of codes and other indicators.

Our coding process resulted in numerous codes, which are available in the Appendix (A4, A5) and summarized in Figure 2. Our coding process revealed 9 core concepts - volunteering, teaching, learning, connecting, escaping, staying

relevant, contributing, personalizing experience/self-actualization, socializing community, and commitment. There were many variations of these concepts, but most can be boiled down into those nine concepts. Many of our volunteers were dedicated teachers and volunteers devoted to their missions, while others used volunteering as more of a social outlet. These concepts helped capture the diversity in volunteer preferences.

These concepts were then boiled down into 10 categories, which can be grouped into two main groups related to participation, or the extent to which a volunteer participates in volunteer opportunities. The first group consists of categories related to opportunity-volunteer fit, that is, how good of a fit is the opportunity for the volunteer? This group was composes of the categories related to interests, which captures the degree to which an opportunity relates to an individual's historical or current interests; personal motivations, which describes one's particular motivation for volunteering, whether it be to have an impact, socialize, stay engaged while aging, or escaping; organization culture, which is concerned with the culture and make-up of an organization, both in terms of the individuals; commitment requirements, which describes how much of a time or energy commitment an opportunity is; and feasibility, which describes one's ability to participate in volunteer opportunities, particularly in relation to accessibility considerations such as distance, age-related mobility, finances. The second grouping of categories is related to finding and sharing information about new opportunities, such as organic snowballing, which is an organic domino effect where going to events related to your interests, volunteer-sponsored activities, and volunteering exposes individuals to opportunities to volunteer, typically through word-of-mouth or interpersonal relationships; recruitment efforts, or efforts to recruit others into volunteering, whether it be through word-of-mouth, flyers, websites, etc.; and lastly, information accessibility, or the extent to which information about volunteer opportunities is accessible to older adults, such as the choice of technology used to disseminate information about opportunities to retirees. These two groupings of categories provide a strong basis for understanding how people find volunteering opportunities–the volunteer opportunity has to be a good fit, and information about the opportunity has to actually reach the potential volunteer. We developed several axial codes out of these categories, which are listed in the Appendix below (A5). However, the major takeaways from the axial coding process follows.

3.4.2   Importance of Interests and Motivation. The first major finding was that participation is driven organically through personal motivations and interests. That is, the more a volunteering opportunity aligns with one's interests or personal motivations, the more likely they are to volunteer. For example, U03 used to play polo and now teaches young children how to ride horses and play polo, saying "I'm open ….. Just ask!". U03 is also a talented artist who volunteers at grade schools to provide art presentations and encourages others to pursue the arts, saying " I guess I've used volunteering as more of an escape" and "to give back." Another interviewee, U02, spent his career as an English teacher, and now volunteers to teach students how to read and leads lectures about English at OLLI, saying "Well, I've been a teacher for 42 years, and they were offering me the opportunity to continue doing what I always loved". and " It's been very important. It's changed my life. It's kept my brain alive." U05 stated that "…any good volunteer…or effective volunteer, is going to select volunteer opportunities in which that volunteer has a deep interest". For him, volunteering is where interests meet needs.

3.4.3   Volunteering Leads to more Volunteering. Our next major finding was that just by participating at opportunities, even in a non-volunteering capacity, interest in volunteering was organically cultivated and would frequently result in finding new volunteer opportunities. For example, U01 and U02 noted that they initially learned about volunteering opportunities by participating in classes at OLLI; however, people approached them about volunteering opportunities and they decided to participate. Now that they are regular volunteers at the organization, they learn about new volunteering

opportunities all the time, saying "Yeah. Well, work expands for the time you have!" . Essentially, once you're in the loop, you don't need help finding opportunities because they happen organically. In extreme cases, volunteering can open up entire career opportunities. For example, volunteering not only helped U03 overcome her fear of public speaking, but it also revealed her talent for sales, which has given her jobs in the sales world. Additionally, through volunteering U06 was able to get job references which has led to new careers. Some volunteering organizations have taken to capitalizing on the snowballing, where volunteers may actively seek new volunteer recruits at organization-sponsored events. For example, U01 noted that at organization-sponsored events, she is always there "making a plea" for new volunteers. And many of our interviewees remember being approached in-person, directly by the organization, as the way they were given various opportunities within an organization. Regardless, as many of our interviewees have said, "word of mouth is the key" to recruiting volunteers and finding opportunities yourself. As U01 said "I have no idea of anybody who finds volunteer jobs via computers. Okay. I don't know a person, not one. The way you find volunteers is through other people, word of mouth."

3.4.4   Organizational Culture Role Volunteer Efforts. Interestingly, organizational culture was a major factor in volunteer's decision to participate in volunteer opportunities. For some, it's the factor that brings them into the organization. For example, U01 noted that sometimes she brings friends to see OLLI, since they are curious; and when she does–and they get to meet the organizers, the volunteers, and are exposed to the general culture–"they are sold!" The organizational culture is affected by many things, as industrial-organizational psychology can point you to. But relevant to our project is the influence of individuals on the organization culture. Some volunteers make major contributions to the organization culture, and they often draw in many members and potential recruits. For example, U01 noted many volunteers with notable careers, such as a doctor who fought HIV, highly distinguished academics, and people who worked at fortune 500 companies. She noted how they deliver particularly interesting lectures, which draw in a crowd of people who may eventually also participate. Notably, while recruitment efforts help boost volunteering numbers on their own, they can also improve the organizational culture. For example, the doctor that U01 mentioned decided to start an annual recruitment effort where they served wine and cheese. This event attracts a large crowd and is an overall positive to the organizational culture.

3.4.5   Required Commitment of Volunteering. Another major factor that affects participation at volunteering opportunities is the level of commitment required, and the feasibility of actually attending. How much time, energy, and overall commitment required for an individual to participate in an opportunity has a great impact on their ability to participate. For example, as U01, U02, and U03 noted, retirees lead very busy lives–many have families that live all over, are involved with organizations around them, or are doing other activities with their retirement time–so regular time commitments can be difficult for some. Another example is that some volunteers may experience age-related issues that reduce the feasibility of participating, like arthritic volunteers as U02 noted. Some retirees often return to work in some capacity but still want to volunteer. U04 and U05 both expressed that they would do more volunteering if their work didn't take up so much of their time. On the other hand, some people have personal motivations that may affect their desire to commit themselves to volunteering opportunities. For instance, U01 reported a strong sense of commitment to causes that help children, so she started a center for helping abused childrens, created a high-stress, high-commitment role for herself motivated entirely by her commitment to her mission. On the other hand, if the commitment required by an opportunity exceeds one's threshold, they may seek volunteering opportunities that better fit their motivations and feasibility. For example, sometimes U03's volunteer work felt more like a job than something

she was passionate about, and she often left feeling dissatisfied. And in some cases, like U01 U02 noted, people "get up to here" with responsibilities and just say "I've done enough," ultimately quitting their volunteering role.

Direct in vivo quotes as referenced above were very instrumental in our Grounded Theory development and in understanding the personal motivations of our interviewees. Relevant quotes and their linkage to Categories and Concepts are listed in the Quote Bank in Appendix A6 and provide good insight into the volunteerism decision making processes of our interviewees.

3.4.6 Volunteers' Recruitment of Others. Moving away from the influence of the volunteer, volunteer organizations often make recruitment efforts, which we perceive as a variant of recommender systems, much like many other organizations. These have varying degrees of success, which largely hinges on the ease of accessibility of the information provided. This is mainly because older adults have technology and information consumption habits that differ from most. Many of our volunteers cited rather low-tech technology usage, relying on email and word-of-mouth for communication more than social media or other websites. For instance, U03 and her friends learned about volunteer possibilities mostly by word of mouth, and she suggested that many in her age group do not use online resources when looking for opportunities. U01 cited specific concerns about misinformation as a reason for avoiding social media, and stated that she is trying to avoid "getting hooked" to email. So, it's important to consider the information consumption habits of retirees when designing a system that will deliver them information. A key aspect of the retirees' technology choice involves the desire to protect their privacy and to avoid scams. They express a level of trust in email systems from organizations and individuals they know and imply that they do not trust many recommender web-sites and social media platforms to protect their privacy. Notably, some recruitment efforts are trying to improve information accessibility. For example, according to U01, OLLI is making efforts to archive many of its lecture series and provide more information for potential volunteers on their website and email newsletters, that way individuals can more readily find information. OLLI has also made efforts to get people to congregate, such as socials and book exchanges. A key finding was that often finding volunteer opportunities is not a case of retirees outside an organization looking in, but rather current volunteers and staff inside an organization looking outward to attract new volunteers.

3.4.7 Volunteer Habits Change Over Time. Lastly, the motivations, interests, and abilities of volunteers change as time goes on, especially with aging retiree volunteers, which affects their desire and ability to participate. For example, U06 participated in a horse welfare camp; however, this was a high-energy commitment activity and she felt she was getting too old, so she terminated participation with them. Additionally, personal motivations may change, and volunteers may decide they want to try something different. For example, U03 stated that she would like to explore new volunteering opportunities and that she has always wished to work for the National Parks and assist them in utilizing her skills. U06 said if there is a chance she would like to volunteer for Dollywood and also would like to take care of sea turtles. It is in their best interest that organizations accommodate these changes in motivations and abilities. Oftentimes, allowing people to take charge leads to them leaving a greater impact on an organization than might have otherwise been possible. For example, U01 mentioned a doctor who had fought HIV was being onboarded to OLLI. OLLI had made informal plans to get him to lecture about COVID-19 at the time. However, instead of lecturing in his area of interest, he actually wanted to help fundraise. So, he started a variety of fundraising efforts and did so successfully, starting the annual "wine-and-cheese" recruitment and fundraising event that draws in large crowds.

3.4.8 Our General Theory. This leads us to our general theory, which is that finding and committing to a volunteer opportunity is a deeply personal process. Usually, information about opportunities is spread through interpersonal
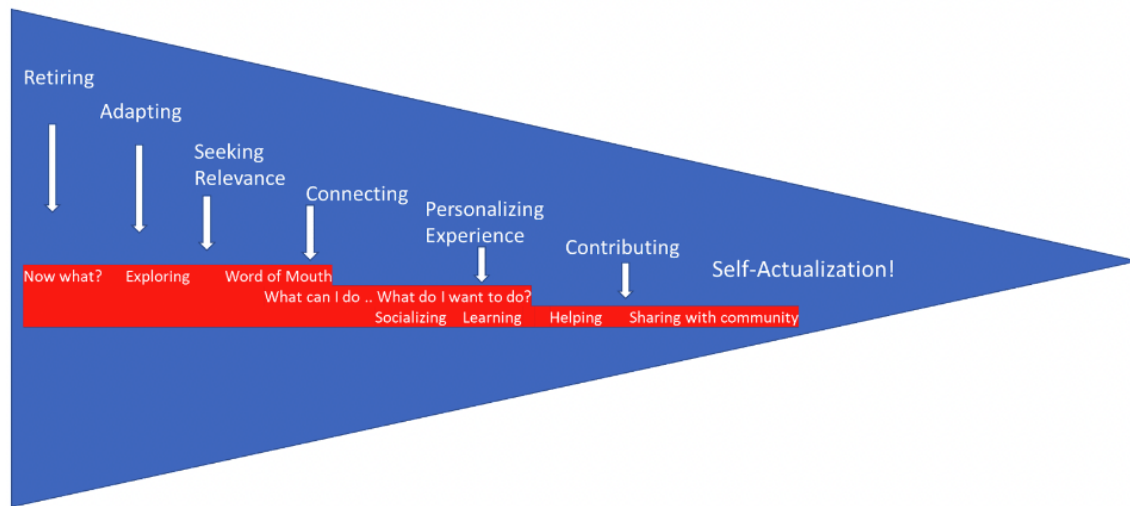
Fig. 3. Retiree Volunteerism Process Model

relationships and communications. Additionally, volunteering opportunities must be a good fit for the volunteer. For instance, they must be related to their interest, fulfill their goals, and be accessible to them, in effect, contributing to their self-actualization as theorized by Maslow [14] and others. And when they actually go to volunteer, the opportunities must remain a good fit for the volunteer, even as the volunteer's motivations, interests, and abilities change. From finding opportunities, to participate, to staying devoted to an organization, every step in the volunteering process is deeply personal for the retired volunteers. So, a decision support mechanism must support this highly personal process where retiree volunteers are in their lives, rather than try and replace it with an interface that will be abandoned. Attempts to replace the process entirely have failed, as seen by the low prevalence of website-based recommendation systems being used by retirees.

In summary, our Process Model in Figure 3 illustrates what we learned from our interviewees in their evolution into retirement and volunteerism:

4 INTERACTION MECHANISM DESIGN

The two most significant findings in analyzing our interviews are that retirees do not use automated tools to find research opportunities, relying instead on "word of mouth" from acquaintances, internal email newsletters, and their knowledge of their community's needs and secondly, once they engage in a volunteer role, they prefer to personalize their experience in a way that provides them self-actualization on their own terms. In some instances, they personalize that role to reflect their careers prior to retirement but in many instances personalize it to do something completely different. Once in their role, they are enthusiastic about sharing their experience with their acquaintances and encouraging them to join them in a volunteer-centered social network. Our design goal then is to devise an interaction mechanism that facilitates this outreach approach by building on existing volunteer opportunity email newsletters with the addition of automated recommender and elicitation capabilities.

We designed an interaction mechanism, informed by the findings in our interview study. Our interaction mechanism design reflects the interviewees' feedback that volunteers find opportunities rather organically and that the preferred
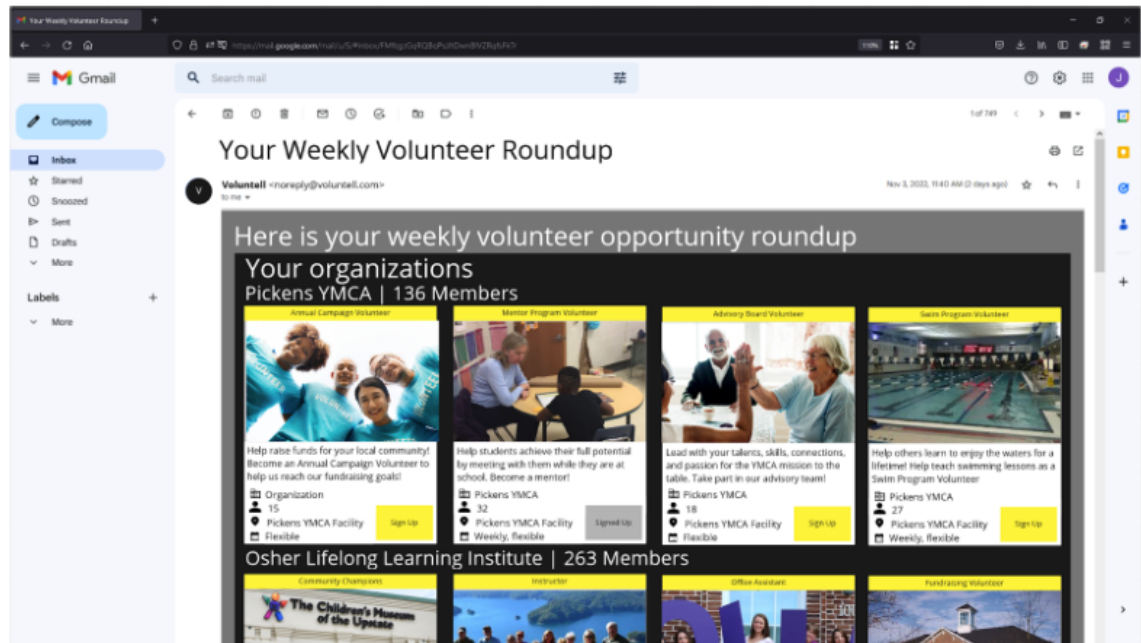
Fig. 4. Retiree Volunteerism Process Model

tool for communicating within their social circle is email. Our interaction mechanism is an email-based newsletter that displays lists of volunteer opportunities based on user-defined preference-based communities (i.e., peer groups). A full system would allow users to view and add new peers and events to each peer group, as well as create and join new peer groups, with the search/viewing process being aided by recommender systems. Such a system capitalizes on the fact that retirees often use email services instead of typical websites, and also aids users in the organic snowballing process by allowing them to form communities and share opportunities within those communities.

Additionally, to allow users to organically learn about new opportunities through the social networks of volunteers, we built in a peer group system (see Figure 5). That is, the second grouping of volunteer opportunities is based not on specific organizations a user has added to their newsletter, but on groups of volunteers that they have added to their newsletter. Specifically, a peer group is a user-defined preference-based community. That is, users, create, join, and add events to peer groups. The events that have been added to a peer group are included in the newsletter of each person in the peer group. This peer group system enables users to create small networks of volunteers that share opportunities with each other, just like how our interviewees told us they find opportunities. Furthermore, the process of finding peer groups, adding users to peer groups, and adding events to them are supported by a recommender system, that way users can explore new potential opportunities and communities. If the user wishes to introduce a new event to the system entirely, they can. Though, the specific process of finding new peer groups, organizations, and events is not the specific focus of our design variants (as discussed later).

Allowing users to craft their own preference-based communities, but supporting the communities with recommender systems may be a broadly-applicable approach to building preference-based communities in decision contexts that are heavily guided by close, interpersonal relationships.
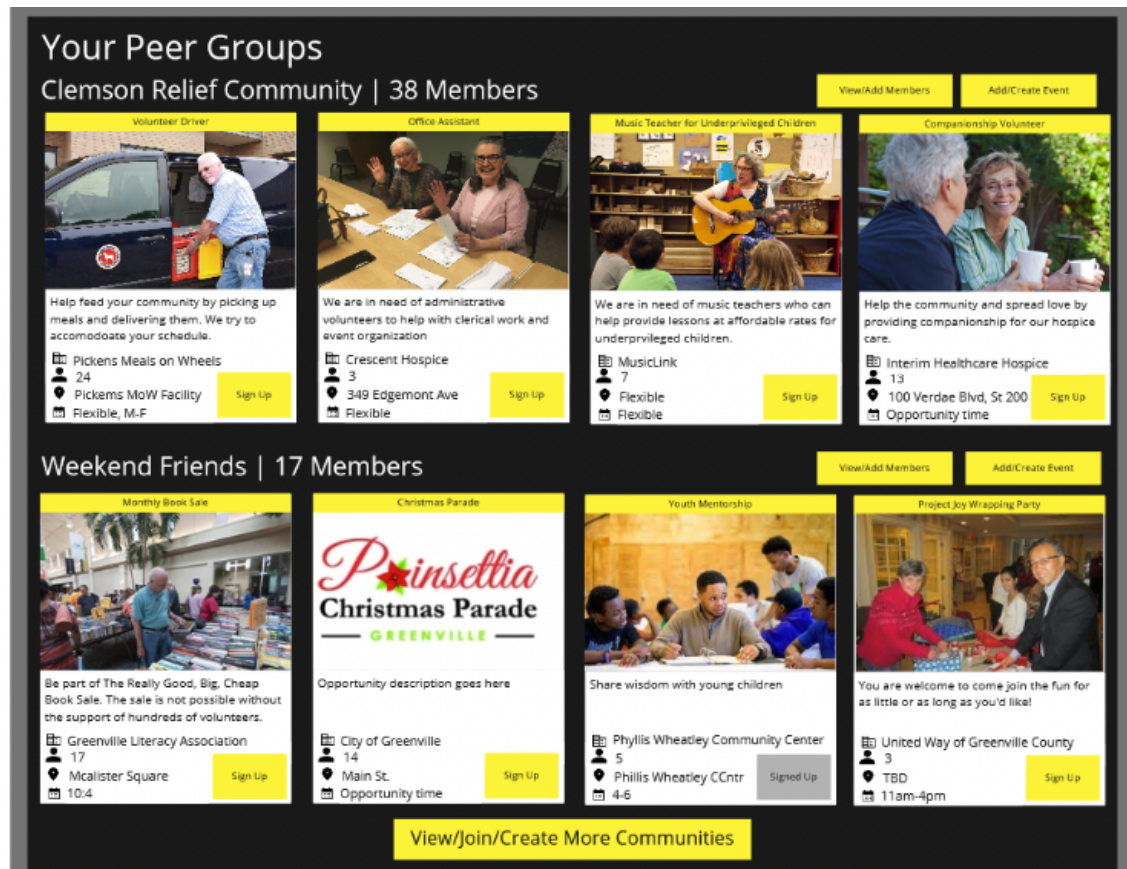
Fig. 5. Peer Group system

In order to support the ability for users to see how well an opportunity fits, we knew it would be important to allow them to see relevant information regarding the opportunities we show them. So, we decided to display such information like location (e.g., specific location, remote), the number of people signed up, the date/time/frequency, a description of the opportunity, and an image representing the type of volunteer work that might be done (see Figure 6). Beyond our decision context, understanding what information users need and tailoring displays to those needs is a way to improve the likelihood that the information helps the user.

Lastly, if a user decides that they wish to join an opportunity, they can join the opportunity by pressing the "sign up" button, which takes them to a page where they can complete any formal registration required for the event.

Consult the appendix for the full design

5 STUDY 2: SYSTEM EVALUATION

5.1 Introduction/Hypotheses

We designed a system that supports users in forming organic relationships with fellow users. While we are interested in examining how the different components of our system support older adults in finding volunteering opportunities

Fig. 6. Information about Fit

and building communities around them, we aim to generalize our results to social decision support systems more broadly. By examining how social interaction mechanisms can influence the overall user experience of social DSS, and probing into t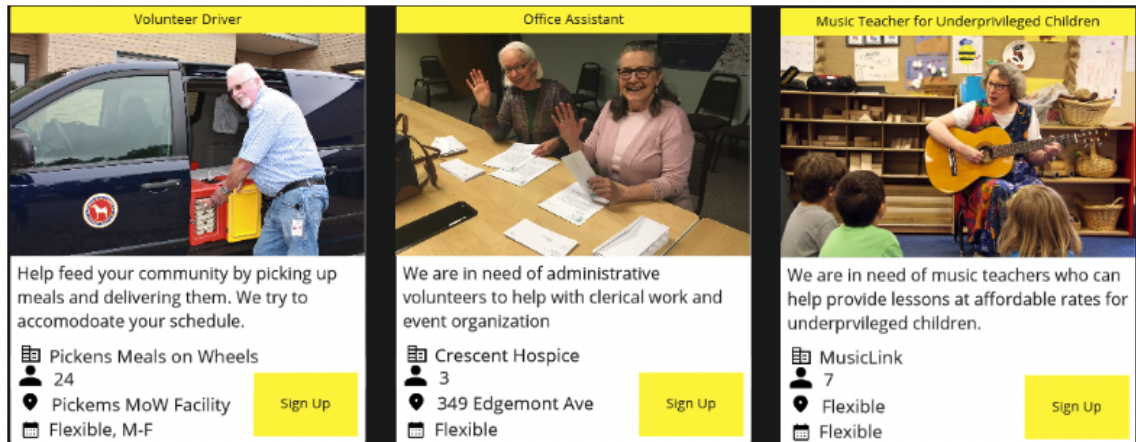he underlying perceptions and user characteristics that influence that experience, decision support system designers outside of our decision domain will better be able to understand how similar community-based systems may influence the overall user experience of the system.

In line with these goals, we will conduct a user study wherein users interact with the system (and variants of it) and report their perceptions of them. We have designed three variants of the system which enable different levels of community, privacy, and personalization. That is, we have a high privacy/low community variant (PCVS1), a medium privacy/medium community variant (PCVS2), and a low privacy, high community variant (PCVS3) (more about the variants in the Materials section). Users will interact with different variants, then report their acceptance of the system, their perceptions of system community/sociability, perceptions of system privacy, and perceptions of system personalization, as well as user characteristics such as privacy preferences and extroversion that may influence the role of these different perceptions in user experience. This study will test 5 hypotheses in line with these goals, as follows:

(1) Effect of interaction mechanism on overall user experience
    - H1: PCVS1 will have lower acceptance/engagement than PCVS2, which will have lower acceptance/engagement than PCVS3.
(2) Effect of interaction mechanism on user perceptions of the system
    - H2: PCVS1 will have higher perceived privacy than PCVS2, which will have higher perceived privacy than PCVS3.
    - H3: PCVS1 will have lower perceived community than PCVS2, which will have lower perceived community than PCVS3.
    - H4: PCVS1 will be perceived as less personalized than PCVS2, which will be perceived as less personalized than PCVS3.
(3) Effects of user perceptions on user experience

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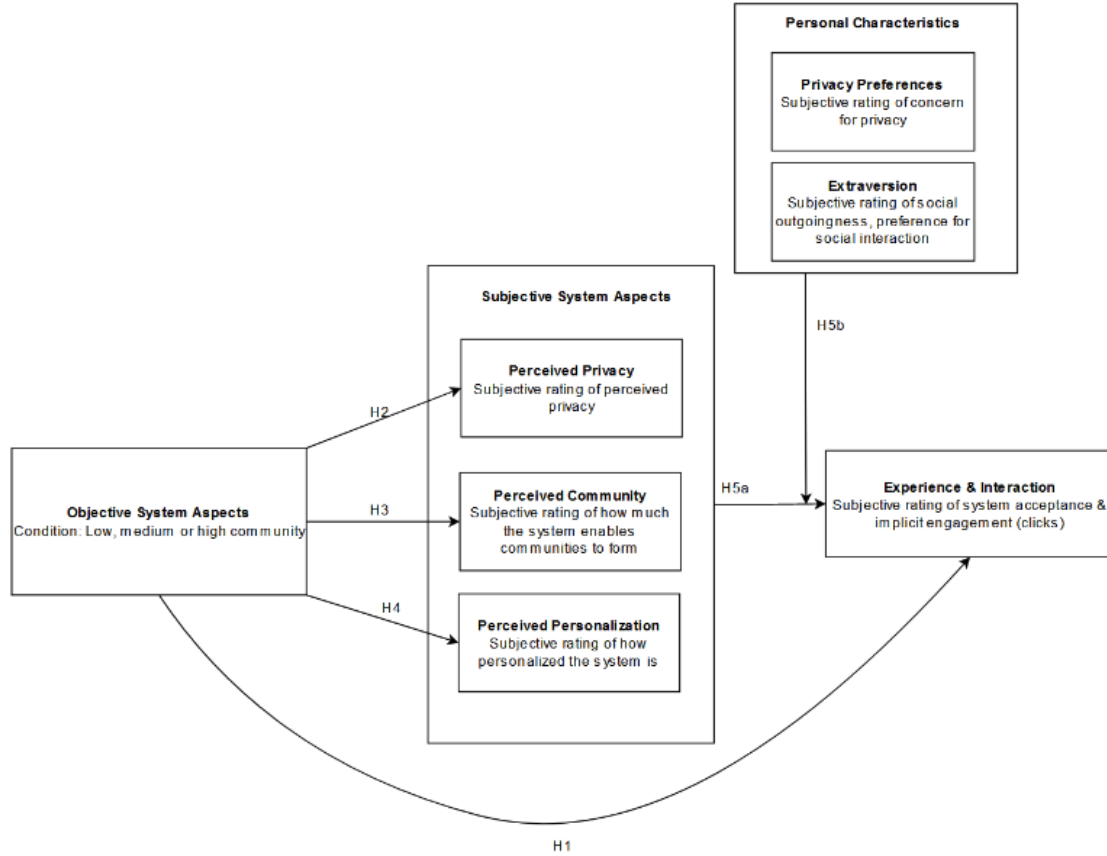
Fig. 7. Nomological network of hypotheses, framed according to [12]

- H5: (a) Greater acceptance/engagement will be predicted by greater perceived privacy, community, and personalization. (b) However, privacy preferences will moderate the role of privacy in acceptance/engagement, and extraversion will moderate the role of perceived community in acceptance/engagement.

5.2 Participants

Participants in our experimental phase will be recruited using the Prolific research participant recruitment service. Our target demographic will be similar to that from our initial Grounded theory interviews. Still, it will be broader and more diverse than the six individuals in that early part of our research. Our initial power analysis suggests a target sample size of 165. We will target an age range from 55 and older with a balanced gender and ethnic mix of recently and currently retired individuals that are either current volunteers or express interest in volunteering. To ensure a broader base of opinion, we will impose no limits on the educational level, marital status, or location of the participant or the organizations that may interest them or the duration of time they are available to volunteer. The identity of our experiment participants will be protected, with no personal identification information requested or stored in our results. Age, gender, ethnicity, education, country, and geographical region data will be collected, but all data collection, analysis,

and retention will be done in accordance with the Clemson University Institutional Review Board (IRB) approval of our study submitted by our professor and Principal Investigator Dr. Bart Knijnenburg in October 2022.

5.3 Materials and Measures

5.3.1 Interaction Mechanism. We designed a Personalized Community Volunteer System (PCVS) to help retirees find volunteer opportunities in their community. We based our design on the findings from our contextual inquiry and grounded theory analysis on retiree preferences for volunteerism. This system allows us to conduct our experiment investigating the relationship between community and privacy for a system designed to help older adults volunteer. We investigate this through three experimental conditions: high privacy/low community (PCVS1) medium privacy/medium community (PCVS2) low privacy/high community (PCVS3)

All of the conditions show information about the volunteering opportunities that is accessible and valuable to users. The information is accessible in that the system utilizes a medium of communication older adults frequently reported using in our user studies (i.e., email). The information is valuable in that we provide information that our studied older adults reported caring about, including descriptions of the volunteering opportunities, a counter of how many people are signed up for the opportunity, where the opportunity will be (if not remote), and when/how frequently volunteering would occur for the event. Additionally, retirees expressed that they learn of volunteer activities through word of mouth, they prefer email for communication within their peer groups, and they want to personalize their volunteer role to fit their specific self-actualization needs. The system has variants that differ in how much they support the organic building of interest-based communities.

PCVS1 provides lists of volunteering opportunities based on organizations that the user has signed up with, providing no recommendation algorithm to support interest-based communities. This variant is high privacy, as users cannot see information about the user, and information about the users' preferences is not required to serve items. And it is a low community in that it provides little support for building interest-based communities.

PCVS2 provides lists of volunteering opportunities based on organizations that the user has signed up with. However, it also provides tailored recommendations via interest-based communities, assigning users to communities and listing events users in those communities may like. This system is medium privacy in that it requires information about the users' preferences to serve items, and users may have an increased chance of encountering each other in person. But on the other hand, this system is a medium community, as it suggests interest-based communities and opportunities for those communities to attend.

One step further, PCVS3 (the primary interaction mechanism) provides both a list of organization-based volunteering opportunities and a list of opportunities based on interest-based communities. However, in this variant, the users will have the ability to view and join interest-based communities and suggest events for those communities to attend. This third variant is low privacy, as it requires information about user's preferences, and users can view each other in the system; however, it is a high community in the sense that it allows users to form organic interest-based groups through the use of the system, and recommend specific events that may foster connection over those shared interests. The significant distinction between PCVS3 and PCVS2 is that PCVS3 allows users to tailor their interest-based communities to themselves.

5.3.2 Overall User Experience. Overall, user experience describes the holistic experience of whether the user found the system useful and usable. That is their overall acceptance of the system. The aim of our system (and many system design efforts) is to improve the user experience. To evaluate whether the different variants of the interaction mechanism affect

the user experience, users will complete a measure of technological acceptance, the Technology Acceptance Model (TAM) [6]). In addition to the TAM, we will also record users' mouse clicks and time interacting with the system as implicit measures of overall user experience (i.e., engagement). We expect variants of our system which do more to encourage organic social interaction and further tailor those interactions to be rated as having a higher acceptance and engagement than the variants that do not. As our variants vary in their support of organic social interaction, we expect variants that enable such organic social interactions to score higher in acceptance and engagement, as they will better fulfill the needs of our target users.

5.3.3 *Perceptions of Community.* Perceptions of community describe how a system enables social communities to form and interact. One of the key findings in our user research was that our decision domain is an organically social decision domain, so supporting the process of building communities in the decision domain is one of the key goals of our interaction mechanism. Our interaction mechanisms differ in the level of the community they provide the user, with PCVS 1 being low community, in that users only see events from organizations they deliberately signed up for, with no exploration of new volunteering organizations encouraged by the system. In PCVS2, the level of community is increased in that the system recommends events based on system-generated preference-based communities but allows little control over those preference-based communities. In PCVS3, the community level is most significant, allowing users to select preference-based communities to join and recommend events to, fostering the organic snowballing process that our grounded theory study revealed. To measure perceptions of community, we will develop a scale that asks users to respond to statements about the level of community of the system on a 7-point scale, including items such as "this system would make me feel connected to my community" and "This system allows me to find new friends."

5.3.4 *Perceptions of Privacy.* Perceptions of privacy describe how users perceive the system as protecting their privacy. Our user studies revealed that older adults are concerned about their privacy and how much of their life they disclose on the internet. Inherent to systems that support social relationships is a sacrifice of privacy. To build preference-based communities, data about user preferences must be collected. Also, involvement in a preference-based community means that other users in those communities may be able to keep track of what you are doing (i.e., users in the same community are recommended the same set of events). As such, we expect the different variants to differ regarding users' perceptions of privacy. To measure perceptions of privacy, we will use the Privacy Boundary Management Model (PBMM) [4], wherein participants rate items (e.g., "I feel I have enough privacy when I use this online service" or "In general, it would be risky to give personal information to this online banking service") on a 7-point scale.

5.3.5 *Perceptions of Personalization.* Perceptions of personalization describe the extent to which users feel the system is personalized to them and the extent to which they can tailor the system to their own preferences. One of the major findings in our grounded theory study was that older adults like to tailor their volunteering experiences to themselves. Given that our variants are tailored to the user to different degrees, we expect for a perceived level of personalization to vary across the conditions. We expect PCVS1 to have the lowest level of perceived personalization, as the system is only personalized to the user to the extent that it shows events from organizations the user has signed up for; we expect for PCVS2 to have a medium level of perceived personalization, as the system recommends events tailored to the users' preferences; lastly, we expect for PCVS3 to have the highest level of perceived personalization, as the user is allowed to customize which preference-based communities they are a part of and what events those preference-based communities recommended. We will measure perceived personalization using a 7-point scale that asks users to rate statements with

respect to the system they interacted with, including "This system understands my needs," "I can customize this system to meet my specific needs and desires," and "This system feels customized to me."

5.3.6   Privacy Preferences. Privacy preferences describe the user characteristic of awareness and concern about one's digital privacy decisions or the extent to which one values privacy. As our systems vary in the level of privacy they afford, we expect perceptions of privacy to differ across the systems. However, we expect this relationship to be moderated by one's privacy preferences, such that users who are not concerned about privacy will be less concerned about perceptions of system privacy when evaluating the system. There will be a weaker relationship between perceived privacy and overall user experience when factoring in users who are less concerned about privacy. To measure privacy preferences, we will be utilizing a privacy values scale [8], which asks users to rate statements about privacy concerns (e.g., "I mind when my information is shared with third parties" and "I mind when a web site uses my personal information to customize my browsing experience") on a five-point scale.

5.3.7   Extroversion. Lastly, extroversion describes the user characteristic of having an affinity for social interaction or social outgoingness. As our systems are social systems, and they vary in how they facilitate social interactions, we expect extraversion to play an important role in users' acceptance of such systems. That is, we expect extroverted users to express greater acceptance of variants that support social interactions compared to more introverted users. Extraversion will be measured using the extraversion axis of the Big-5 personality inventory [10]. In this survey, participants rate statements on a 5-point scale, including the extent to which they see themselves as someone who "is talkative," "is full of energy," or "is outgoing, sociable."

5.4   Experiment Procedure

We will randomly assign participants to one of the three conditions. Users from Prolific will receive a link to the experiment and appropriate conditions. Afterward, they will have a training session explaining the system's features. Each participant will use a version of PCVS corresponding to their specific experimental condition.

Each participant will be informed that the organizations they volunteer with are sending out a newsletter. They are using a system that is aware of the organizations they volunteer for and provides lists of volunteering opportunities for them to sign up for. Participants will then be briefed about how to use the system and instructed to explore the system. Once finished exploring the system, they will press a button indicating they are finished, and they will complete survey measures about perceptions of the system and personal characteristics (i.e., individual differences).

5.5   Expected Results and Discussion

To test hypothesis 1, a one-way ANOVA will be conducted using the condition (i.e., variant that the user evaluated) as the factor and level of acceptance as the dependent variable. A one-way ANOVA will be conducted using the condition as the factor and the level of engagement as the dependent variable. We expect the different conditions to differ significantly from each other. We will conduct post-hoc tests to examine the patterns of differences, but we expect PCVS1 (the baseline system) to have lower levels of acceptance and engagement than PCVS2 (system-generated recommendations), and for PCVS2 to have lower levels of acceptance and engagement than PCVS3 (user-customizable recommendations), similar to the below projections. If such patterns emerge, that would suggest those building systems that enable users to build communities around their interests afford a better experience in social decision domains and that allowing users to customize those communities can improve it even further.
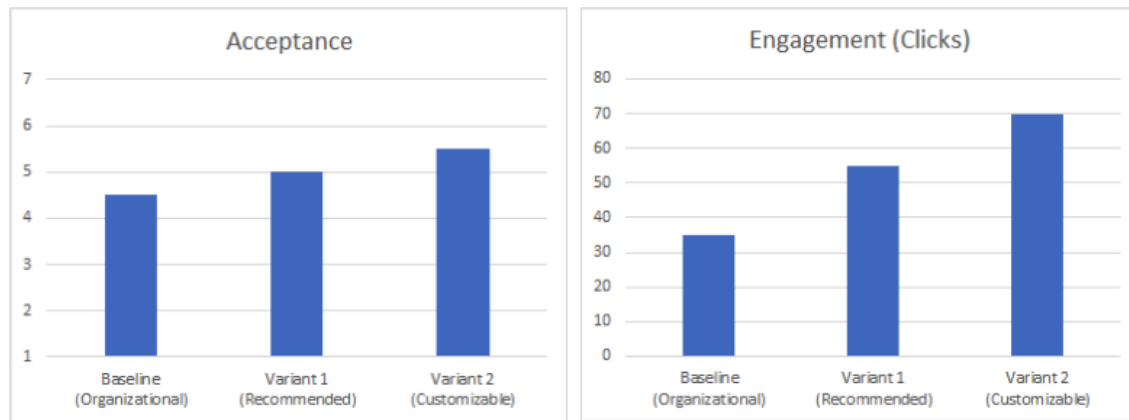
Fig. 8. Expected outcomes for hypothesis 1
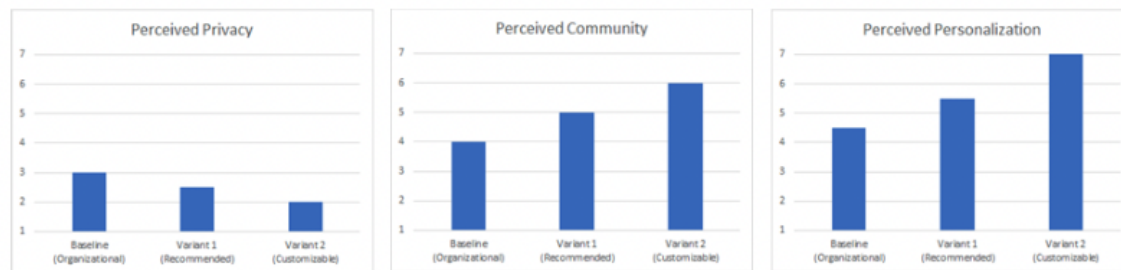
Fig. 9. Expected outcomes for H2, H3, and H4

To test hypotheses 2-4, and determine if the interaction mechanism is eliciting the expected perceptions about the system, multiple one-way ANOVAs will be conducted. One one-way ANOVA will be conducted using the condition (e.g., PCVS1, PCVS2, PCVS3) as the factor and perceived level of privacy as the dependent variable, with the expectation that the groups will differ such that PCVS1 will have a greater perceived level of privacy than PCVS2, and PCVS2 will have a greater perceived level of privacy than PCVS3. An identical one-way ANOVA will be conducted using the perceived level of the community as the outcome, with the expectation that PCVS1 will have a lower perceived level of community than PCVS2, which will have a lower perceived level of community than PCVS3. Lastly, an identical ANOVA will be conducted using the perceived level of personalization as the dependent variable, with the expectation that PCVS1 will elicit lower levels of perceived personalization than PCVS2, which will elicit lower levels of perceived personalization than PCVS3. We expect the results to look akin to the projections below. If such patterns emerge, then we will know that the variants used across the conditions did indeed elicit different perceptions of the level of privacy, community, and personalization, allowing for specific conclusions about such perceptions to be made.

Lastly, to test hypothesis 5 and determine if the user perceptions of the system are responsible for differences in overall user experience, a multiple linear regression will be conducted. Perceived level of privacy, level of community, and level of personalization will be regressed onto both levels of acceptance and engagement. Additionally, user privacy

preferences, user extraversion, and their respective interactions with the perceived level of privacy and perceived level of the community will be regressed on the level of acceptance and engagement. We expect greater perceived privacy, perceived community, perceived personalization, and extraversion, as well as less strict privacy preferences, to be predictive of greater acceptance and engagement of the systems. We expect that perceptions of system privacy will play a more prominent role in overall perceptions of the system for users who are more concerned about privacy and for perceptions of the level of community to play a more prominent role for users who are more extroverted. If such patterns emerge, we will know whether the specific differences in perceptions of privacy, community, and personalization were responsible for differences in overall user experience and the types of users those perceptions play an important role.

6 GENERAL CONCLUSION

6.1 Limitations and future work

Our research was constrained by sample size and a short time frame of three months to design user studies and complete any data collection. Additionally, all of our interviewees were highly college-educated with previous professional careers, most with connections to Clemson University. We should expand our pool of interviewees to be more diverse, particularly in education level, past employment roles, and geographic location, such as urban versus rural communities. We also want to research the volunteer decision processes of people that are not retired to better understand the differences in those populations and how our interaction mechanism could be generalized to be more universal and how it can be perceived and better used in the context of recommender systems. Future research should aim to target larger, more diverse samples, thereby reducing the risk of overfitting the system design and findings to our specific context and sample.

Another limitation of our study was the lack of well-validated measures to examine our focal constructs. For instance, to our knowledge, there are no validated scales that probe at the perceived level of customization or level of personalization of systems, as such our measures are prone to validity issues. Future research should aim to develop such scales in order to provide more holistic and valid measures of user perceptions of systems.

6.2 Conclusion

In order to support retirees in finding volunteering opportunities, we conducted user studies, developed an interaction mechanism to support the target users, and proposed an evaluative study of the interaction mechanism. By doing so, we not only have explored ways in which older adults can be assisted when looking for meaningful activities and social groups, but our findings may have broader implications for social decision support systems in general.

We found that the process of finding volunteering opportunities and learning about new opportunities is a deeply personal and organic process for retirees. That is, information about volunteering opportunities is spread through word of mouth, and opportunities must be a good fit for the participants' interests, motivations, and abilities, and must accommodate the retiree's desired autonomy. Furthermore, we found that older adults do not use the most modern communication methods, preferring email and face-to-face communication over social media or websites.

Our grounded theory findings led us to design an email-based newsletter system that displays lists of volunteer opportunities based on user-defined preference-based communities (i.e., peer groups). That is, opportunities are displayed in groupings labeled by the preference-based community they are associated with, and users are allowed to find or

create new preference-based communities, view users within the preference-based communities, and recommend events for users who are in those communities.

In order to test the effectiveness of our interaction mechanism and inform research on social decision support systems more broadly, we conducted an evaluative study on the interaction mechanism and its variants of it which differed in the degree to which they support the organic snowballing effect of finding new volunteering opportunities. One variant was simply an email-based newsletter of events from organizations the user is signed up with, and the other variant displays preference-based communities and events recommended for them but does not allow the user to exert control over the preference-based communities and the events they are served. With differing levels of community and control over those communities, we will be able to isolate differences in user experience across the three different variants of the system. More specifically, we will be able to investigate how building systems to support organic social processes affects user perceptions of these systems (e.g., perceived community, privacy, and customization), and how those perceptions may contribute to the overall user experience. Researchers and practitioners in the social decision-support domain may be able to use these findings to inform their own decision-support systems and the effects social features may have on them.

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Appendix

A1: Interviewee Participants Demographic Table

Participants Code	Age Group	Country	Gender	Ethnicity	Career / Volunteer Role
UO1	mid70s	US	Female	White	Educator / Administrator
U02	80	US	Male	White	Educator / Teacher and Quiz Master
U03	mid70s	US/Argentina/ Spain	Female	White	Mental Health Administrator Artist
U04	62 - not yet retired	US	Female	African American	Educator / Reading Teacher and TBDt
U05	58	US	Male	African American	Law Educator / Youth at Risk Mentor and Advisor
U06	54 - not yet retired	US	Female	White	Assisted Living Administrator / Community and Church Leadership

A2: Interviewee Profiles

U01

U01 is a single, white female, mid-70s in age, with both a Bachelor's and Master's degree in Sociology with concentration on public mental health. She has traveled extensively and held adjunct professor and administrative roles in several small colleges, ranging from Upstate New York, then Colorado, then Tennessee. She then served as Associate Dean of a small liberal arts college in Kentucky and then moved to Florida where she was the administrator and volunteer coordinator for a community mental health facility. She then relocated to Columbia, SC again in administration at a facility for physically and mentally abused youths. She found that role very stressful and then "stumbled upon" a position teaching Sociology at Tri-County Technical College in Pendleton, She has been a volunteer with the Osher Lifelong Learning Institute in Clemson since 2013, initially taking continuing education courses that caught her interest then expanding her role to serve on and later chair the Advisory Board, engaged in institute administration and leadership. Additionally, she has volunteered as a Board member with a local

mental health clinic and the Pendleton Historical Society, and with the Anderson School District where she taught basic literacy in an adult education program. She is a frequent user of email and informational websites but not of social media.

U01 enjoyed teaching professionally but always gravitated to administrative and leadership roles related to sociology and public mental health, many which were understaffed and dependent on volunteers. She found an "escape" from the stress of mental health and abused youth clinics in teaching, both professionally at Tri-County Tech and in volunteering.

U01 has never used automated tools to find volunteer roles – she learns of them through her contacts in the related communities and through "word of mouth."

U01 views volunteering as an "escape," a way to serve the community, a way to learn and to stay engaged socially. She always tends to start with a small role but if she finds the culture interesting and serves a mission that she admires, she gravitates to administrative roles and Board membership, due to her professional background and her drive to make organizations more effective.

U01 learned of the Osher Lifelong Learning Institute through "word of mouth" and was attracted by its continuing education mission and the ability to personalize her role there to her schedule and interests.

U02

U02 is a 80-year-old military veteran who, after serving and getting married in his 20's, came back to college to get a bachelor's, master's, and PhD in english. He then went on to teach as an instructor at various universities and colleges around South Carolina. While teaching, he would volunteer at various organizations to help students learn to read. Now that he is retired, he spends his time volunteering as a writer, lecturer, and tutor. His primary volunteering role is lecturing at Clemson's Osher Lifelong Learning Institute. When he's not volunteering, he sends out weekly quizzes via email to friends, family, volunteers, and students.

He primarily illustrated how personal motivations and interests drive participation in volunteer opportunities. All of his volunteer experience was related to English education, and he frequently cited a sense of satisfaction from leaving a lasting impact on those he helps.

Additionally, he provided fantastic insights about how people learn about volunteer opportunities. He learned about his volunteer experiences through people and places he visits frequently. For example, one time he learned about a volunteer opportunity because a place he frequented had a sign-up board posted. He also frequently received recommendations from friends and group newsletters, like many of our other interviewees, rather than through volunteer matching websites.

Lastly, he gave us insight into how burnout can occur. He talked about how volunteering can be a time commitment, and the more volunteers commit themselves to an organization the more opportunities for volunteering they're introduced to. Eventually, volunteers reach workload capacity.

U03

U03 is a female Caucasian in her mid-seventies. She was reared overseas; she was born in Pennsylvania but was raised in Argentina and completed her schooling in Spain. She has a BS in English, an MS in Adult Education, and an MBA among other credentials. Ten years ago, she relocated to Clemson to practice her art and be near her family. She has a large family, with 12 grandchildren and 4 daughters. She is a member of numerous organizations, including the Watercolor Society and Anderson Writers Guild. She has sold several paintings and publications. She is a Children's poet as well. She has always volunteered at her children's school and her college since it allows her to make new friends and participate in new activities. She loved to assist others and was quite outgoing. She participated in a variety of activities, such as playing polo in Spain. She organized a group of painters who later turned their efforts into art shows. She has even volunteered to coordinate poker games. She has been a volunteer at a Pickens County equestrian center operated by her daughter involved in teaching children to ride horses and teaching polo. Prior to that she volunteered for the Furman Group, Greenville.

U03 was a highly outgoing person who always loved to help others. She has always loved volunteering since it has allowed her to socialize and participate in a variety of activities. She claims that participating in charity work has given her a larger base and made her feel more like a person than an elderly woman. She said that volunteering "throws me back into the pond when I help other people swim."

She learned about volunteer opportunities at OLLI by "word of mouth" from within the community rather than finding it using automated tools.

She has discovered hidden talents through volunteering, such as her gift for sales and public speaking, which has helped her go up the corporate ladder, but she is not interested when helping turns into a career. She enjoys getting her retribution by witnessing others receiving the support they require. She looks for opportunities where she may positively impact someone's life.

Despite the fact that she learns about all of her volunteer options by word of mouth, she still wants to learn more about other possibilities, such as working in a national park, and would like to do so by using tools or websites.

U04

U04 is an African American female aged 62. She is a primary school teacher who is set to retire for a second time at the end of this school year. She was born in Little Rock Arkansas. She is divorced and has 4 adult children. She has a BS in Early Childhood education.

She feels volunteering is very important but is unable to engage in it as much as she would like due to her work obligations. Teaching leaves her with very little spare time to volunteer. When she has been able to volunteer, she enjoys the good feelings she gets knowing that she's helped others.

She first did significant volunteer work in her hometown of Little Rock where she volunteered at the local school system, where they needed volunteers to read to students. This led to her

becoming a substitute teacher and motivated her to pursue a career in teaching. She feels volunteering led her to become a teacher because she enjoyed seeing the 'aha' moment in the kids' eyes when she read to them.

U04 feels that volunteering is necessary to be a good citizen and not giving back speaks to your character as a person.

U05

U05 is an African American male aged 58. He is from a small town outside of Little Rock, Arkansas. He has a bachelor's degree in criminal justice and a law degree. He worked for nearly two decades as a professor teaching paralegal studies. He has come out of retirement multiple times to lend his expertise in jobs that need him. He currently serves as an administrative review officer for the state's Department of Human Services.

U05 feels that volunteering is critical because the government does not have enough resources to help all the people who need help. Without volunteers he feels the efforts to help those in need would be unsustainable. He volunteers on an as needed basis, usually when someone he knows presents him with an opportunity where his talents would be useful.

He has volunteered many years as a mentor for at-risk youth. Judges and sheriffs contact him to be a positive role model for people who are at risk of being consumed by a life of crime. He feels this work is paramount to the stability of the community. He receives joy from seeing the people he works with go on to live happy successful lives as good citizens and has made many lasting connections through this role.

Because his volunteerism is as needed or by request, he doesn't go looking for volunteer opportunities. At times he's seen them advertised on the news, He believes that volunteering is where interests meet needs and a large amount of interest is needed to be an effective volunteer. He also advocates for people to volunteer together because "if enough people have come together for the volunteer activity…that volunteer proposition is going to be extraordinarily effective".

U05 doesn't have as much time to volunteer due to work obligations but stated that oftentimes when time is not available financial support can be given in lieu of volunteering.

He hasn't used any technologies to help him find volunteer opportunities but would be open to using an app if ample training was provided. He, like many others his age, has an aversion to technology.

U06

U06 is a Caucasian female aged 54. She oversees a community outreach organization. She holds a bachelor's degree. She has a boyfriend. From an early age, she and her mother and grandmother did voluntary work. . She has been an active participant in numerous volunteer organizations, including Leadership Pendleton and Pendleton United Methodist Church.

According to U06 Volunteer work is intrinsic to who she is. She is committed to volunteering because she values giving back to the community. She also pushes for her partner to join in on the fun.She frequently organizes charity events, such as art exhibitions, food drives, and other such initiatives. In honor of a young boy who passed away, she was able to raise $200,000 for a playground. Due to her advanced age, she prefers to focus on organizing events rather than engaging in strenuous ▪activity herself.

Her time spent helping others has had a significant impact on her development as a person. She improved her self-confidence, her professionalism, and her ability to handle people. She also takes advantage of the situation to connect with many others who share her interests. This has also aided her professional progress.

She became involved in volunteer work through word of mouth and has never utilized any tools. She usually responds to organizations that contact her via email if she personally knows them. She also has personal interests in volunteer work, such as her wish to participate in Dollywood's volunteer program. She would also like to establish a sea turtle sanctuary.

A3: Interview Protocol and Recommended Questions List

	HCC 8810 - Group 4 - Volunteerism - Interview Protocol
Introduce Ourselves	Names/background/student status
Interview Approach:	The interviews in our research are "semi-structured" meaning that the interviewer introduces the topic, and then the interviewee leads the conversation on this topic. Where useful, the interviewer may follow up on things the interviewee says or may guide the conversation back on topic if the interviewee goes on tangents not relative to the research objectives.
Interviewee Affiliation or role :	
Interviewee (Title and Name):	
Mode/Location of Interview:	
Permission to record:	To facilitate our note-taking, we would like to record our conversations today. Please review the **release form**. For your information, only researchers on the project will have access to the recordings which will be eventually destroyed after they are transcribed.
Human subject protection:	We asked you sign a form devised to meet our human subject requirements. Essentially, this document states that: (1) all information will be held confidential, (2) your participation is voluntary and you may stop at any time if you feel uncomfortable, and (3) we do not intend to disrupt or negatively impact any processes. Thank you for your agreeing to participate.

Time commitment:	We have planned this interview to last no longer than one hour. During this time, we have several questions that we would like to cover. If time begins to run short, it may be necessary to interrupt you in order to push ahead and complete this line of questioning.
Why them?:	The purpose of this research is to learn about the volunteering experiences of older adults, and about what goes into choosing among many available volunteering opportunities. You have been selected to speak with us today because you feel you can help us understand the procedures, motivation, issues and areas for improvement in finding volunteer opportunities. Participants get to contribute to a research study that students conduct for their class. This research will support the development of new decision-support systems for older adults to help them choose volunteering opportunities
	Suggested Interview Questions - Do not use as a script but as conversation starters, to keep discourse moving, and for wrapup to ensure completeness
General / Opening	Ask interviewee to introduce themselves - either actively or passively collect demographic data - approximate age, gender, race, hometown, education, employment, interests, health status
Active Volunteers	How important is it to you personally to volunteer?
	What feelings do you get volunteering? Suggest Satisfaction...... Staying Involved? Giving Back? Friendship? Frustration?
	Where have you volunteered in the past? Has a volunteer role ever turned into a job for you?
	Whare are you volunteering now? How many different organizations do you volunteer for?
	How long have you been volunteering? How long have you been a volunteer at Osher LifeLong Learning?
	What features of those organizations do you like?
	How much time per week or month do you want to spend volunteering?
	Once you select a volunteer opportunity, what roles do you like to take on?
	What's your favorite aspect of volunteering?
	Do you frequently volunteer with the same individuals? Have you made any friends volunteering?

	Have you ever volunteered somewhere then decided "this is not for me" - Why?
	What factors would make you quit volunteering at an organization?
	How did you learn of those volunteering opportunities?
	Do friends recommend volunteering opportunities and why?
	Do you ever recommend places to volunteer to others? What motivates you to do that?
	Do you ever get mail or emails asking you to volunteer? How do you react to those? Were they legit?
	What do/did you look for when trying to find a volunteering opportunity?
	Do you prefer to volunteer with your spouse? Or with friends? Or alone? Why?
	What does an organization need to do and be like to attract you as volunteer?
	Are there any pain points during the volunteer process?
	Tell us about your most positive volunteering experiences
	Tell us about your most negative volunteering experiences
	Have you ever used any systems or websites to find volunteer opportunities?
	https://www.volunteermatch.org/
Team: are these good options?	
Suggest others and use best 2 or 3	Specific to Clemson: Note OLLI is at top of list https://www.volunteermatch.org/search/orgs.jsp?aff=&includeOnGoing=true&r=20.0&l=102+Fort+Hill+Street+%28Mailing+520+Fort+Hill+Street+%28Location%2C+Clemson%2C+SC+29634%2C+USA
that we can best improve	https://www.volunteermatch.org/search/orgs.jsp?aff=&includeOnGoing=true&r=20.0&l=102+Fort+Hill+Street+%28Mailing+520+Fort+Hill+Street+%28Location%2C+Clemson%2C+SC+29634%2C+USA
	https://www.greenville.com/directory/bd-categories/volunteer-ops/

A good improvement may be to permit organization to post videos showing their volunteers in action - or people describing the organization	
	https://www.dosomething.org/us/articles/volunteering-opportunities-in-your-community
	https://www.aarp.org/volunteer/
	For each site you used, how was that experience? (BRING UP THE SITE AND VIEW TOGETHER - IF NONE OR THESE NOT MENTIONED REVIEW THEM:
	What features did you like?
	What feature did you not like?
	Describe what features the perfect volunteer search application should contain
	How useful would it be if the volunteer search application contained still images of their volunteers in action?
	How useful would it be if the volunteer search application contained video clips of their volunteers in action?
	How useful would it be if the volunteer search application contained video clips of the spokesperson of the organization describing their mission and needs?
	How useful would it be if the volunteer search application contained video clips of current volunteers of the organization describing their experiences?
	Is there anything else you want to share with us about Volunteering?
	THANK THEM!
For each interviewee (collect by observation if it	Age range

is not comfortable to ask:)	
	Gender
	Race
	Education level
	Nationality
	Marital status
	Employment

A4: Frequency Count of Codes

Code Word	Code Frequency
volunteering	26
word of mouth	15
connecting	14
teaching	9
personalizing experience	8
education	8
friendship	8
commitment	7
socializing	6
emailing	6
communicating	6
interesting	6
recommending	5
website	5

community	4
administration	4
academic	4
volunteer	4
mission	3
scholarships	3
experiences	3
art	3
fun	3
involvement	3
publicizing	3
motivation	3
family	3
fundraising	3
helping	3
tasks	2
age	2
time	2
preferences	2
volunteers	2
advisory	2
marketing	2
communication	2

culture	2
retired	2
not aware of websites	2
asking friends	2
goals	2
attracted	2
learning	2
sweet spot	1
crafts	1
overload	1
burnout	1
rewarding	1
fulfilling	1
feeling alive	1
challenge	1
covid	1
children	1
digital aversion	1
Giving back	1
sharing	1
classes	1
brain alive	1
gratification	1

website out of date	1
hate social media	1
partnering	1
collaboration	1
playing	1
in the loop	1
rarely use website	1
aging out	1
remote volunteering	1
asking wife	1
bonding	1
keeping up	1
encouraging	1
kids	
expanding	1
learning	1
variety	1
wine	1
free	1
welcoming	1
atmosphere	1
participate not control	1
love social media	1

people	1
maintaining knowledge	1
physical limitations	1
making a difference	1
pleasure	1
afraid	1
awareness	1
mattering	1
recommendation	1
meeting people	1
recruiting	1
memory	1
barriers	1
mental wellbeing	1
satisfaction	1
mentoring	1
serendipity	1
confidence	1
snowballed	1
mobility	1
success	1
autonomy	1
escape	1

never search websites	1
tech resistance	1
no technology	1
time commitment	1
connecting	1
bringing friends	1
not tech savvy	1
feeling like a person	1
online tools not useful	1
freedom	1
opportunities	1
website searching	1
outgoing	1
friend recommended	1
outreach	1
youth	1
life-changing	1
like-minded people	1
Sum	287

A5 - Grounded Theory: Categories, Concepts and Axial Codes

Categories
Volunteering
Teaching / Learning
Connecting

Escaping
Staying Relevant
Contributing
Personalizing Experience / Self Actualization
Socializing
Community
Commitment

Concepts and Groupings

Opportunity-volunteer fit
Related to interests
Personal motivations
Organization culture
Commitment requirements
Feasibility
Finding & sharing new opportunities
Organic snowballing
Recruitment efforts
Info Accessibility
Participation outcomes
Participation
Personalizing experience

Axial codes

Participation driven organically through personal motivations and interests
"participation" more likely in activities "related to interests"
"participation" more likely in activities that fulfill "personal motivations"
Organizational culture is an attribute that volunteers care about
"organization culture" can be a determining factor for "participation"
Some member's "participation" contributes greatly to the "organization culture"
Some "recruitment efforts" can improve the "organization culture"
The commitment the opportunity requires and feasibility to volunteers may attract or repel people
"commitment requirements" and "feasibility" can influence the amount of "participation"

some people have "personal motivations" which drive them to "participation" in opportunities of varying "commitment requirements"
some people have "personal motivations" which drive them to "participation" in opportunities with varying "feasibility"
high "commitment requirements" or low "feasibility" may lead the volunteer to seek "participation" in other activities related to "personal motivations"
Recruitment efforts must consider how accessible their efforts are
Older adults have "information accessibility" concerns which may affect "participation"
Some "recruitment efforts" try to improve "information accessibility"
By participating, you are exposed to even more opportunities which results in snowballing
"organic snowballing" is often how people initially start "participation"
"participating" in activities "related to interests" leads to more (or initial) "organic snowballing," leading to more opportunities for "participation"
Some "recruitment efforts" capitalize on "organic snowballing"
Sometimes goals and abilities for volunteering change; organizations should accommodate this dynamism
Sometimes "feasibility" changes, affecting "participation"
Sometimes "personal motivations" change, affecting "participation"

A6: Quote Bank with Linkage to Categories and Concepts:

Quote Bank	Category or Concept Link
People wanna volunteer. They want to be, I'll come, I'll do whatever you want me to do for two hours next Thursday, but don't ask me to come on Tuesday. Don't ask me to come on Friday. Okay. That's good. You now, people who, who typically are here, have very busy lives	Commitment requirements
. The word of mouth is, I mean, I'm shocked at how, you know, many people I've said, they'll say, Oh, what, what's this o you keep talking about you do this Holly? And I said, Well what, you gotta come on over. Let me let, let me show you the, the class. Let me show you the building. Let me introduce you to the worker.	Connecting, Word of Mouth
She has all this connected connections.	Connecting, Word of Mouth
so for me, my connection, my social connection is through email.	Emailing

. So I I'm always forwarding stuff from idealist.com to somebody	Emailing
Email is wonderful. These daily quizzes that I send around and weekly quizzes, they're a lot of fun. I really enjoy that. Yeah. And Google, I must use Google 20 or 30 times a day	Emailing
0, I guess it was early 2020 when everything was shutting down. Yeah. People going on quarantine. And so I started a a daily puzzler that I do online.	Emailing
I write probably a monthly, sometimes it comes out weekly, but it's called Weekly Hubris It's an online magazine, and I write a little essay for them.	Emailing
I don't remember how I first even learned about O Yeah. I know it wasn't, I must have read about it someplace	Finding Opportunities
I have no idea of anybody who finds volunteer jobs via computers. Okay. I don't know person, not one. The way you find volunteers is through other people word of mouth	Finding opportunities
. It was just simply a matter of, you know, catching my eye.	Finding Opportunities
I'm not looking for anymore. Yeah. But I, I would imagine it works very well for, for a lot of people. Okay. And I would recommend them to people looking for things. But I've never gone to the computer to Google to see where else I could volunteer.	Finding Opportunities, Websites
Learned of volunteer opportunity through "word of mouth"	Finding Opportunities, Word of Mouth
he way you find volunteers is through other people word about, so you, or not only word of mouths from strangers	Finding Opportunities, Word of Mouth
No, I, I've, I wasn't aware that there was that tool.	Finding Opportunities, Websites
a general sense of wellbeing. A sense that I matter that, that if, if I care for this….. and I enjoy their company. Mm-Hmm. <Affirmative> has been very fulfilling.	Fulfillment, Giving Back
or me, the, the motivation is the mission of the organization. And so I wouldn't volunteer with an organization that I didn't feel committed to the mission	Motivating, Mission
Well, I've been a teacher for 42 years, and they were offering me the opportunity to continue doing what I always loved	Motivation
Volunteered to be a reading tutor at Clemson Elementary, but that was very rewarding.	Personal Motivation

type of volunteering there makes people expand. It brings 'em out of themselves	Personal Motivation
Wanted to do something totally different. Yeah. That's not in the job description,	Personalizing Experience
So that makes it more attractive. They have some freedom	Personalizing Experience
it would be like, been there, done that, <laugh>	Personalizing Experience
don't want to be available to everybody.	Personalizing Experience
That <laugh> he wanted to do what he wanted to…... So more interested in fundraising than his own like, personal field.	Personalizing Experience
, I've been there and as I say, I've run organization where I had to beg for dollar. I'm not gonna do that anymore.	Personalizing Experience
. Something with no responsibility	Personalizing Experience
Something that says, I can come in, I can take it, but I'm not the boss of it.	Personalizing Experience
No interest in that at all (Administration) … but got on two boards after I retired. The see, what was it? Emeritus College Board and the recreation Clemson Central Recreation.	Personalizing Experience
That It was the board of the Emeritus College that turned me off more than anything..., it was awful.. Had to resign	Personalizing Experience
she doesn't want to teach, although she's done that in the past, she wants to administer. That's fine. And you don't want to administer, you want to teach	Personalizing Experience
Wouldn't work for me cuz I can usually find my own.	Personalizing Experience
The other issue we have is that folks age out….we had one fella who his spouse died and physically he just, Yeah. You know,	Physical Limitations
English is her second language, and so she's a little reluctant to get in some of these	Physical Limitations
A lot of 'em are just physically unable to Yeah. I mean, they have the computer and they have the knowhow, but you know, they're arthritic and just can't, can't do it anymore	Physical Limitations
once I found out that there was other needs, then, then I progressed	Snowballing
So you utilize 'em too much. I think that's, I think that's one of the negative things I've found	Snowballing

Yeah. Well work expands for the time you have <laugh>.	Snowballing
Yeah. We have been serving wine <laugh>	Socializing
It's been very important. It's changed my life. It's kept my brain alive	Staying Relevant
I wouldn't do Snapchat if my life depended. I have no interest in it…. I have no desire to do any of that nonsense. And, you know, the amount of, of misinformation and, and that's being spread.	Technology, Social Media
Most of our folks do email. Yeah. And a lot of them are in Facebook. That's a, that's a big thing cuz they see their grandkids and on and on	Technology, Social Media
e got way behind with Covid and we had to go literally teaching Zoom and nobody taught Zoom and nobody knew Zoom was, And then we had to teach our instructors to use Zoom.	Technology, Social Media
I'm open ….. Just ask!	Volunteering
Two paid employees for 1,450 volunteers. Yeah. Is crazy. (OLLI)	Volunteering
hundreds of volunteers, but they may volunteer. I mean, they may volunteer for one thing a year.	Volunteering
The sweet spot for us is about, well we always say a woman, a white woman with a master's degree, age 70 to 75.	Volunteering
Well, I don't know any younger volunteers <laugh>, so I can't speak	Volunteering
so I guess I've used volunteering as more of an escape	Volunteering. Escaping
Interesting. So it sounds like the website might be useful for people that are outside of the loop, whereas once you're in the loop, you know what's going on, you don't really need	Websites
XXXX who was a good friend of mine and she said, I think he would enjoy teaching at o. And so I had never even, I didn't even know…. Yeah, Word of mouth.	Word of Mouth
she just came up to me at one after one meeting and said, you know, I think you'd be interested in	Word of Mouth
Well, I mentioned John and before he moved up to Hillsborough, North Carolina, I tried to get 'em involved here, but I guess he knew he was, he was moving pretty soon. So he went up there and he did end up teaching in the Duke OLLI program	Word of Mouth

. So again, it's familiarity. Word of mouth (Board of Clemson Recreation Dept)	Word of Mouth
That was word of mouth.	Word of Mouth

A   RESEARCH METHODS

A.1   Part One

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A.2   Part Two

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B   ONLINE RESOURCES

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