

COMMUNITIES OF PURPOSE

by

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ABSTRACT

FELESIA STUKES. *Communities of Purpose*. (Under the direction of DR. MIRSAD HADZIKADIC)

Communities of Purpose are commonly known to enact their purposes through social movements, grassroots efforts, semi-formal groups, and through organizations in the voluntary sector. They carry out charitable missions and goals and are often committed to the pursuit of social welfare and social change.

In this research, I explain why Communities of Purpose are organized complex systems, and consequently why their success or failure cannot be explained solely by traditional statistics. First, I describe common characteristics and patterns among various Communities of Purpose. Next, I present an understanding of the structure and behavior of individuals that make up Communities of Purpose. Using Network Science, I then examine the relationships between and among the individuals who collectively form a network of action around a specific community that increases awareness about homelessness and poverty-related issues. Using the lens of organized complexity, I present complex characteristics of how this specific communities' success is impacted by structure and illuminate problem areas within the network. In response, I suggest a technological framework and corresponding online social connectedness tool, which can assist Communities of Purpose in being more successful at reaching their intended outcomes.

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CHAPTER 1: INTRODUCTION

This dissertation defines a Community of Purpose as an evolving network of individuals who form a group and a complex set of relationships among them to address what they believe is a societal problem. In this dissertation, the underlying theoretical framing behind this body of work on understanding Communities of Purpose is complexity theory. The study of complex systems cuts across all disciplines of science from physics to anthropology [75]. As small local groups of individuals within a community of purpose work collectively toward a solution or shared purpose, global patterns emerge presenting an essential feature of complexity [110].

Unfortunately, many social problems continue to persist despite the work of communities who work to eliminate them, communities of purpose, and explanations for this phenomenon are largely unexplored. The global progress towards solving society's most pressing issues seems small compared to the vast amount of effort, energy, and economic resources put in. This dissertation provides an explanation as to how communities of purpose demonstrate properties of organized complex systems, and consequently why their success or failure cannot be explained solely by traditional statistics. Communities of Purpose (CoPurpose) are commonly known to enact their purposes through social movements, grassroots efforts, semi-formal groups, and through organizations in the voluntary sector. They carry out charitable missions and goals and are often committed to the pursuit of social welfare and social change. For example, The Humane Society is a CoPurpose that works to prevent animal cruelty by rescuing and caring for animals, through animal advocacy, and educating the public [103]. Societal or social problems are often determined by the culture from which they emerge, but there are also social conditions, which are problems regardless of

personal or cultural opinion [31]. Eitzen et al. argue that conditions in society such as poverty, racism, sexism that cause material or psychological suffering for parts of the population are problems in any setting or culture. Globally, addressing social justice issues requires the cooperation of many nations. Unresolved social problems for specific sub-populations can become problems for everyone, as these issues prevent members of society from developing and using their full potential, therefore limiting the collective potential of the wider-society.

In this dissertation, the characterization of communities of purpose is not inclusive of groups of individuals focused on change with respect to themselves (i.e. weight loss or career advancement) [64]. Attention is placed on groups of individuals whose efforts and activities are directed towards others in need of assistance (i.e. homeless women and children or endangered species) as they collectively attempt to create a transformational, higher order change [108]. In the United States, populations assisted by communities of purpose include children, the mentally ill, at-risk youth, cancer patients, African-American boys, homeless persons, elderly persons, victims of HIV/AIDS, and the economically disadvantaged. In America, there are ethnic disparities in poverty, placing certain youth ethnic groups at greater risk of injury, mortality and entry into the juvenile justice system. Children living in poverty are at greater risk of behavioral and emotional problems [106]. The poor are also subject to poor nutrition and chronic conditions such as asthma, anemia, and pneumonia. Homeless exposure to the elements and unsanitary living conditions can also lead to frostbite, leg ulcers and upper respiratory infections [96]. These barriers prevent vulnerable populations from fully participating in economic, social and political life. Without proper nutrition, shelter, and health care, vulnerable populations are unable to properly participate in our educational systems and labor market. Thus, they become excluded from society causing even more complex problems. Exclusion makes societies not only less cohesive, but also less safe and productive for all [79]. On a

global level, the impacts of local social conditions are increasingly interconnected and interdependent. Extreme poverty and growing inequality between countries or within countries themselves are a breeding ground for instability and conflict. Persistent poverty and oppression can lead to hopelessness and despair, historically causing havens for terror. Providing the poor with opportunities to develop their potential is not just a moral obligation, it is also good economics [116].

First this dissertation describes common characteristics and patterns among various Communities of Purpose and then presents an understanding of the behavior of individuals that make up Communities of Purpose. Using Network Science, this work then examines the relationships between and among the individuals who collectively form this network of action. Analysis reveals complex characteristics of the communities' structure and functions, contributing to a possible approach to help Communities of Purpose become more successful at reaching their intended outcomes. The goal in studying Communities of Purpose as complex systems is to extract general principles. Another goal is to study the global outcomes of the social system to find if the community is effective and responsive towards its purpose. This work explores whether it is possible to technologically intervene to improve individual outcomes, system outcomes, or both.

CHAPTER 2: COMPLEXITY AND COMPLEX SYSTEMS

Most events and phenomena are connected [25], caused by, and interacting with a huge number of other pieces of a complex universal puzzle. People have come to see that they live in a small world [74], where everything is linked to everything else [6]. Communities of social organisms such as ants, bees, and humans demonstrate complexity as they collaboratively build structures which increase their likelihood of survival [75]. The mysteries of nature, life, and even global economic markets display common properties and are at the center of complex systems research. Social systems, insect colonies, the human brain, and economies are real world examples of complex systems [66, 35, 51, 3]. Organized complexity describes a middle-region of problems that are not as simplistic as two-variable problems and yet not as large as two-billion variable problems, both solvable through traditional statistics. Organized complexity problems involve dealing simultaneously with a sizable number of factors which are interrelated into an organic whole [110].

2.1 Complex Systems

Complex systems is an interdisciplinary field of research that seeks to explain how relationships between parts form a collective whole [5] which then creates patterns and uses information without the benefit of any central authority. There is general agreement on the basic definition of a system, however the one upon which this dissertation builds emphasizes the existence of boundaries. “A system is defined as a set of components interacting with each other and a boundary which possesses the property of filtering both the kind and rate of flow of inputs and outputs to and from the system” [11]. For example, society depends highly on transportation systems,

health care systems, supply chain systems, and military systems. Their complexity is characterized by all of the interdependent sub-systems of people and machines, which are interacting to make the larger-scale system work and consequently useful to society as a whole. This reliance demonstrates how systems and underlying networks that govern our existence are essential. Even though each field within complex systems research (i.e. physics, anthropology, cognitive science) develops tools for addressing the complexity of the systems in their domain, many of these contributions can be adapted for more general use by recognizing their universal applicability [5]. The rapid increase in interest in complexity science, or the study of complex systems, is being driven predominantly by new challenges and demands in technology [85]. This is partially due to the availability of computing resources with sufficient power to model large-scale complex systems such as metabolic networks [55] and investigate new ways of approaching system design [99]. Computer modeling and simulation create opportunities to design and analyze these large-scale complex systems in a safe and cost effective way [70]. Computational modeling allows new approaches that were not previously testable. There is a danger associated with the mysteries of complex systems. When society depends on them to behave predictably, what happens to society when systems and networks come under stress [6]? This is one reason why new approaches to design, engineer, manage and control complex systems are urgently needed, producing a demand from industry to both drive new research at universities and seek new graduates trained to understand and deal with complexity [85]. The danger associated with misunderstood complexity provides motivation for this dissertation as well.

2.2 Self-Organization and Emergence

Social behavior is largely motivated by the pursuit of information [24]. Complex systems will differ widely in their physical attributes, but they resemble one another in the way they handle information [38]. When these systems exhibit organized

behavior without a central authority, they are characterized as self-organizing [75]. When complexity arises there is typically behavior that on the surface might appear random but actually has an underlying order [52]. This complexity often counter-intuitively emerges from simple processes, that though simple, can produce multiple possible outcomes based on initial conditions [58]. Such as in weather systems, this “Butterfly Effect” [65] or sensitive dependence on initial conditions, can produce unpredictability and chaos [39]. In philosophy, the principle of Holism was summarized by Aristotle as “*The whole is more than the sum of its parts*” [92]. Likewise, group behavior is not simply a sum of its parts. It is explained in a variety of ways by many disciplines such as through the collective decision making of ants [9], the role of force in human crowd behavior [49], human panic behavior [48], the transfer of emotions among people in a group, [7], effects of anonymity, [87], and human herding [90]. The macroscopic, or large-scale behavior of complex systems is described as emergent because it is produced not by the individuals, but by the interactions of the group. The concept of self-organization and emergence is central in theories of complex systems. Emergence refers to higher order behavior that arises from underlying complexity [81]. Complexity research seeks to understand how this emergent behavior comes about.

2.3 Complex Networks

Complex networks, like society, naturally occur in our world. Traditionally, these networks were viewed as randomly connected with equal probability. A network is simply a collection of points joined together in pairs by lines. The points are referred to as *vertices* or *nodes* and the lines are *edges* or *links*. As previously discussed, complex systems are composed of individual parts connected in some way to create an organic whole. Many of these systems can be thought of as networks. Network Science is concerned with understanding and modeling the behavior of real-world networked systems [63]. With the help of Network Science, we have a much better

understanding of the structure of these networks as well as the impact of structure on network behavior. Real networks, like society, are too large to describe explicitly [13]. In order to overcome this problem, network models must be considered. Such models provide valuable insight, such as how ideas spread throughout society [105].

Historically, the study of complex networks has occurred as topological concepts expand within the area of graph theory. Characterizing these networks' topological patterns can provide insights into the structure and function of the original system [1]. Topology, a construct that originated in mathematics, is the way in which essential parts are interrelated or arranged [14]. Topology can be used to abstract the inherent connectivity of objects while ignoring their physical form [101]. When trying to find a route for the Königsberg Bridges problem, mathematician Leonhard Euler began representing the problem by drawing points and lines forming a graph. Euler, laying the foundations of graph theory, showed that the possibility of a walk through a graph, traversing each edge (bridge) exactly once, depends on the degrees of the nodes. Therefore determining that this walk, or Eulerian path, was not possible [33] in the Königsberg Bridges problem. Erdos and Renyi introduced mathematical modeling of large-scale networks back in the late 1950s. According to the Erdos-Renyi (ER) model, we start with N nodes and connect every pair of nodes with probability p , creating a graph with approximately $pN(N-1)/2$ edges distributed randomly [32]. Over time, scientific advances in part due to computing power, have explored the accuracy of the ER model as it relates to real-world networks. The ability to access large databases and study networks containing millions of nodes revealed that many real networks, regardless of their purpose, share generic properties.

Network Theory helps us analyze larger networks, where visualization is less helpful, through the development of measures and metrics. *Centrality* quantifies how important vertices or edges are in a networked system. The *degree* of a vertex in a network is the number of edges that is attached to that vertex. A network can be

Table 1: Biological, physical, and social networks

Type of Network	Examples	Global Impact
Disease transmitting networks	HIV, influenza, TB, malaria	Speed of disease, epidemics
Ecological networks	Food webs, rain forest	Global weather and topography
Biological community networks	Insect societies, animal herds, bird flocks, schools of fish	Survival of selected species
Distribution grids	Electric power, water, supply, business supply chains	Efficient distribution of goods or commodities
Telecommunications infrastructure	Cellular, cable, TV, Internet	Instantaneous worldwide information distribution
Transportation networks	Airports, highways, railways, shipping	Rapid movement of goods from supplier to market
Electronic financial transaction networks	Banking, credit cards, ATMs	Electronic cashless transactions
Affiliation and acquaintance networks	Terrorist, community, business, religious, clubs	Efficient collaboration and activity coordination
Social services networks	Social Security, family services, Medicare, Medicaid	Efficient delivery of government services to large, distributed constituencies

directed if nodes can be related to one another from only one direction. Therefore, *in-degree* corresponds to the number of edges pointing inward to and *out-degree* corresponds to the number of edges pointing outward from the vertices. Vertices with unusually high degree are called *hubs*. Three concepts that have been widely developed in understanding the behavior and topology of complex networks are small worlds, clustering, and degree distribution. The *geodesic distance* between two vertices is the minimum number of edges one would have to traverse in order to get from one to the other, and is typically very small. This small world effect is known in popular culture as “six degrees of separation”. *Clusters*, or *communities* in networks, describe the idea that networks break up into smaller, tightly knit groups, within the larger network. Since the 1970’s, sociological perspectives have dominated network research [82]. A social network is a social structure made up of a set of social actors (such as individuals or organizations) and a set of the relational links between these actors. The social network perspective provides a set of methods for analyzing the structure of whole social entities, like Communities of Purpose, as well as a variety of theories explaining the patterns observed in these structures [107]. Social network analysis (SNA) has been applied to many groups including scientific collaborations [43, 44], criminals [94, 60, 76], online communities [111, 97] and animals [84].

CHAPTER 3: COMMUNITY AND COMPLEXITY

3.1 Defining Community

Community is important in many disciplines including sociology, anthropology, ecology, psychology, business, and communication [45, 102, 62, 71, 59, 37]. As a result, community has many definitions on many different levels of analysis. For example, there are territorial communities and relational communities [93]. The territorial and geographical notion of community is representative of one's neighborhood, the small town, or some other spatially-bound area. In this dissertation, I draw from perspectives of community as societal relationships, cognitive and symbolic structures, and sense of community [34, 2, 71]. I build upon prior work where relational community is formed among geographically dispersed groups. In this groups, community is fostered through shared learning, professional practice, personal interest, or other shared objectives [30, 61, 50]. As the various disciplines converge in their perspectives on community, the terms *community* and *society* are often used interchangeably but have very different meanings. Ferdinand Tonnies (1887) proposed a famous distinction between *Gemeinschaft* and *Gesellschaft* relationships. *Gemeinschaft* is often translated as “community” and *Gesellschaft* is often translated as “society” [45].

Gemeinschaft relationships are connected by a common tie or belief marked by unity of will such as a family, where *Gesellschaft* is a secondary relationship one engages in solely because they expect to benefit in some way from the interaction. Social status in *Gesellschaft* relationships is gained by work and/or education. *Gesellschaft* is also the German term for ‘company’ which helps to describe how these relationships were originally viewed as more professional and less personal. Sarason [95]

was the first to apply the term community to not only localities, but also to community institutions, families, street gangs, friends, neighbors, religious or fraternal bonds, and national professional organizations. Virtual communities, also known as online communities, are information and communication technology (ICT) mediated social spaces in the digital environment that allow groups to form and be sustained primarily through ongoing communication processes [4]. However, successful online communities have been found to hold both online and offline events from time to time [26]. The psychological perspective of community reveals that individuals who live in neighborhoods or spatially bounded communities may not feel as though they are a part of that community. This “sense” of community (SOC) is a feeling that members have belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together [71]. This psychological sense of community is derived as one that consists of a larger grouping of individuals who may not know all the other members but who share a sense of mutual commitment. Similarly, some online groupings also represent online communities, characterized by a “sense of virtual community” [12]. In the context of complex networks, a network is said to have community structure if the nodes of the network can be easily grouped into (potentially overlapping) sets of nodes such that each set of nodes is densely connected internally [75].

3.2 Communities of Purpose: What They Are Not

In the previous section, I discuss how communities that are not limited by geography can be characterized by their relational bonds and their psychological sense of community. It is through understanding how each relational community is distinct from another that this work builds, by developing a new relational community category. An extensive review of community literature revealed three closely related community types: communities of practice, communities of interest, and communities of purpose. Communities of Purpose have overlapping characteristics with communi-

Table 2: Relational community categories noting important overlapping and distinctive characteristics

Relational Community Category	Overlapping Traits	Distinctive Traits
Community of Practice(CoP)	Problem solving Social support Activity-based First-order change Formal or semi-formal organization Relational New member socialization Online and face-to-face [114, 115]	Shared professional practice Members are practitioners Members evolve practice Knowledge mapping Reusing assets Individual and group identity formation Skill improvement Structured leadership Work context [114, 113, 62, 116]
Community of Interest(CoI)	First-order change Relational Formal or semi-formal organization Online and face-to-face New member socialization [37, 51]	Shared recreational interest Learning as knowledge construction Variable lifespan [31, 19, 37, 51]

ties of practice and communities of interest, but they are not the same. To elaborate on my position, I build upon this argument by describing each relational community type in detail, then contrasting them to communities of purpose. Table 2 summarizes these two main relational community categories noting important overlapping and distinctive characteristics.

Over time, the significance of community as a territorial phenomenon has declined, while the significance of community as a relational phenomenon has grown. Relational communities are powerful structures that are not limited by geography, and are characterized by their relational bonds and their psychological sense of community [93]. Researchers from various domains have developed numerous categories for these relational communities as a way to distinguish them from one another. Overall, a relational community is concerned with quality of character of human relationship, without reference to location [45].

One such category, communities of practice (CoPs), are groups of people in organizations who come together to share what they know to learn from one another regarding some aspects of their work and to provide a social context for that work [113]. A CoP is more than a club or a network of connections between people. They

Table 3: Activities and discussion of communities of practice

Activity	Discussion
Problem solving	Can we work on this design and brainstorm some ideas; I'm stuck.
Requests for information	Where can I find the code to connect to the server?
Seeking experience	Has anyone dealt with a customer in this situation?
Reusing assets	I have a proposal for a local area network I wrote for a client last year. I can send it to you and you can easily tweak it for this new client.
Coordination and synergy	Can we combine our purchases of solvent to achieve bulk discounts?
Discussing developments	What do you think of the new CAD system? Does it really help?
Documentation projects	We have faced this problem five times now. Let us write it down once and for all.
Visits	Can we come and see your after-school program? We need to establish one in our city.
Mapping knowledge and identifying gaps	Who knows what, and what are we missing? What other groups should we connect with?

are distinctive mostly because all of their members are practitioners. Since a community of practice does not have a predefined lifespan, or a specific project which mobilizes its energies, it is characterized by a slow evolution and a high capacity to integrate new members [50]. CoPs develop their practice through the activities summarized in Table 3 [112]. Examples of professionals that exhibit CoP characteristics are nurses, web designers, urban planners, research scientists and educators. Lave and Wenger emphasize the importance of support and supervision required for learning professional practice [61]. They found that the novice was able to acquire the knowledge, skills, and attitudes required for the performance of a practice within a close work environment with seasoned professionals. Members of CoPs share practice, and personally benefit from participation by either advancing their own practice (i.e. the teaching profession) or advancing their skill set within the practice (i.e. learning to develop rubrics).

Another relational community type, communities of interest (CoIs), are a gathering of people assembled around a topic of shared interest [50]. CoIs can also be formed around activities and interests that are undertaken for pleasure during one's leisure time such as athletics, creative pursuits, or personal development tasks. Members take part in CoIs to exchange information, to obtain answers to personal questions or problems, to improve their understanding of a subject, to share common passions or

to just play [50]. Members of communities of interest typically do not receive a salary or other professional compensation for their shared interest. In contrast, while members of communities of practice may participate in the community voluntarily, they receive a salary from their respective organizations for their shared practice. Since the activity of a community of interest does not correspond to a collective endeavor, the members do not systematically expect each other to share their individually appropriated knowledge and do not feel responsible for sharing how they individually use this knowledge. [50]. In workplace contexts, CoIs bring together stakeholders from different CoPs to solve a particular (design) problem of common concern. They can be thought of as a community of representatives of communities [19]. Therefore stakeholder driven communities of interest are often more temporary than communities of practice because they come together in the context of a specific project and dissolve after the project has ended [36]. The members of this type of community identify themselves more to the topic of interest of the group than to its members. Since the activity is not directed towards the realization of collective productions or a collective use of common artifacts (as does CoPs), the learning that results from the participation in CoIs consists of knowledge construction, which is more individual and personal than collective. Therefore, the synergy of CoIs cannot be assimilated into that of a formal group motivated by a common goal [50] making them distinct from communities of purpose. CoIs share an interest, such as basket weaving, in which members also personally benefit from participation by developing their interest(i.e. learning new patterns and styles). Members can also personally benefit by just having fun through their shared activity of interest as in playing sports together.

There are some overlapping characteristics among communities of practice and communities of interest. Both communities of practice and communities of interest have a substantial amount of research literature upon which to draw clear characteristics such as member experience seeking, knowledge mapping, or temporary com-

munity formation [113, 36]. Conversely, communities of purpose are significantly under defined in prior research literature. Wikipedia defines community of purpose as a community of people who are going through the same process or are trying to achieve a similar objective, but this definition is not embedded in the world of scholarly discourse. Moreover, Wikipedia offers few citations and no verifiable references to support the brief contribution. Similarly, eModeration, a social media management company, published a white paper on communities of purpose in 2010, defining them as an online community of people with a common, clear, defined goal. Similar to Wikipedia, the eModeration paper [64] cites blogs and other social marketing companies who only wish to create new communities rather than study and enhance existing ones. Consequently, this dissertation aims to make a contribution by reducing this profound knowledge gap. This work advances the knowledge of what makes communities of purpose distinct, and what factors hinder or contribute to achieving their intended goals and objectives.

CHAPTER 4: COMMUNITIES OF PURPOSE

With a wealth of knowledge about what communities of purpose are not, I conducted a qualitative study to better understand how they are defined, structured, and distinct. I sought more language to describe groups of individuals who collectively address what they believe is a societal problem, and are not doing so as a part of their professional practice. These individuals, mostly volunteers, can be seen everywhere, organizing themselves to move towards a shared purpose, yet social problems seem to persist. Using the underlying assumption that these collectives are also complex, my initial study sought to understand the relationships between the parts that formed their collective whole -the community. I explore questions such as: *Do these communities exhibit patterns?* , *How do they use information?* , *What are their face-to-face and online interactions?*

4.1 Understanding Communities of Purpose: A Constant Comparative Analysis

Initially, I began by conceptualizing the components of these communities as two groups of people with corresponding perspectives: leaders and members. Community leaders who have held a leadership position within their organization for at least one year were eligible to participate in the study. Community members who were not in a leadership role, but who have been active members within their organization for at least one year were also eligible to participate. Using open-ended questions, I conducted interviews to solicit feelings, experiences, and impressions from study participants who represented various community of purpose groups. Particular emphasis was placed on activities that were relevant to the communities' purpose. Example interview questions include, *How do leaders and other members interact with each*

other to achieve the goals of your community organization?, How do you communicate participation needs and desired outcomes to other community members?, How do you know, as a member, what you need to do to best support your community at any given time? and How does online interaction support the purpose, goals, and communication needs of your community organization?.

To obtain organizational characteristics such as length of operation, and total membership, I made observations from community marketing materials and public facing community websites. I used constant comparative analysis to iteratively relate ideas presented in the interview transcripts. The focus of the analysis was to understand patterns of behavior across all organizations or identify particular impacts or problems impeding desired community participation needs. The scope of this study was limited to one or two interviews per organization due to time and investigator limitations. A focus group was conducted with members of one of the organizations and individual interviews were conducted with members who comprised the remaining five organizations. There were a total of 19 participants in the study, 12 females and seven males who were either active members or active leaders of community organization in the local area. Overall, the participants represented six different community organizations in Charlotte, NC. Table 4 presents a summary of the number of participants per community organization. Following data analysis, I determined that the results from one of the six organizations were vastly different from the others. The members in this organization were financially incentivized to participate in the community organization and did not consider themselves volunteers. Therefore, the sixth organization was excluded from the results.

4.2 An Overview of Five Communities of Purpose

The organizations that participated in the study and their respective community purposes are described in the following paragraphs with pseudonyms in place of their actual names. I summarize descriptive characteristics of these groups in Table 5.

Table 4: A breakdown of the total number of study participants by community organization.

Community Organization	Participant
WWC	P1, P2
MOP	P3, P4
PIE	P5
CAP	P6
WAN	P7
TOR (not included)	Group (P8 P19)

Women World Changers (WWC) is an international service organization comprised of only women who address global poverty, economic security, social justice and human rights. This organization creates strong partnerships with educational institutions to develop female leaders who through various programs and activities in their respective regions promote peace and improve the quality of life for citizens worldwide.

Men of Prominence (MOP) is a national community outreach organization comprised of only men who use education as a catalyst to change humanity. This organization implements a variety of mentoring programs to boys throughout the United States that stress the importance of personal development through the belief that all people should act with warmth and equality toward one another, regardless of differences in race, creed, or nationality.

Partners in Education (PIE) is an educational reform initiative that expands the learning day for students attending middle schools in low-income communities. This organization engages thousands of volunteers annually nationwide and serves thousands of students. PIE runs for three hours in the afternoon after-school each weekday, seeking to close the academic achievement gap.

Choices after Pregnancy (CAP) is an organization that provides information and support to anyone dealing with the trial of unintended pregnancy. This organization provides services such as pregnancy testing, counseling, referrals, and support groups free of charge. CAP emphasizes to their volunteers the importance of providing a caring, informative, and safe environment within which they listen acutely to the

Table 5: A summary of the five community organizations represented in the study. Each organization is characterized in terms of years in existence, number of members, and organizational purpose.

Community Organization	Existence (In Years)	Scale (membership)	Organizational Purpose
Women World Changers	100 - 125	300K	Global poverty, economic security, human rights
Men of Prominence	100 - 125	200K	Education as a catalyst to change humanity
Partners in Education	25 - 50	5K	Education reform
Choices after Pregnancy	25 - 50	75K	Life of unborn children
The Womens Advocacy Network	150 - 175	2M	Womens empowerment

pregnancy concerns of the women who contact them.

The Women’s Advocacy Network (WAN) is one of the largest and culturally diverse women's organizations in the world. This organization serves several thousand women and children annually through economic, health and racial justice programs. They have also been on the forefront of many American movements surrounding the empowerment of women.

4.3 Community Member Groupings

My results reveal that there were classes of people within these communities that were common across all organizations in the study. I call these groups *actors*, and further describe them and their corresponding characteristics throughout this section. These classes of actors do not reflect absolute, non-overlapping groupings. However, they begin to provide insight into how communities of purpose are structured. Consequently, I re-characterize the initial member and leader groupings into five actors *volunteer*, *leader*, *donor*, *partner* and *receiver*. Since this study’s initial recruiting strategy was to interview volunteer members and leaders, 86 percent of the study participants were unpaid volunteers, and the remaining 14 percent received some compensation and were clearly representative of the leader actor group. The remaining three community actor groupings emerged from participant comments, particularly as they described the resources and contributions that best supported community goals and who provided them. I summarize these actor groupings and their corresponding

Table 6: There were five common actor groups across all community organizations. I present a summary of each actor type and describe the distinct resources that each provided.

Actor Grouping	Actor Description	Resources They Provide
Volunteer	Persons who did unpaid work through or for the community organization	Time, pro bono services and facilitate human bonding
Leader	Hold a formal title within the organization or recognized formal authority, sometimes monetary contributors. In non-profit groups, could be a part of the board.	Staff, leadership service, provide oversight and vision
Donor	Engage with the community through monetary or tangible object donations only	Materials and funding
Partner	Other organizations with a related or similar purpose or mission	Referrals, community connections and funding
Receiver	A member of the target population who has received resources from the community organization	Motivation

resources provided to the community overall in Table 6.

4.4 Resources and Information

The resources provided by community of purpose volunteers and leaders were described in the interviews generally as both tangible and intangible resources. When participants in this study were asked to describe other active members of their organization, they all spoke of other members who showed passion for the work or purpose of their community. Participants describe the desire to make a difference as conveyed to others through “love” and “concern” for the welfare of others. When making decisions, leaders in particular were described as demonstrating “moral character”, pursuing the best interest of the community as a whole before taking action. Leaders were also described as being “open-minded” and “inclusive” of all people involved with the community regardless of factors such as socio-economic status, educational background, or age. A general theme of the intangible contributions of active members was the mention of members displaying an all around positive attitude. This sentiment was present in all of the interviews. Active members were described as “accountable” to fulfill tasks when assigned to them. Also, they were described as “strong”, “willing”, and “proactive” in seeking to address known issues in their local community. These members were acknowledged for their propensity to

“step up” and go beyond the expectations of others by voluntarily filling known, but often unexpected, resource gaps.

4.5 Active Giving: The Role of Volunteers, Donors, and Receivers

The members utilize their voluntary involvement to impact social change through the process of giving, also referenced in the interviews as “giving back”. Going hand in hand with positivity, this apparent culture of giving was described among all interviews. Our analysis revealed that none of the study participants described direct monetary gifts as active, meaningful volunteer participation. Since monetary gifts are still very important to communities of purpose, a distinction is noted in our actor groupings in Table 6 with a differentiation between “volunteer” and “donor”. WAN emphasizes this dependence on donations by stating, *“We are a non-profit. We function off of grants and other donations. One of our main donors is the United Way and we also received a grant from a corporate sponsor to help”*, [p7]. This participant also went on to describe in their interview a recent grant received by their organization to measure their community impact. According to our findings, meaningful active giving from a volunteer perspective is seen by members of this community as giving of a significant amount of time, personal resources (not limited to financial), distribution of items, voice, expertise, and socio-emotional support. Active members gave (willingly) several hours per week of their time, and some members provided access to their home or workplace for community meetings at no cost. The concept of giving through the use of personal resources was present in 80 percent of the interviews. Participants described actions such as making a direct purchase during specific times of need, *“She will pay for things sometimes out of pocket”*, [p2]. Items purchased at times were paid for directly from personal funds, and later reimbursed with organizational funds, though sometimes not reimbursed at all due to limited organizational budgets. The items purchased were intended to be used to further the communities' social cause, often for a group of other individuals in need of assistance.

Present among all participants, this group of others, or target population, is reflected in our actor groupings as “receivers”. Example items mentioned in the interviews, that were purchased and given to members of the target population include clothes, food, toys, and school supplies. In the MOP organization, offering the use of personal transportation for organizational use is an example act of giving. Participants across 80 percent of the organizations also recalled times where another member of their organization hosted a meeting in their home. Accountants, doctors and school officials who are members of MOP use the influence of their personal success to engage their professional networks. As stated by one participant, *“Someone might work for a school system and give access to the gym, auditorium or cafeteria to hold a program”*, [p4].

Participants also mention that members who have professional expertise give their skills and services when needed in support of the organizational purpose. One participant credits this for the success of their education initiatives, *“We have a lot more participation with that program because a lot of our members are teachers”*, [p1]. CAP utilizes the volunteer services of a registered nurse to help evaluate the health of the women they serve. One member also describes appreciatively, *“There are some trained and accredited counselors that are there to do volunteer work. They are not paid, they are totally volunteer”*, [p6]. A sincere time commitment is often needed from volunteers. Organizational leaders offer training to new volunteers to help explain the required level of time commitment as well as other other expectations. PIE requires new volunteers to complete formal training prior to full participation in programs or events. A volunteer for CAP describes their training process by stating, *“If you want to volunteer, you come in for a tour and they show you around and show you what they do, then they sign you up to come to training classes”*, [p6]. One of our leader participants explained that because their program requires a weekly volunteer commitment totaling over 40 hours monthly, they need to do a good job of equipping

new volunteers to be successful while also preparing them for what they will face. The leader of PIE expresses, “*A few years ago people would drop off after the first training because it was whoa, what did I get into? We are doing a better job communicating up front what the commitment looks like so there are no surprises*”, [p5]. There was an element of advocacy that was an inherent part of the volunteer and leader commitments. Participants from other organizations cite examples of other members giving through “voice”, noting: “*Volunteers become advocates outside of the classroom for education and education reform*”, [p5] and “*When we have events (for the local community), we are present at those as well, kind of like ambassadors for the organization.*”.

4.6 Social and Emotional Giving

Participants spoke of *volunteers* and *leaders* giving social and emotional support to the *receivers* by providing “hope”, “motivation”, and “transparency” as they carried out their service activities. A consistent theme in how participants describe their active participation is through acts of giving to a target population. Table 7 provides a summary of each community organization, their overall purpose, target population, and the acts of giving that support their purposes. WWC described their purposes as: “*All of our programs are surrounded around helping kids improve in their education*”, [p1], and CAP described their purpose as: “*we help mentor women who are in a crisis pregnancy*”, [p6]. Through mentoring or counseling programs, social and emotional support is inherently involved as they seek to form deeper connections. One participant characterizes this as, “*must have a willingness to be transparent and a willingness to serve*”, [p6]. For example, a member of WWC describes a program that targets women to convey what it means to be a beautiful woman and embrace beauty in all shapes and sizes. Another participant contributes the same sentiment, “*We want to find ways to better those around us, to lift them up...To me, to have a program that targets young women and can uplift them and give them self esteem,*

Table 7: A summary of the acts of giving carried out by each community organization and their target populations.

Community Organization	Target Population	Acts of Service
Women World Changers	Women and children	Tutoring, providing gifts to families during holidays, building homes
Men of Prominence	African American boys	Mentoring, motivational speaking to youth
Partners in Education	At risk youth	Afterschool education
Choices after Pregnancy	Unintended pregnant women	Counseling, support groups, healthcare programs
The Women's Advocacy Network	Economically disadvantaged women and children	Free health education programs for local community, free summer camps for children

I think is so important. I really felt like it was wonderful that we could do that and bond with different types of women and backgrounds in this program”, [p2].

P5 described an end of the year occasion designed to show support for their target population. *“Our events at the end of the program is a time when we all come together to support the students in the community, teachers, and parents in particular. Good opportunity for feedback on how we are doing”, [p5].* The volunteers in both the PIE and CAP organizations are purposefully trained on how to provide social and emotional support. One member of CAP describes, *“You come in and learn different ways you are supposed to talk to people and ways you are supposed to handle certain types of situations”, [p6].* The participant goes on to describe how showing support through listening plays out in practice, *“I let them do the talking because what we find is a lot of these young women don't have anybody to listen to them. They have never had anybody listen to them. So we listen and we help them start from where they are”, [p6].*

4.7 Community Bonding

It is worth noting that communities of purpose are not only providing social and emotional support through their relationships with the target populations. These communities also demonstrate social processes by which they strengthen and provide support to each other. Several participants described the relationship among volun-

teers and leaders in particular as familial in nature. When participants described the process of building relationships and bonding in their organizations, it was often coupled with a mealtime or food. P3 describes, *“I am part of the hospitality group in our organization. We make sure food and drinks are set up (at meetings)”*. P1 describes her role as one who helps plan formal social events to facilitate bonding among members, *“we have socials...maybe going out, maybe having dinner or lunch, and maybe just going to the movies”*. P3 continues to describe how bonding within the community occurs, *“We come together as a group on an official and unofficial basis to eat dinner and share with each other and in each other's lives”*. Due to the sensitive and confidential nature of the work accomplished by CAP, there was no mention in the interview about social, casual or mealtime activities among its members. P6 did however comment on the relational character of the organization's leaders. For example, *“all of the leaders at CAP are very relational. They know everybody and they keep track of everybody. It is really a good thing”*, [p6]. P5 also describes a community interaction with its partners, *“We hold lunch and learns with our corporate partners”*, demonstrating an example of using mealtime to connect with their partner organizations.

4.8 Wider Society Relationships

To build upon the significance of giving to a target population, all of the community organizations in our study spoke of how their organization operates within the wider society. What emerged is the notion that their community organization is only one of many vehicles operating to fulfill their purposes. Volunteers were aware that the work that they were doing fulfilled their local mission while also contributing to a greater cause with broader impact. Therefore, the community organizations in this study pursued their purposes in a wider context through community partnerships, represented in the actor groupings as *partner*. Comments that indicated how they interact with the wider society include, *“members can find events in their (local)*

Table 8: A summary of the partner organizations and institutions leveraged by the communities in this study.

Community Organization	Partner
WWC	K-12 schools, colleges and universities, clubs in the local community
MOP	Technical or vocational schools, community colleges, universities, K-12 schools
PIE	K-12 schools, corporations, universities
CAP	Churches, Department of social services
WAN	Corporations, community centers

community or globally, in a community in another area", [p4] and *"they are a part of a larger movement that is not specific to one (local) school and that it is affecting the whole nation"*, [p5]. These community organizations interacted with society as a whole through formal, public programs and events. For example, all five organizations mentioned some variation of both education and health care initiatives. They described activities such as providing math, science, and reading homework assistance after school with particular emphasis on under-performing students. Other programs included activities purposely designed to increase the college and career knowledge of at risk youth. Regarding health care, Men of Prominence spoke of seminars encouraging young men to avoid sexually transmitted diseases through abstinence. A summary of the partner organizations mentioned in the interviews are listed in Table 8. Communities of Purpose leverage their partnerships, usually with other organizations or institutions, to meet their purposes particularly when they have limited internal and external resources to do it themselves. To produce internal resources, they raise funds, often in engaging and creative ways. WWC described one of their fundraisers held annually, *"We have a ball and we invite others in the community to come together one night, get a chance to dress up and have fun. This helps us to raise money for our programs as well"*, [p1]. CAP described, *"the Fall one (fundraiser) is a dinner and silent auction* and WAN described, *"We do a lot of fundraising in the community"*, [p7].

4.9 Cooperation, Collaboration and Planning

In each of the organizations interviewed, member activities revolved around the planning and executing of their purposes through formal, public programs and events. We found that planning was a major theme across all of the communities of purpose in this study. The interviews revealed that members do not take their organizational purposes lightly or as an afterthought. The needs of their target populations were central to both planned, formal meetings and spontaneous, unplanned gatherings. The following quote from WAN explains this finding, *“we come together and have a lot of meetings to discuss what we see in our community that needs to be fixed”*, [p7] and from WWC, *“ even if some members are having lunch together, we will talk with each other about issues that are going on”*, [p2]. MOP explained, *“There is tons of coordination. We meet on a regular monthly basis to go over our guidelines”*, [p3]. Similarly, WAN provided a leader perspective by stating, *“within the organization we have monthly meetings where all of the program leaders come together and we update each other on what’s going on”*, [p7].

Communities of purpose participate in collaborative decision-making. To do so successfully, participants described how members engage in a problem resolution process to bring about organizational agreement. In each organization, new ideas were presented to the group for input, support or approval. WWC stated, *“Sometimes leaders will present issues to the members about what’s going on and what they want to change”*, [p2]. In another instance, the emergence of informal authority is described when a non-leader of MOP presented an idea and is equally heard and valued without a formal leadership role. *“We look to make group decisions. We have the person who presented the idea to lead that group because they have that vision”*, [p3]. Once a member presented a new idea of how to fulfill their purpose, the group will discuss the idea before moving forward. Each organization approached this process differently; however the collaborative nature of the discussions was consistent. MOP

described their process, *“we have our list of goals at each meeting and we decide what is important, it helps communication during the meeting to help us do whatever we may do”*, [p4]. CAP had some confidentiality involved in how the target population was served, yet they engaged in a collaborative process as well. *“So we don’t mention names, but bounce things off of each other”*, [p6]. WWC commented on the benefit of working in a smaller group during the planning process, *“We are a small group, so it is easier to talk things out as a whole and see things from the other’s viewpoint”*, [p1]. Once groups move beyond idea generation and into the planning process, possible obstacles are considered. Members of MOP explore the planning process through questions such as, *“What is capable of stopping it? What solution can we bring to the table?”*, [p3]. However, PIE entertained a similar dialog in their training sessions as opposed to in organizational planning meetings like the other three organizations. The PIE volunteers work collaboratively with organization leaders to move beyond the idea phase. They turned volunteer ideas into a curriculum that was meaningful and achievable given the program time-constraints.

Although participants described a general spirit of collaboration within their respective community organizations, participants also mentioned times where they did not necessarily agree or reach the correct solution. P1 stated, *“As with anything, you may have a little disagreement sometimes”*. P1 then went on to say how members of WWC been able to recover from poor decisions, *“If we try something, and everyone agrees on it, it may not work. We don’t say anything, just figure out what went wrong to fix it next time”*. P5 also revealed that there was a challenging side to the collaborative efforts of PIE, *“My role bridges program leaders and volunteers with external people. Sometimes it is good and sometimes can be very challenging. I am always in the background. I am brought in on more challenging relationships or if we run into some really big issues”*.

4.10 Technology for Coordination and Communication

The most common use of information and communications technology (ICT) across all organizations in this study was email. Volunteers email each other to coordinate event responsibilities. P2 stated that email provided an avenue for personalizing member interactions with the wider society, *“of course email, especially a personal email I think is really good to communicate with others who may not know what’s going on with WWC”*. P6 used email to communicate time constraints or needed schedule changes to the organization's volunteer coordinator, *“she gets my availability via email. I have let her know over the email a couple of days ahead like when I had a funeral to go to”*. P7 described their use of email in an expanded capacity, *“We also utilize email. We have a Gmail system within WAN and are always posting using the calendars and Gmail apps”*. The use of social media tools such as Facebook and Twitter is the second most common way for these organizations to promote programs, events, and recruit participation. P5 describes, *“We use Facebook and Twitter to do more brand awareness to connect with networks that we would not get in front of on a daily basis pounding the pavement. We have used online web site and social media to promote events that act as one time volunteer opportunities that get people in the door, excited about the program, then in the door for longer volunteer commitments”*. P1 also emphasizes the importance of these tools, *“we definitely put it on Facebook, which is a great tool to get our program out there and the issues that are out there”* and *“Twitter has been a great way to let people know what is going on”*. P7 described, *“We utilize all of the social networking outlets. Facebook, Twitter and things like that. We have pages and a twitter account as well just to kind of do an e-blast throughout all of our programs. Health related things, letting people know about ways they can volunteer. That’s a huge tool to get our message across”*. Members of PIE and WAN explained ways their organizations interact online to manage and distribute content. PIE adopted an online content management system for their volunteers, *“our online*

system is where training resources are housed, feedback can be given and they can look at example trainings and activities”, [p5]. As previously mentioned, WAN utilizes Gmail with extended capabilities through Google Applications. We consider this a form of content management and have thus included it in this section. P7 from WAN commented, “Within our organization, Gmail is a big tool that we use to stay organized”.

Overall, many of the participants in this study stressed the importance of online interaction to support their community organizations' purposes, while at the same time acknowledging that more should be done. P3 emphasized the overall importance of technology and communication for geographically dispersed members, *“A lot of our members could be distant members. Internet or online connections provide the opportunity for them to stay involved and really contribute through information or resources”*. Similarly, P7 also emphasized, *“We utilize technology to communicate and stay on top of each other. Very important”*. There were also comments from participants acknowledging their desire for more online interaction. P1 acknowledges, *“That is something they have been trying to improve upon is the online interaction. Trying to put things like our newsletter online and do more talking through online measures, but it is not really in the picture right now”*. P6 made a reference to not having the resources to replace out-dated technology, *“It can be more, I don't think they can afford to do it. They run a tight ship over there. The computer is very outdated (shakes head)”*. I have summarized the results in Table 9.

4.11 Challenges

The voluntary work done by members of communities of purpose whereby they provide acts of giving to others is not an end in itself but is a means to promoting social change. To bring about social change is not a trivial task, as various challenges faced by the communities emerged from our analysis of the participant interview data. The most common theme discussed among all study participants was the challenge

Table 9: A summary of how the community organizations in this study used information and communications technology (ICT) to carry out their organizational purposes.

ICT	Usage
Email	Personal email to engage social network with organization, volunteer communication, program evaluation through survey links, e-newsletter distribution
Text messages	Volunteer communication, scheduling volunteers, exchange ideas
Twitter	Let wider society know about current or future events, volunteer communication, marketing
Facebook	Distribute program information, inform wider society of community issues, engage volunteer social network, marketing, promote events, recruit new members
Public website	Communicate information to the general public, marketing, recruiting new members, call to action for volunteers and wider society
Content management system	Document organization, volunteer management, event scheduling, member organization

of having limited resources. At various times, each organization was challenged by a volunteer's limited availability of time, limited financial resources, or an overall lack of new volunteers to join in support of their causes. P5 described how personal issues can affect volunteer availability, *“Individuals get burned out which is not sustainable. If they move or something happens to their family they have to stop”*. P1 emphasized the same challenge, *“one of our leaders had to leave for another job out of state and we did not have anyone (to fill the position)”*. There is one case worth noting which recognizes the challenge of having volunteers with improper motives. P5 describes, *“Some people have their own agendas. Sometimes their participation is about getting their business running and getting the word out about what they are doing”*. To join with others and fight against major societal issues such as poverty and crime, can also be emotionally draining for members of communities of purpose. Many individuals within under-served, low-income, or marginalized target populations are dealing with some very troubling circumstances. In some cases, youth may exhibit behavioral and emotional problems [57], and social isolation can cause adults to suffer from depression, anxiety or aggression [10]. P6 described the emotional challenges of working with unintended pregnant women, *“people get very weary and could get a little frustrated with the culture. This is pretty heavy; some of the things women go*

through are very heavy. The registered nurse has got to get exhausted and weary with all of the things that she sees. Very tiring". Participants from PIE and WAN discuss the challenge of working with the youth in their target populations, *"A lot of these people have never walked into a school classroom before and I know, I was not the most comfortable with behavior management"*, [p5] and *"It takes a lot to work with children and every day, day in and day out. Especially those who come from a at risk background"*, [p7].

As previously discussed, Communities of Purpose used ICT tools to advance their missions and the overall purposes of their organization. P5 mentioned that only 35 percent of their volunteers used their content management system. When asked to describe further, P5 stated *"Not as high we would like it to be. One of our target sites is very rural, and an online system is a new concept to them. Technology access is a challenge. Firewalls in businesses those types of things. Frankly, it is another thing they have to do. Volunteers begin to use the system, but taper off and get lazy, then don't use the system. It is an older system and has some glitches. People who log in and cannot access the resources were discouraged from participating"* Members of WWC suggested that their organizations' technology use, or lack thereof, is a result of the reluctance of older members. P1 described this as *"older people who are stuck in their ways and don't want to change"* and P2 noted:, *"Since everyone is older in my org, they are not good about online interaction. It's like pulling teeth sometimes"*

4.12 Discussion: A Theory of Communities of Purpose

This study's key findings are outlined in Table 10 and then discussed further in this section. With study results, Communities of Purpose align well as an instance of Social Movement Theory, yet there are also notable distinctions as outlined in Table 11. A *social movement* is a set of opinions and beliefs in a population which represents preferences for changing some elements of the social structure or reward distribution of a society [69]. Researchers Zald and Ash suggest that social movements manifest

Table 10: The seven key characteristics found across all communities in this study. I describe this collection of attributes as a theory of Communities of Purpose.

Characteristic	Examples
Commit acts of giving	“Someone might work for a school system and give access to the gym, auditorium or cafeteria to hold a program.” “There are some trained and accredited counselors that are there to do volunteer work.”
Assist a target population	“All of our programs are surrounded around helping kids improve in their education
Provide social and emotional support	“We want to find ways to better those around us, to lift them up” “(Volunteers) must have a willingness to be transparent and a willingness to serve.” “We all come together to support the students in the community, teachers, and parents.”
Collaborative and strategic	“We come together and have a lot of meetings to discuss what we see in our community that needs to be fixed.” “There is tons of coordination. We meet on a regular monthly basis to go over our guidelines”
Exist within wider society	“They are a part of a larger movement that is not specific to one (local) school and that it is affecting the whole nation.”
Persist with challenges	“It takes a lot to work with children, especially those who come from an at risk background.”
Use information and communications technology	“We utilize all of the social networking outlets. Facebook, Twitter and things like that.”

themselves through organizations, making them social movement organizations or SMO's [117]. The collection of several social movement organizations around the same cause make up a social movement industry (SMI).

Similar to Communities of Purpose, SMO's are also characterized by an incentive structure in which purposive incentives predominate. Yet, Communities of Purpose exist at a smaller scale than social movement organizations. Drawing from a resource mobilization perspective of social movements, McCarthy and Zald expanded the meaning of the terms *Conscience adherent* and *Conscience constituents* [47]. McCarthy and Zald describe these groupings as individuals and organizations that believe in the goals of the movement and those providing resources [69]. Social movement organizations as described by social movement theory is also inclusive of the notion of a countermovement [69]. A countermovement consists of a set of opinions and beliefs in a population opposed to a social movement, which produces *opponents*. Restated, a social movement organization includes both those who support the goals and those who do not. Conversely, Communities of Purpose describe only those who hold the same set of opinions about a social cause. Therefore members of communities of

Table 11: A comparison of the observed characteristics of Communities of Purpose with social movement theory.

SMO Grouping	Social Movement Theory	Community of Purpose Comparison
Mass or Elite	Mass are those individuals and groups controlling very limited resource pools. Elites are those who control larger resource pools.	No distinction
Conscience or Beneficiary	Conscience describes those who do not stand to benefit directly from SMO success in goal accomplishment Beneficiary are those who would benefit directly from SMO goal accomplishment	Receivers are Beneficiary, volunteers, leaders, donors and partners are Conscience
Bystander Publics	Those nonadherents who are not opponents of the SM and its SMOs but who merely witness social movement activity.	Not considered
Adherents	Those individuals and organizations that believe in the goals of the movement	All participants are considered adherents
Nonadherents	Those individuals that are not adherents	Not included
Constituents	Those providing resources	All participants are considered constituents
Opponents	Those individuals and organizations that do not believe in the goals of the movement	Not included

purpose represent only a subset of the individuals identified within social movement organizations and in social movement theory.

Communities of Purpose help explain this specific subset of participants within a social movement organization as shown in Figure 1. As previously explained, Communities of Purpose focus their activities onto a target population. These receivers in Communities of Purpose are distinct from volunteer, leader, donor, and partner actors, further emphasizing a non-beneficiary relationship while also including beneficiaries (receivers) in the overall groupings. Additionally, Communities of Purpose present a conceptual distinction from social movement organizations, separating supporters and non-supporters (Nonadherents and opponents) into separate communities of their own.

This work does not deny the existence of a countermovement or set of individuals who do not believe in the goals of the community. I simply suggest that those with opposing beliefs will enact their purposes through a different Community of Purpose with no direct links to one another. This conceptualization could also be used to explain what happens when members of organizations with similar goals choose to “split” and form two community organizations instead of attempting to move forward



Figure 1: Concentric circles are used to demonstrate how Communities of Purpose help explain a specific subset of participants within a social movement organization.

as one community organization with supporters and participants that do not support the goals. Communities of Purpose are where movement networks first begin to form and the resulting social movement is an emergent property of the various communities at various scales that make up the system. With proper leaders, volunteers, and donors, a Community of Purpose can grow to form a social movement organization. At which point, there could also be a countermovement effecting the actions, counteractions and overall dynamics of the system. When SMOs form partnerships, a higher-order network is formed, and the social movement emerges. The presence of higher-order networks, and the individuals that support them, provides the greatest platform for second order, transformational change. It is based on this theory of Communities of Purpose, that I also suggest when social movement organizations are gathered in one place, they are better represented as organized networks instead of random crowds of individuals. I believe my conceptualization of Communities of Purpose could help provide the necessary mental model to accurately represent the emergence of social movements.

In the next chapter, I provide more context by examining the growth and develop-

ment of a specific Community of Purpose.

CHAPTER 5: STREET NEWSPAPERS, STRENGTHENING A NETWORK OF THE HOMELESS, VULNERABLY HOUSED, AND UNEMPLOYED : A CASE STUDY

Given the enormity of social problems, as well as the unique challenges faced by Communities of Purpose who organize to resolve them, this dissertation proposes a way for complex systems research to become a part of the solution. This work seeks to reduce the gap between how real networks operate, and the discipline's fundamental knowledge at this time. Now, with the broad understanding of Communities of Purpose presented previously, this research moving forward will focus more closely on just one Community of Purpose. Speak Up has a mission to provide an income opportunity for the homeless and those in poverty or at the verge of it. I begin this section with some background on the global state of poverty and homelessness. The hardships faced by individuals around the world further motivates the need for effective Community of Purpose groups.

5.1 World Poverty is a Complex Problem

Society is one of the most complex systems in science. The world population, meaning the total number of living humans on earth, was 7.349 billion as of July 1, 2015 according to the medium fertility estimate by the United Nations Department of Economic and Social Affairs, Population Division. The world population is projected to increase by more than one billion people within the next 15 years, reaching 8.5 billion in the year 2030 [78]. As our world's population continues to grow, there is great potential for growth in our most vulnerable groups. These include the economically disadvantaged, racial and ethnic minorities as well as the homeless [72]. Some of the most problematic social complexities tend to arise out of those experiencing poverty

in particular. Much of the recent literature on poverty conveys the notion that the structure of our economic system is the reason that poor people fall behind regardless of their individual strengths or weaknesses [89]. Furthermore, social stigma because of race, religious belief, mental health disorder, sexual orientation, or other categorization, is also often attributed to the poor having limited opportunities regardless of their personal capabilities [109]. In addition to the impact of racial discrimination, poor people are less influential in the political system that they might use to mobilize economic benefits and social justice in their favor [16]. If problems are left unresolved over time, situational poverty can lead to generational poverty.

There is a relationship between jobs and social cohesion that demonstrates a weakening of social ties with job loss [29]. Consequently, poverty reduction has long been the focus of the global development agenda along with a rising concern about trends in income inequality. In the last twenty years, income inequalities have increased in 65 out of 130 countries for which data are available [77]. These countries are home to 67 percent of the world's population. In South Asia alone, 44 percent of the population, around 730 million people, live just above the international extreme poverty line, earning between \$1.25 and \$2.50 a day, and could easily fall into poverty with a sudden change in circumstances [68]. As shown in Figure 2, global unemployment is set to reach 215 million in 2018.

Many poor people are at risk of homelessness because it is hard for them to afford housing. Unemployment, housing cost burden, and living with friends or family (doubled up) are indications of this struggle to afford housing. It is difficult for this population to afford the upfront costs demanded by landlords. The costs in a typical US city, could total more than \$2,000, including at least two months rent in advance and security deposits. Poverty itself is like a circular pathway, often noted as the cycle of poverty [83]. Evidence on the dynamics of poverty, indicates that poverty is less a state that applies to a fixed group of individuals than a condition

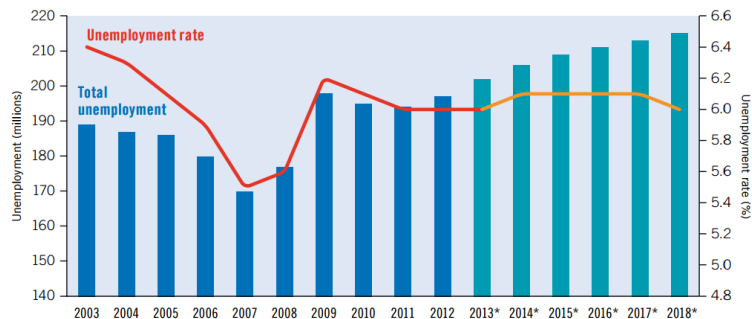


Figure 2: Global unemployment trends and projections, 2003-18, *Source: ILO, Trends Econometric Models, October 2013.*

that people are at risk of experiencing at some point in time, with the potential to move out of it and also the risk to fall back. The essence of this dynamic is captured throughout this dissertation in the context of homelessness through the use of the term *vulnerably housed*. If a person is currently housed and thus, not homeless, but at risk of falling on hard times due to the cycle of poverty, they are vulnerably housed and their situation is still a part of the broader homeless population. The path in and out of homelessness may have slight ups and downs, and it may look different for different people and societies. But ultimately, it is still trapping people in its redundant patterns.

Communities across the country respond to homelessness with a variety of programs: emergency shelters, transitional housing, rapid re-housing, and permanent supportive housing [17]. It is imperative that they neither slide back into poverty as a result of shocks, nor stagnate just above the extreme poverty line due to lack of opportunity [116]. Efforts to eradicate poverty often indirectly support poor people due to political barriers or other challenges. Unfortunately many anti-poverty efforts are ad hoc and uncoordinated. Issues surrounding poverty such as homelessness are viewed as problems that networks can manage better than single entities. If the problem of poverty is in the system, and not in the poor themselves, the best response is to change the system [16]. Therefore Communities of Purpose offer a promising

approach to catalyzing the appropriate societal changes. Moreover, social network analysis of these communities produces an alternate view, where the attributes of poor are less important than their relationships and ties with others within the system. It is argued, however, that many non-governmental organizations (NGOs) and faith-based groups as well as some governments, breed dependence [28] and self-doubt instead of social change. Polak and Warwick argue that relief of poverty will come when the poor themselves are able to become more productive and lift themselves out of poverty [86]. Framed as a market opportunity, this approach is effective when the poor has access to affordable tools that enable them to increase their productivity, improve their health, and expand their skills. However, their approach is most appropriate where there is no systemic problem.

5.2 Speak Up: A Response To Homelessness

Speak Up, the focus of this case study, is a volunteer-driven public nonprofit charity existing in the Charlotte, NC area since late 2011. Speak Up is a community organization that produces a “street publication” which in turn provides a source of income for vulnerably housed people and increases public conversation by covering issues of homelessness, poverty and social justice. Several Speak Up publication covers are represented in Figure 3. The publication tells personal stories of people living on the street, as well as of organizations working with people on the fringes of society. Street papers are newspapers or publications sold by homeless or poor individuals and produced mainly to support these populations. Most such newspapers are independent media, primarily providing coverage about homelessness and poverty-related issues. Street newspapers tackle poverty and homelessness using a social enterprise model. In addition to offering practical training in writing, marketing and sales, many street papers offer other social services to the homeless and vulnerably housed. There are over 115 street papers in 36 countries to date [53]. Street newspapers have touched the lives of a quarter of a million unemployed or low-income individuals worldwide



Figure 3: An illustration of the front covers of several issues of the Speak Up street publication.

since the early 1990's [53].

Through various recruiting efforts, Speak Up connects with people in the area who are homeless or low-income and conscious of life on the street. These individuals are invited to become Speak Up vendors, and sell the publication. Once trained, these vendors are not considered Speak Up employees, but are micro-business owners. Vendors buy copies of Speak Up for \$.80, then sell the publication for \$2.00, keeping the proceeds, including tips. This provides a legitimate alternative to panhandling and dependency on social services, which leads to dignity and hope. The relation between work and dignity is fundamental. It has been recognized by most world religions. The street paper concept is based on a social enterprise and self-help model that is successful in hundreds of cities around the globe. Social enterprise is a collective term for a range of organizations who leverage resources to address social problems [27].

5.3 The Speak Up Network Study

Understanding networks has important theoretical and practical consequences, particularly in grasping how leaders and their organizations operate and function [54]. As previously described, network analysis provides both a visual and a mathematical

analysis of human relationships. Since a network data set about Speak Up did not previously exist, I conducted a network study to create an accurate representation of this real-world network. During the course of one year and six months, from June 2013 through December 2014, I utilized a comprehensive data collection process to inform the creation of a network model of people in the Speak Up community and their relationships to each other. Through this approach, I sought to uncover the role and structure of The Speak Up community and the effect of its connectivity on the homeless and vulnerably housed.

My research approach consisted of three phases. The first phase was the same methodology used to create a theory of Communities of Purpose as described in Chapter 4. In this phase, I conducted interviews with Speak Up leaders and volunteers. It is worth noting that Speak Up does not directly sell publication subscriptions. Therefore, there was no core customer base to contact during this phase. I recorded all leader and volunteer interviews using a digital recording device, then later transcribed the comments. The interviews were open to anyone over 18 who was actively participating or connecting with the organization during the time of the study. I recruited active participants, defined as leaders or volunteers who attended at least one meeting, served on a committee, or attended or participated in a community event. The network was bounded (or restricted) by the same criterion, in addition to any person who interacted with Speak Up by way of partnership, donations, or online interaction. The goal of this first phase was to identify and categorize the community participants into actor groupings.

The second phase involved taking the known set of community participants, now regarded as network *actors* or *nodes*, and determine how to collect relational data about them. First, I observed the Speak Up community and identified existing organizational data from which I could model the relational connections (*edges* or *links*) between the actors. If there were no existing data, I developed instruments, such as

surveys, to collect them. This phase comprised of a variety of ethnographic methods such as face-to-face interviews, participatory observations, examination of secondary data, collection of cultural artifacts, and surveys. I attended weekly Speak Up community meetings and events so that I could also collect network interaction data based on observations. During each meeting or event, I observed the relationships also referred to as *ties* or *connections* between participants at the meetings. Specifically, I looked for ways to connect or tie the participants to one another. I observed similarities, which are shared attributes such as race and gender. I also observed social relations, such as family connections, friendships, or foes. I also observed interactions between community participants in general, noting who talks to whom and who does not. Secondary data sources include meeting attendance logs, vendor sales records, and Speak Up social media network data. Artifacts include several Speak Up publications, with articles written by vendors, and speak up marketing and recruiting materials. I captured data so that during analysis, I could make multiple connections between participants if needed. Later in this document, I will explain how the network was ultimately linked.

In the third phase, I collected data from the perspective of an information and communications technology (ICT) designer. Specifically to understand how to best support users as they carry out the Speak Up mission, with consideration for community culture and context. One of the guiding questions during this phase was, “*What specific consideration should be taken before building an ICT support tool for this community?*”. Through my work in developing a theory of Communities of Purpose, I found that these groups do utilize information and communications technology (ICT) at times, but mostly to support specific operational tasks. I was motivated by the notion that purpose-based groups could greatly benefit from real-time access to information about their evolving community network, even though many of their activities occur offline. In this phase, I considered the actors as potential users of a

Table 12: A summary of Speak Up actors, along with descriptions of their roles within the network. I used a variety of data collection methods based on the actor type.

Actor Grouping	Description	Data Sources
Vendors	Sellers of the publication, receivers of literacy, skills training, and socioemotional support	Network survey, semi-structured interviews meeting and event observations, event attendance logs, sales reports
Leaders	Executive directors and board members who handle oversight for the publication and the organization	Network survey, semi-structured interviews, meeting and event observations, event attendance logs
Volunteers	Help facilitate meetings, provide entertainment, give workshops, provide socioemotional support	Network survey, meeting and event observations, event attendance logs, social media interactions
Donors	Provide monetary donations, or other tangible items such as organizational t-shirts, publication printing, other marketing and promotional materials	Survey, records provided by leaders
Partners	Area organizations or non-profits who co-host community events or provide a venue for community activities	Indirect data, social media, event observations
Clients	People who buy the publication	Client survey

technology tool. I sought to undercover what component or set of components could best serve as the underlying infrastructure for technologies supporting Speak Up or other street newspapers. To gather this data in particular, I added probing questions to the network surveys.

The first phase of the study lasted approximately three weeks. I was able to identify six types of community participants, or *actors*. This initial characterization of the Speak Up community actors was: Vendors, Leaders, Volunteers, Donors, Partners, and Clients. The second and third phase, representing various methods of data collection, covered a time span of approximately 8 months. A description of the Speak Up actors, along with data collection methods for each type, are summarized in Table 12.

To conduct the network study, I designed three surveys. The first survey was designed for the vendors of Speak Up. Due to time constraints, I selected a small subset of the Speak Up community to participate in an interview with me. The interview questions were the same as the vendor survey questions, but read aloud. Prior to this level of participation in the study, community members were given written or verbal informed consent. The second survey was designed for the Speak

Up supporters, including volunteers and donors. Speak Up supporters were invited to complete their network survey online. The third survey was developed to get data from the clients who purchased Speak Up from vendors. The questions on the three surveys used in this study were a combination of researcher-designed and questions from existing instruments.

Vendors were asked a series of questions related to their background, and network ties within the Speak Up community. Most of the vendors completed the survey in a semi-structured interview format. Their responses to the questions (appendix A) were recorded, and later transcribed. Additionally, the vendor network survey included items that specifically dealt with factors related to being homeless or vulnerably housed. The questions specific to homelessness were adapted from the National Survey of Homeless Assistance Providers and Clients (NSHAPC), so future comparisons can be made as needed between the results in this study and those of demographically similar groups. I also included questions that could provide some indication of the level of “hope” a Vendor felt. According to literature on homelessness, “hope” is an important construct for future success in challenging times. To help inform relational measures, the vendor survey included questions from the Adult Hope Scale (AHS). This scale measures Snyder’s cognitive model of hope as a positive motivational state based on a sense of goal-directed energy, and planning to meet goals [98]. Lastly to support location-based analysis, the vendor survey included questions designed to capture where Vendor sales had taken place. The actual survey questions are included in the appendices.

Using network data collected from phase one and phase two, this research represents all of the people as actors in the network, and their relationships to the other actors in the network as ties. Each actor was connected to other actors (when applicable) until the complete Speak Up network was represented. I explored a visualization of the data by displaying nodes and ties in various layouts, and attributing colors,

Table 13: Some social network analysis measures differ in their applications. Here, I describe some of the most widely used.

Measure	Description
Betweenness	The extent to which a node lies between other nodes in the network.
Bridge	And edge that keeps different network components from being disconnected
Centrality	Indicates, how well a node is connected in the network. “Betweenness”, “Closeness”, and “Degree” are centrality measures
Closeness	The degree an individual is near all other individuals in a network
Clustering Coefficient	The likelihood that two associates of a node are associates themselves.
Cohesion	The degree to which actors are connected directly to each other by cohesive bonds.
Degree	The count of the number of ties to other actors in the network.
Density	The proportion of ties in a network relative to the total number possible.
Eigenvector Centrality	A measure of the importance of a node in a network.
Reach	The degree any member of a network can reach other members of the network.
Structural Hole	Static holes that can be strategically filled by connecting one or more links to link together other points.

size and other properties to nodes. Once the network was mapped, I applied social network analysis techniques to characterize its topological and structural features. The relationships and interactions between people in a community were quantified through this method. These analysis measures are summarized in Table 13. I used a variety of software tools to facilitate and support the qualitative and quantitative analysis as described. These tools include Gephi [8], NodeXL [46], UCINET and NetDraw [15].

5.4 Results

Network analysis must take into account both the relations that occur and those that do not exist among the actors. As a starting point for this level of network analysis, I created a binary matrix representing the interactions between the actor categories at a high level. At this point in the data collection I could only hypothesize as to how the various actors were interacting based on the overall mission and aim of the organization as well as through preliminary qualitative comments from leaders. For example, if I supposed that two actors interacted with one another in any way, I entered a one into the matrix to represent this tie. If there should be no interaction, based on my initial understanding of the community, I entered a zero. The resulting initial adjacency matrix is presented in Table 14

Table 14: An preliminary binary matrix of actor relationships with entries from the boolean domain, $B = 0, 1$. A ‘1’ indicates a relationship is present between the actors.

Actor	Vendor	Leader	Volunteer	Donor	Partner	Client
Vendor	1	1	1	1	1	1
Leader	1	1	1	1	1	1
Volunteer	1	1	1	1	0	1
Donor	1	1	1	1	0	1
Partner	1	1	1	0	1	0
Client	1	1	1	1	0	1

Table 15: The relationships between actors in the Speak Up community are summarized in this matrix as boundary penetration (B), transaction (T), communication (C), and instrumental (I).

Actor	Client	Leader	Partner	Supporter	Vendor	Volunteer
Client	B	C			C, T, B	
Leader	C	C, B, I	C, B, I	C, I, T	C, I, T	C, I
Partner		B, C, I	B			
Supporter		I, C, T		B		
Vendor	T, B, C	I, C, T	B	B	C, B	C, B
Volunteer		C, I, B			C, B	B

Next, I paired the qualitative comments from my preliminary interviews with network analysis literature, to characterize the relationships between actors in Table 15. The relationships between these actors are based on four common relational types: transaction [21], communication [91], boundary penetration [22], and instrumental [42] and [41]. Transaction relations occur where actors exchange control over physical or symbolic media of tangible value. Communication relations occur where actors exchange messages to one another in a system. Boundary penetration relations occur where the ties between actors consist of common sub components such as serving on the same board or co-membership. Instrumental relations occur where actors contact one another to secure something of intangible value such as participation recruitment, advice, information or services.

5.4.1 Twitter Social Media

Twitter is one of the most popular social media platforms, used by countless organizations to reach out to supporters and share information. Figure 5 visualizes the Speak Up network, as *friends*, those who Speak up is following, and *followers*, those who are following Speak Up. Some of these relationships are reciprocal in that they

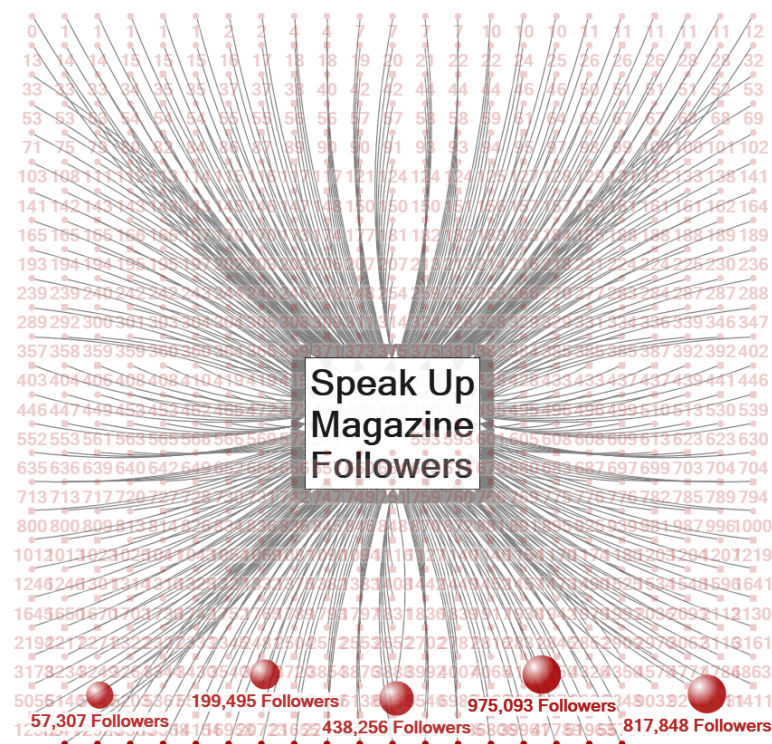


Figure 4: Speak Up Twitter followers, a measure of network reachability. Node sized mapped to the followers who have a high number of followers.

follow each other. Speak Up has 595 followers, or people who subscribe to receive messages from them and 593 friends, or those they follow.

Figure 4 visualizes the top 5 friends with the most number of followers in Speak Up's Twitter network. Nodes in the inner circle of Figure 5 are reciprocated. Nodes represented in the outer circle are not. A distribution of the number of people following Speak Up's “followers” is represented in Figure 6. If the top 5 followers in the Speak Up Twitter network, *retweets*, or shares information from Speak Up to their followers, the follower reach would be close to 2.5 million users.

Since I was only able to obtain ego-centric Twitter data, Speak Up is the most important node in its network in terms of betweenness centrality. It is important to note that there could be more connections that I am not aware of based on this data. However from the connections that I could obtain, there were no others in the Twitter network providing an information advantage to Speak Up. It is also worth

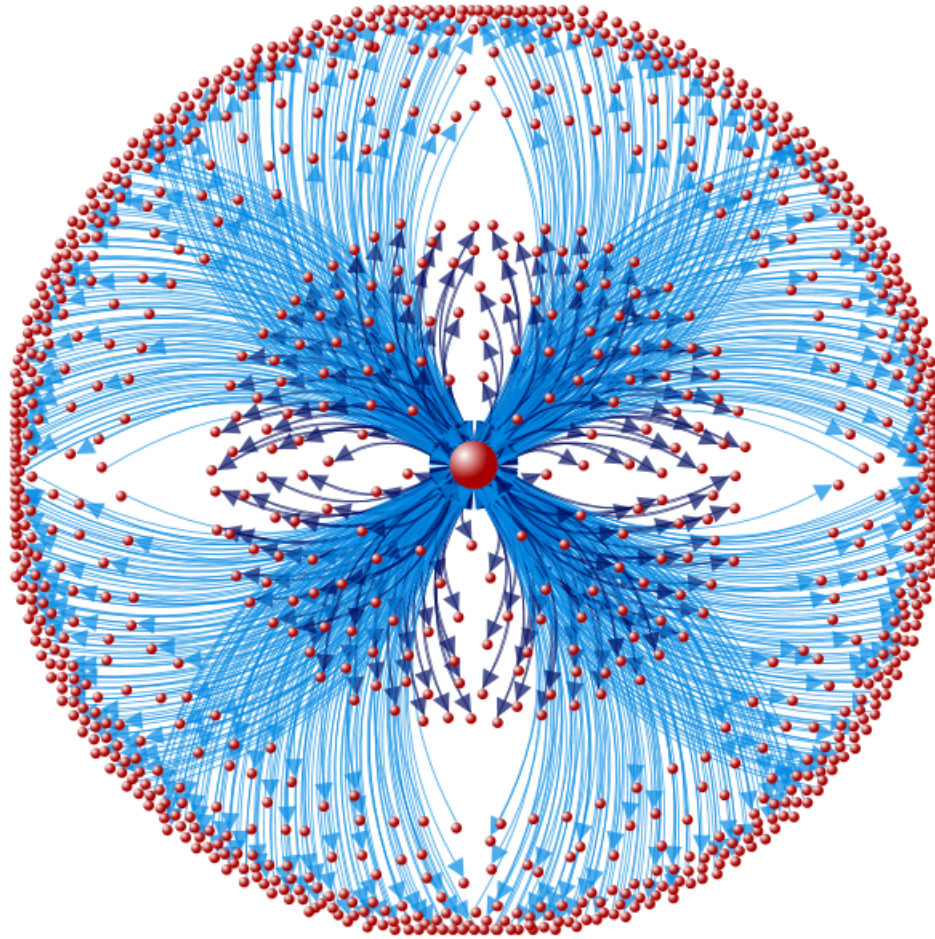


Figure 5: This figure demonstrates the amount of reciprocal relationships between Speak Up and its Twitter network. Reciprocal nodes are visualized in the center and non-reciprocal nodes are along the outer circle.

noting that the Speak Up Twitter network was mostly located in the Eastern Time Zone. In the visualization in Figure 7, I have grouped specific locations such as city and state, to preserve network anonymity.

5.4.2 Facebook Social Media

Twitter network analysis provides a good measure of information flow between a network, but Facebook data does not really describe the flow of information. They provide information on paths of mutual awareness. Using the Facebook API, I have captured data about the Speak Up “like” network. Clicking “like” below a Facebook post on Facebook makes others aware that you enjoyed it without leaving a written

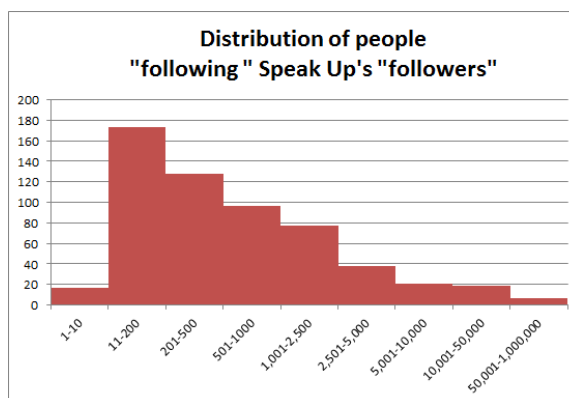


Figure 6: Distribution of Twitter “follower” reach. Many of Speak Up's followers have over 200 friends. This illustrates the potential reach of the Speak Up Facebook network.

Table 16: A summary of Facebook network properties of Speak Up. The measure of reciprocity in this network is low at 11%.

Network Property	Result
Total nodes	598
Total edges	17,581
Average degree	39
Percent reciprocity	11%

response.

The Speak Up Facebook network consisted of 593 nodes and 17,581 edges. Reciprocity involves interactions of giving and returning. In this network, the *degree* refers to the number of mutual connections. Percent reciprocity was low at only 11% as summarized in Table 16 along with other network properties. A degree distribution of the network is shown in Figure 8.

As with most Facebook networks, nodes in the Speak Up Facebook like network are clustered into groups. Figure 9 shows a visualization of the network, representing the most important people between clusters with larger nodes. One of the most notable features of this network is a cluster of nodes that is only connected to the rest of the network by one other node as shown in Figure 10.

This person received 152 “likes” for a post describing a personal experience with the homeless population. Through a single post, this person was connected to only one

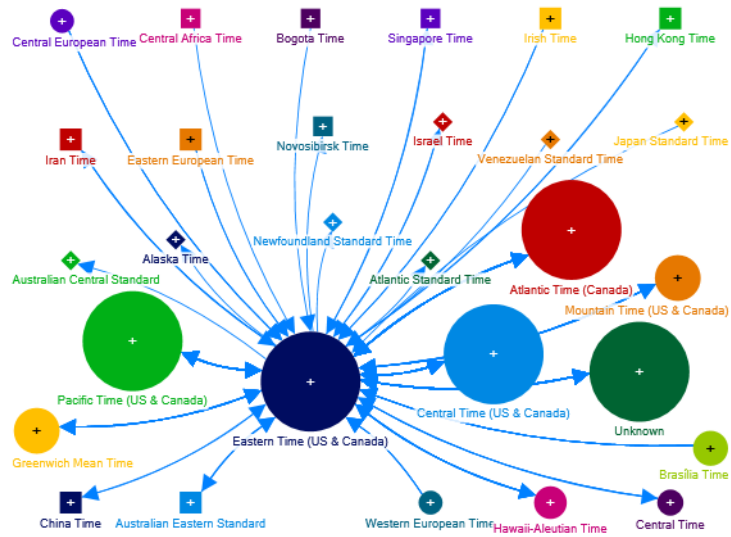


Figure 7: A visualization of the Speak Up Twitter network grouped and colored by time zone. Node size is mapped to the number actors in the same time zone. Edges with arrows demonstrate “follower” relationships.

other member of the Speak Up network, resulting in the highest value of betweenness centrality in the network. Though this node ‘A’ is important, they receive little attention from the rest of the network. According to their measure of eigenvector centrality, they are not paid attention to by others who are also paid attention to in the network. Moreover, the absence of other time connections to the nodes that ‘A’ is connected with, presents a structural hole in the network. The most important node according to this measure has the highest value of eigenvector centrality, and the second highest values of betweenness centrality in the network.

New, smaller clustered components appear on the outskirts of the network as Speak Up engages new people. Figure 10 shows another visualization, drilling down even further to capture only the four main clusters in the Facebook network. Clusters in the network visualization are mapped into groups using the colors aqua, navy, green, and bright red. The bright red cluster is the largest, with 337 nodes and 8,221 edges. This cluster is also very important to the network as many of the nodes have a high

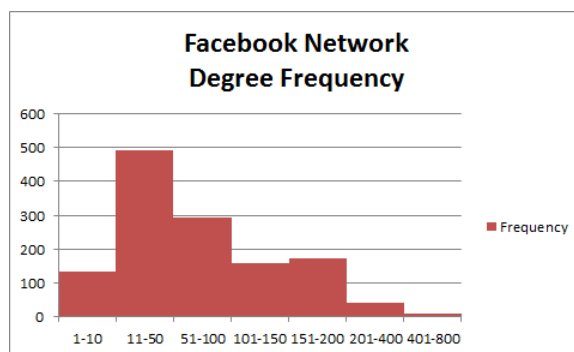


Figure 8: In a Facebook network, “degree” refers to the number of mutual connections. This histogram shows the degree distribution of Speak Up's Facebook network, specifying for each possible degree how many nodes have that degree. Therefore, the majority of nodes in this network are connected to no more than 50 others in the network.

value of betweenness centrality as well. High betweenness centrality is characterized by larger node size. The other actors in this network with high betweenness are likely very familiar with the Speak Up members.

5.4.3 Network Affiliations: Activities and Events

In an affiliation network, connections are indirect because relationships between actors are inferred by them being involved in the same event or activity. This co-attendance is evidence that the actors had an opportunity to connect, and provides the conditions for them to develop direct links. Using log data from 14 Speak Up events, I created an affiliation network of the Speak Up community. A portion of the affiliation matrix is presented in Figure 11. It consists of a total of 54 actors attending events within a four month time frame. 85% of the event attendees were vendors, 4% leaders and 13% volunteers. After converting the affiliation data to co-attendance links, I created the network visualization presented in Figure 13. It is worth noting this face-to-face event participation was much lower than the actual network size, with approximately 30% overall participation from the vendor population and no participation from clients or donors. Low attendance reduced the opportunity for the actors to create ties.

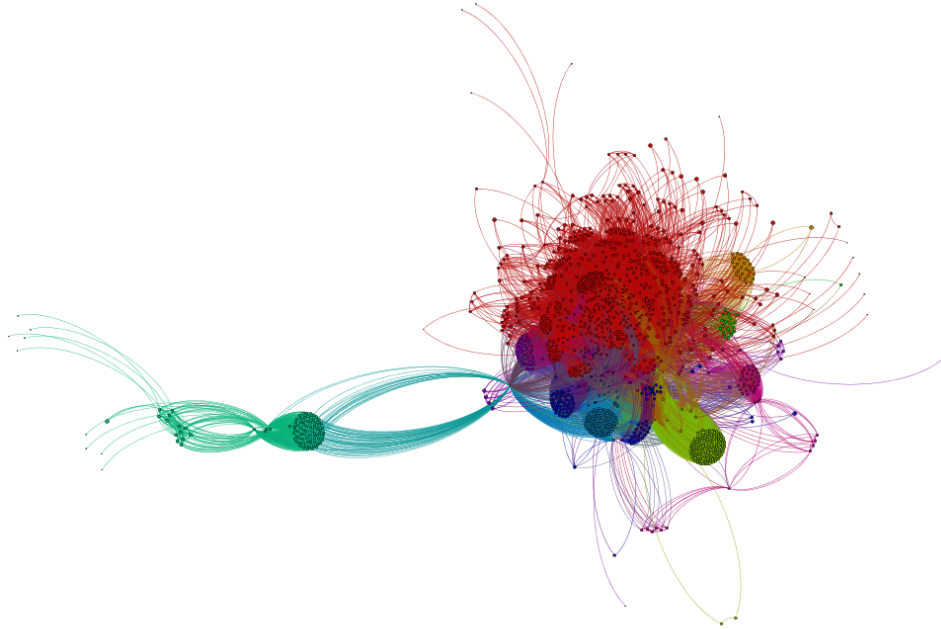


Figure 9: A visualization of the Speak Up Facebook “like” network, with eight clusters mapped by color.

Affiliation networks were not the only ways in which the actors in this community were tied. My preliminary understanding of the actors involved ties between vendors, leaders, volunteers, donors, partners, and clients (Table 14). As described in this section, those attending community events were primarily vendors, leaders, and volunteers. Therefore, I separately describe the network interactions between the donor, client, and partner actors in separate sections.

5.4.4 Vendors

I found that there were also direct links between vendors, but they were difficult to obtain across all vendors. The vendor population grew mostly through word of mouth and referrals. Vendors were incentivized by free publications to recruit new vendors, so at times vendors would arrive at events with their recruits. These connections were not always recorded. I observed several of the events represented in this analysis and noticed that people often attended events along with smaller, homogeneous groups. For example, vendors of the same race would arrive and leave together. The vendors

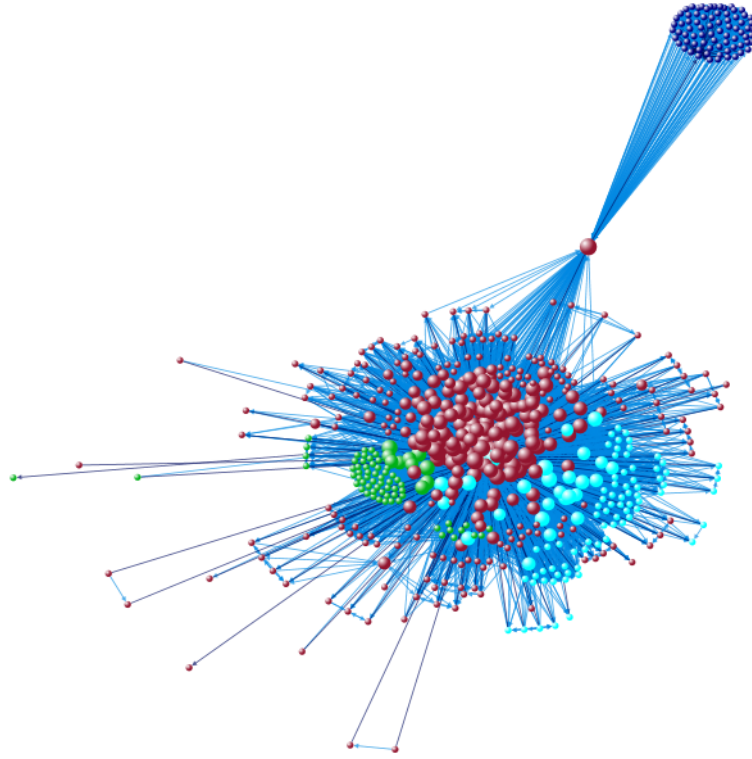


Figure 10: Complete visualization of Speak Up Facebook ‘like’ network. Node size is scaled betweenness. Opacity is degree. Node color is mapped to detect clusters. Edge color is mapped to relationships (Liked post, Co-liker).

would talk of strategies on how to team sell on opposite street corners, and would then leave together to implement their plans. Another important observation is that vendors also acted in a voluntary capacity at some events. One leader described this by saying: *“So they [vendors] want to come in and say, “Can I do any volunteer work?” Even though, they probably have no money and they might be more personally benefited by selling during that time. When you can help someone, you are very empowered. so when someone says, “Can I help you?” We say, “Yes you can help us”. There are higher, more engaged vendors, who like to give back”.*

This desire to both receive income and to give back was also present in my one-on-one interviews with six vendors. In this section, I summarize a few responses to the vendor survey question, *“What is your primary reason for selling Speak Up?”*:

“At first, I was doing it because I found it to be a very important to make

Matrix	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14
P1	0	0	0	0	0	1	1	0	1	0	0	0	0	1
P2	0	0	0	0	0	0	0	0	0	1	0	0	1	0
P3	1	1	1	1	1	1	1	1	0	1	0	0	1	1
P4	1	0	0	1	1	0	0	0	1	0	0	1	0	0
P5	0	0	1	0	0	0	0	0	0	0	0	0	0	0
P6	0	0	0	0	0	0	0	0	1	0	0	0	0	0
P7	0	0	0	0	0	0	0	0	1	0	0	0	0	0
P8	0	0	0	0	0	0	0	0	0	0	0	0	0	1
P9	0	0	0	0	0	0	0	0	0	0	0	0	0	1
P10	0	0	0	0	0	0	0	0	0	0	0	1	0	1

Figure 11: This is a partial affiliation matrix used to find the clique structure based on co-attendance at events. The row labels represent each person and the events are recorded represented on the column labels. A ‘1’ in a cell means the person attended the event and a ‘0’ means they did not.

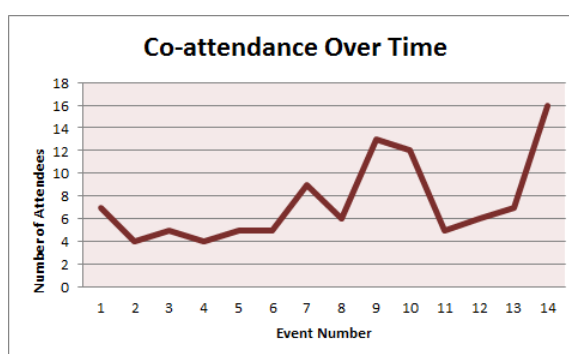


Figure 12: The number of people who attended an event over time. The number ‘1’ corresponds to the first event and the number ‘14’ corresponds to the last.

the money. Who don't want extra money in their pocket to be honest? But, as I was coming here and I did, and I noticed it was more than making money. You get a chance for someone to really help someone else out in need. When someone really need money, when someone don't have nothing to eat. When someone don't have no place to go, and they can sell these publications and say hey, can you help me out? Instead of asking for money, someone can help them”,[Vendor 6].

“To make a change in society number one, and then number two is to make people aware. The money is awesome, don't want you to think otherwise, but those are the real support things. That's why we are out there. It matters about that individual that we are saving, that we are giving hope

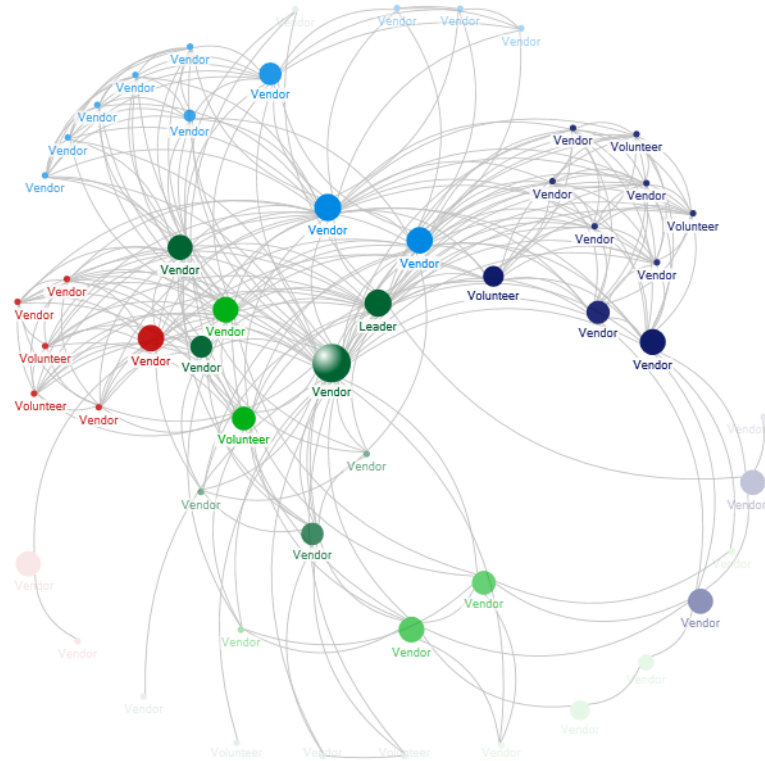


Figure 13: Complete visualization of Speak Up affiliations network. Node size is scaled betweenness. Opacity is degree. Node color is mapped to detect clusters. Node label is mapped to relationships (Vendor, Leader, Volunteer).

to. That's the most important thing. That's all that really matters, and that's why I love Speak Up because that's what matters. And it really is its mission, it's not just talk.", [Vendor 2].

"Because I have been through things, I quit smoking cigarettes, I smoked crack before, I quit smoking crack, I did all these things. To do something like we are doing, to give someone a job opportunity, we are showing them that they have it in their self. So I want to kind of give back", [Vendor 1].

"I didn't have nothing, I feel as though I am doing something for society and now I feel a part of it. It lifted me up, now I share the publication and it lifted other people up. I start explaining it to them. Words come from nowhere, I don't know where they come from. People smile and they feel good about it", [Vendor 5].

Another interesting result is the connection between event attendance and those who were sheltered. The more stable a vendor's housing, the more frequently they attended Speak Up events. For example, one of the vendors with relatively high event attendance was also chronically homeless. Chronic homelessness is defined as long-term or repeated homelessness, coupled with a disability [114]. The chronically homeless qualify for public housing programs, which provide stability for those who might otherwise be sleeping in shelters, tents, or at bus stops. The more vulnerable vendors, those without shelter, not only experienced fewer opportunities to interact with other actors through events, but also experienced more medical issues, which further prevented their sales. Medical issues such as toothaches, respiratory infections, back pain, and bacterial infections were common reoccurring obstacles for vendors who were sleeping in the woods, abandoned warehouses, or doorways. If proper medical attention was received, vendors spend all resources (time, bus passes, money) on getting well. Qualitative feedback from vendors cite other challenges associated with life on the street. Vendor comments include : *“Making myself presentable everyday with clean clothes and showers. It was such as task, it could be an all day task just to get that accomplished”* and *“When it starts getting late, I start worrying about where am I going. I’m already struggling secretly, I want to reach out but I’m also afraid of what will happen to me if I reach out to the wrong person. It’s hard for me to trust people, because I grew up around violence and stuff like that. I don’t associate with people too much.”*

There was one standout sheltered vendor, presented in the center of Figure 11 as the most important actor. This vendor was able to bridge all of the other clusters, having the highest betweenness centrality, eigenvector centrality and degree in the network. In terms of network authority, this vendor was even positioned higher than one of the leaders. There were other vendors who demonstrated importance in terms of betweenness centrality, but appear translucent in Figure 11 due to having a low

degree or few connections.

5.4.5 Donors

The financial support of many non-profit organizations is comprised of donors from generous individuals, foundations, and corporations. Earlier in this chapter, I defined *donors* as those who provide tangible contributions. Speak Up's donor population was primarily made up of individuals who gave financial support, ranging from one time donations to monthly contributions. In this section, I present the results of the supporter network survey which was forwarded by Speak Up leadership to their donor distribution list. I received 28 responses to the survey (appendix B), 10 were male and 18 were female. A surprising result was that a majority of the donors were not actively interacting with Speak Up through affiliation networks (i.e. events). The results of the supporter survey supported this observation with 54 percent of respondents having never attended a meeting or event and another 11 percent who rarely attended. The results also confirmed my understanding of their role as “donor” with 80 percent having made a past financial contribution. The survey also confirmed that this group should not be grouped solely with the volunteers with 86 percent having never volunteered with the community previously. The remaining 14 percent “rarely” supported the Speak Up community through volunteerism. This provides a measure of the degree of overlap between donor and volunteer roles. Donors were not very active with the organization's social media network either, because 80 percent did not contribute to an online discussion about Speak Up. Again, it is worth noting that there was some “rare” online participation from 20 percent of the survey respondents. The fact that this was a group of donors, inherently shows that they were not in poverty and either middle-class or wealthy people. 100 percent of respondents had some college education, with 40 percent having graduate level education. I was ultimately able to connect approximately 20 percent of the donor actors to the Speak Up network through their answers to the survey questions “*How did you hear about*

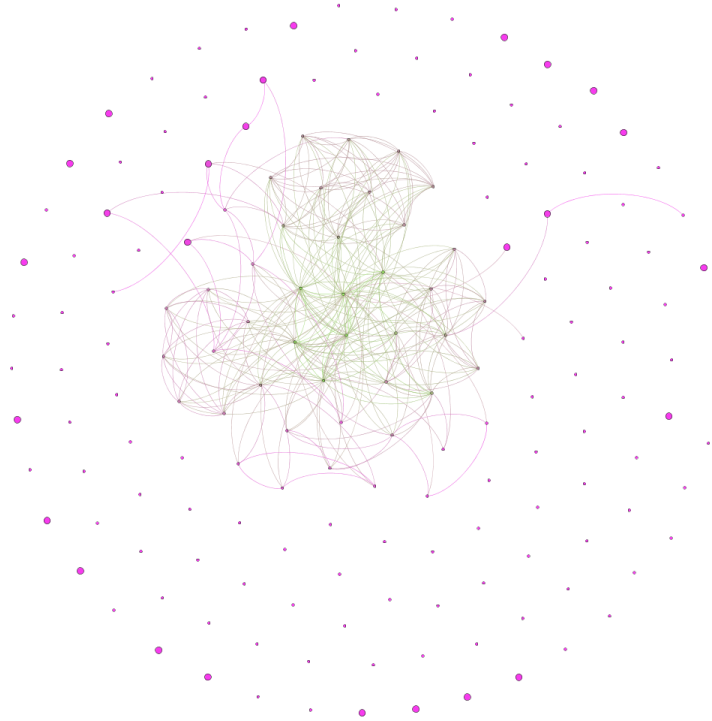


Figure 14: The entire Speak Up network, representing leaders, vendors, volunteers, and donors. Node color is mapped to authority, or node value to the network. Edge color is mapped to clusters. Nodes without edges represent actors with no connections to others.

Speak Up?” and *”Do you personally know any Speak Up vendors?(Give names if applicable)”*. The remaining donors who responded to the survey, but did not have any direct connections to Speak Up, were also added to the network and represented as nodes without edges. This, combined with vendor, leader, and volunteer nodes and edges resulted in an undirected network with 167 nodes, and 297 edges. The network visualization is presented in Figure 14. The Speak Up executive director was connected to every other node in the network, and was therefore removed from the analysis. There were no observable links between donors and partners or clients.

5.4.6 Network Interactions with Outsiders

Communities of Purpose interact mostly with other organizations through *partner* relationships comprised of non-tangible exchanges. Similar to the other Communities

of Purpose described in my first study, Speak Up partners with outside groups to use their facilities at no cost for fundraiser events. The qualitative comments from the Speak Up leaders was my primary source of data about their partners. Speak Up has approximately forty partners, with “churches” being grouped as one of their largest partnership types. For example, Speak up partners with area churches to host benefit concerts, with the proceeds going back to fund Speak Up's mission. Though this type of support is not a direct financial contribution, it indirectly connects the partner organization to the community structure, and ultimately to its overall success. Churches also play an important role recruiting new vendors. Speak Up prints several thousands of business card-sized handouts, called opportunity cards, that members of church groups carry around in their purses, wallets and cars. When they see a homeless person, they hand them a card which contains information on how to connect with Speak Up on the front. These occurrences were not tracked by Speak Up, however one leader made the following comment providing an indication of the frequency: *“People come through the door all the time or call about a card that someone has given to them”*. Speak Up partners with a few area businesses who would allow vendors to sell in front of their property. Other partners include area organizations with similar missions who co-host homeless outreach events with Speak Up.

Clients, those who purchase the publication, were surprisingly the most difficult to identify and connect back to the network structure. At the time of this research, Speak Up did not accept subscriptions. This was so that vendors could act as micro-entrepreneurs and not sales employees. It was also important for vendors to have the ability to receive cash in hand, to be able to take care of their most pressing needs immediately. It is for this reason that *client* actors are also considered “outsiders” because they could not effectively be represented in the Speak Up network visualization either. I present an adjusted binary matrix which presents more accurately how the Speak Up network actors interacted with one another in Table 17.

During the time of this study, I attempted to capture the client connections through a readership survey (appendix C). Vendors were incentivized (through free publications) to direct clients to the survey link that was printed on the inside front page of the publication. There were fourteen respondents, 6 were female and eight were male. 50 percent of the client respondents worked in a professional position, and 22 percent were students. The primary reason for purchasing the publication was to support the vendor for 50 percent of the clients. The remaining half purchased to increase their awareness about homelessness. Overall, there was not an abundance of sales activity for many vendors, which is another reason clients were difficult to connect in this study. In Figure 15, I provide a chart of data obtained from sales records during the time of this study. These records were not a complete account of all sales, but can provide an idea of the variation that occurred from day to day.

Furthermore, vendor interviews revealed that not all potential clients were receptive to what they had to say. Vendors were required to adhere to a code of conduct which included wearing their Speak Up t-shirt and identification badge when selling, staying off private property unless given permission, not smoking while selling and not selling while under the influence of drugs or alcohol. Even with these guidelines, an overwhelming majority of people in certain areas around the city would just ignore them, or reject the publication sale. This occurrence is described by one vendor in the following quote as annoying: *“The business people really, they are the ones that could really, really help to make a difference, and they are the ones that don’t care the most. It annoys me, and I am not easily annoyed, so I just stay away from that.”* Another vendor cites stigma as a reason that potential clients do not support: *“A lot of people do give me compliments and say I love what you are doing, but the other half feel that I shouldn’t be helping the homeless out. They feel that homeless people should work like everyone else.”* And finally, one vendor describes the isolation and lack of support from potential clients as a form of hypocrisy: *“When it comes down*

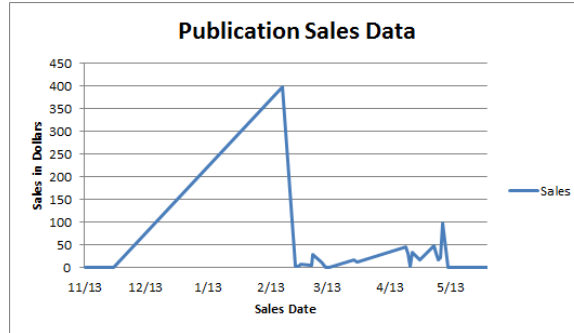


Figure 15: A chart of vendor publications sales, recorded by leaders or volunteers when vendors purchased more magazines on select dates.

to it, people have encouragement to have lavish parties with lots of champagne, but can't give the homeless guy \$5 cause he might go buy a beer. When they just came from a party with \$100,000 worth of champagne.”

Finally, it is worth noting that even with proper identification, and the right to sell a free speech publication in a public place, vendors still faced harassment from police or area security personnel. Their code of conduct specified that vendors should not argue, move to a different location and simply ask the officer to call the Speak Up office if needed. Consequently there was regular discussion at vendor meetings around the best and worst places to sell the publication.

5.5 Discussion

The Speak Up network is a small-world network, with high clustering among vendors, leaders and volunteers. Affiliation networks naturally contain many fully connected sub networks, or *cliques*, since the nodes of the same group, such as events, are all connected with each other by definition. Affiliation networks are also called “two-mode graphs”, referring to the number of different kinds of entities referenced in the rows and columns of a matrix. This type of network formation also produces symmetry. This community structure was also present in my study as shown in Figure 11, and would hold true for other Communities of Purpose who enact their purposes through meetings and events. Therefore, the use of two-mode, person-by-group data

[18] is an effective method to model and then analyze communities that engage in collective behavior. Furthermore, over time these communities become self-similar. Small groups co-locate at meetings, building into larger groups, that eventually grow to meet at a national scale. This affiliation structure is an effective mechanism for network expansion.

Speak Up members engaged in a lot of community events and activities, but low attendance and publication sales demonstrated that activity does not equal accomplishment. One possible explanation for why Speak Up did not experience a lot of growth is because the leader actors were overly central to the community. The network presented in Figure 14 was not constructed as an ego network around one leader. However, the resulting network model presented it as such. Consequently, I removed the highly central leader-actor node from the network model to get a better understanding of the networks' functions. Once removed, I discovered the negative impact of the leader's position in the network. The overdependence on one or two people in a community organization is a common occurrence among non-profit groups, and can provide a possible explanation for the impact of entropy on similar communities. With growing social problems, and little to no paid staff, volunteers needs will increase. Leaders can easily become overly central in these situations simply due to a lack of sufficient help. However, structurally speaking, leaders of Communities of Purpose should not act as central authority as this could prevent others from effectively organizing themselves. Leaders must be strategic in allowing all actors the opportunity to interact so that the entire community network can evolve. The Second Law of Thermodynamics helps to explain this in that a system cannot continue to organize itself without new energy (or actors) added to the system from the outside [115]. New energy added to the network will keep the flow of information and resources alive, as well as contribute to community success. Resources build community stability. It is important, particularly for all leaders of Communities of Purpose to be aware of

Table 17: A post-analysis binary matrix representation of actor relationships showing that donors and partners had fewer interactions with the other actors than what was intended.

Actor	Vendor	Leader	Volunteer	Donor	Partner	Client
Vendor	1	1	1	1	0	1
Leader	1	1	1	1	1	1
Volunteer	1	1	1	0	0	0
Donor	1	1	0	0	1	0
Partner	0	1	0	1	0	0
Client	1	1	0	0	0	0

the deterioration caused by entropy. Once aware, the community can take steps to counteract it effectively.

The unsheltered homeless are the poorest of the poor. Not only do they lack material resources, but they lack human resources such as friends or family who will take them in. By definition, this population is hard to locate though every other year the Department of Housing and Urban Development (HUD) requires communities to conduct sheltered and an unsheltered counts of them. Over time it became a barrier for Speak Up to maintain contact with its unsheltered vendors and thus reducing opportunity to strengthen existing connections. Additionally, when unsheltered vendors had difficulty maintaining a clean appearance, it became difficult for them to attract new clients based on perception alone. There is a very prevalent stigma associated with the homeless [114]. Poverty, classism, unaffordable housing and racism are unpleasant. However, when people who are not in poverty come face-to-face with a homeless person, they often stigmatize the homeless person as unpleasant.

Although societal and structural factors did predict vendors' failures, the vendors also experienced individual agency. Agency describes the ability to influence your own success. Street newspapers have the ability to tap into this effective aspect of its own community growth because they involve their receiver population (vulnerably housed) in activities and events. From a network perspective, this involvement provides numerous opportunities for vendors to make direct connections with others. Not only can these links increase the flow of information and resources throughout

the community, but over time they can also promote the development of cognitive links. This is because street newspapers offer a suitable alternative to panhandling, or begging in the street. The ability for the poor to become involved in their own advocacy is a unique opportunity for the poor to create a cognitive link between the typical mental model of the poor to that of the middle class (volunteering, education, and political action) [83]. Not directly asking for help, but helping others (by promoting a social justice publication), changes one's mindset to see oneself more in a position of authority, and less in a position of helplessness. The ability to help themselves and others in poverty became a motivating factor for many high achieving vendors even more so than the income as a result of this cognitive shift. As previously mentioned, there was one vendor who gained considerable network authority through their involvement.

5.5.1 Connecting, Bridging and Brokering

In a Community of Purpose, betweenness is a very important measure of how well people link across different social clusters. A person with higher network betweenness has greater access to new information. There was a very distinct divide between donors and the rest of the network. Removing the most central leader revealed that many clusters in the Speak Up community were largely disconnected, and ultimately unaware of each other. Speak Up would benefit from future efforts to intentionally create more opportunities to engage its donors with the rest of the community. This notion is supported by the theory of structural holes where expected connections between neighbors are missing [23].

As previously described in Chapter 4, a central component of the successful functioning of these groups is their ability to be collaborative and strategic. One limitation to affiliation networks is knowing which of the indirect affiliation connections actually lead to direct collaborative relationships. The capacity to convert indirect links into directly linked relationships, and then towards collaboration, should be a key focus

of Communities of Purpose. At the time of this study, the community used their partner networks to recruit new vendors through the use of business cards or by word of mouth (sometimes enacted through social media). They also created opportunities for actors to connect through events and activities. Yet, the resulting network structure still presented many opportunities to create improvements that could support the success of the organization as a whole. Power within organizations often comes more from the degree to which an individual within a network is at the center of many relationships. I believe that structurally, Speak Up would be more successful overall by creating opportunities for vendors to become more central to the entire network of possible connections. Vendors could not only connect with clients, but they could also be more strategically connected to all other actors (1st degree), as well as their friends (2nd degree), and so on (3rd degree). New connections with other's interpersonal networks could enable vendors to more easily identify as trustworthy to outsiders. This observation is supported by Granovetter's strength of weak ties in community organization [42], which builds on the premise that mass media does not cause people to act as much as personal influence. Intentionally bridging the network with a weak tie between vendors and the friends of other actors would increase the network's capacity to serve its overall mission. In the next chapter I offer suggestions on how technology could best facilitate bridging and brokering [56] in Communities of Purpose.

5.5.2 Towards a Framework for Network Success

This body of work on Communities of Purpose recognizes the importance of their offline and online presence. However, the most prominent role of information and communications technology among these groups is just to support specific operational tasks such communication or event promotion. Regarding network formation, Community of Purpose groups primarily evolve offline through affiliations and interpersonal connections. To best capture all of the various components of the Speak

Up network, my data collection method was a manual process. Technology tools were useful in distributing online surveys and obtaining social media data. However capturing real-world connections between members of the receiver population (vulnerably housed) and others who served them over time was largely anecdotal. There was a clear limitation on how to access a continual understanding of the network's architecture, its various dynamic processes and resulting function at any given time. Consequently, the resultant network presented in Chapter 5 was a snapshot of a set period of time. There were specific dynamic properties that I was unable to accurately obtain, such as when or how direct connections were formed and their frequencies over time. Furthermore, it is not feasible to obtain complete lists of community members and their ties in many large, naturally occurring settings. Even if it were possible, it is not a highly scalable option for ongoing research. Without a mechanism to evaluate continual network data, such as through information and communications technology, data collection would always be limited. Alongside the need to capture dynamic processes, my analysis of the Speak Up network revealed a set of six components (e.g., framework) that serves as the underlying principles for technologies supporting similarly structured Communities of Purpose. I argue that this framework gives valuable insight on the design of tools to enhance the success of Community of Purpose networks. This framework is summarized in Table 18 and described in the next section.

5.5.3 Principle 1: Bridge Structural Holes

The bridging principle applies to Speak Up in particular where there are donors, volunteers, or partners who never come into physical contact with the vendor population. Especially in the case of donors, who rarely attend community events, there is little or no interaction between them and the rest of the community. These interaction gaps prevent connections, and therefore create holes within the network structure. Using this principle, technology can create the bridge between disconnected clusters of

donors and vendors that would not otherwise occur at a face-to-face Speak Up event. This positioning of a bridge between distinct groups within the network creates an essential mechanism upon which information can be transferred from one group to another. Essentially, a connection or tie has a greater chance of occurring in a virtual environment through friending, commenting, liking, and following features. However this principle stresses the importance of connecting not only within actor groupings but across them as well.

5.5.4 Principle 2: Mobilize Social Capital

Speak Up leaders describe the community as most successful when publications are created and abundantly sold. Vendors, who often do not have a sales background, find it difficult to effectively sell publications on a regular basis. Speak Up does not currently have a mechanism for clients to locate a vendor, since vendors have the flexibility to sell in any public place and at any given time. Hence, there is no defined locality or address for interested buyers to either drop by or to refer their friends. Also, there are no “open” or “closed” hours to use as a guideline as with traditional place-based sales. Using this principle, technology can facilitate “word of mouth” between vendors, clients, and their friends, providing more opportunities for publication sales to occur. For example, when a vendor is selling a Speak Up publication, technology can facilitate location awareness between that vendor and the rest of the Speak Up community to signal their location and that they are “open” and ready to sell. If the non-vendor members of the Speak Up community are unavailable to support the vendor at that time, the technology could facilitate social sharing of the information to the friends of the Speak Up community. People are influenced by the preferences of their social contacts, and this principle can provide a mechanism to embrace Communities of Purpose members' willingness to share their passions with others.

5.5.5 Principle 3: Mediate Societal Barriers

Aside from physical locality, there are also societal barriers that Communities of Purpose face when interacting with under-served groups. In previous sections I have discussed that Speak Up vendors often feel stigmatized when they interact with the general public. Many of the vendors have not had the opportunity to receive proper dental care and are self-conscious about their smiles or even the way they speak. My vendor revealed that some vendors had not finished high school and had been told by their families that they were incapable of success. Therefore some vendors also had to work to overcome negative perceptions of themselves. Qualitative comments revealed that the female vendors would feel more confident facing the public if their hair was styled and the male vendors preferred groomed facial hair. Furthermore, looking the best possible was a requirement of selling a Speak Up publication.

Unfortunately, stigma causes society to generally respond negatively to people who identify themselves as homeless or vulnerably housed. A less than professional appearance when selling publications can add to the already existing societal barriers between the homeless and the housed. There is considerable pressure to conform to social roles, and those who do not are often shunned. This cycle further marginalizes under-served groups. This is a critical issue that could be mediated with the support of technology. Information and communication technologies could be designed to intentionally augment a vendor's skill-set related to language and literacy. For example, vendors could confidently build relationships with community supporters through virtual communication using a secure website. With assistance, vendors would have a virtual profile that best communicates their strengths to others, mediating barriers that could be associated with their face-to-face appearance or verbal communication.

5.5.6 Principle 4: Awareness of the Isolated

Social isolation can lead to very serious mental and physical health risks. The homeless and vulnerably housed in general can be difficult to physically reach. At times this is because they are not living in places where it is easy to reach them. As new vendors join the Speak Up community, other existing vendors who may be experiencing physical, financial, or emotional hardships, can become distant and hard to connect with. Seeming invisible is often a survival strategy of the homeless to avoid unwanted attention or harassment. Qualitative data revealed that most vendors have access to a cell phones, but if not actively making money from publication sales or otherwise, their phone services can become suspended or disconnected. In general, it is common for all passively engaged members within Communities of Purpose, regardless of socio-economic status, to become isolated from the more active members. Therefore, using this principle, technology could use connection data to first determine which community members are isolates, or not connected to the others. Once determined, technology could provide a mechanism to raise awareness of the isolated to the rest of the community. Using technology to provide awareness of isolated members to more active members who might not otherwise have known, can incentivize active members to initiate a connection.

5.5.7 Principle 5: Decentralize Leadership

Communities of Purpose depend highly on the assistance of volunteers and other supporters, yet in their absence, leaders become overburdened. Qualitatively, leaders describe this as sacrificing so much in their roles to the point of burn out, fatigue or sickness. Using a network perspective, data from the Speak Up community shows leaders as overly central to the community. More specifically, betweenness centrality measures sum the proportion of shortest paths from one node to another while passing through a given node. Therefore, a leader with high betweenness is responsible for

Table 18: A framework that serves as the underlying six principles for technologies supporting Community of Purpose networks.

Component	Description
Bridge structural holes	Bridge lower and higher socioeconomic groups or other disconnected clusters
Mobilize social capital	Facilitate connections between the receiver population and supporters' friends
Mediate societal barriers	Strategically facilitate connections that would not otherwise occur in natural settings
Awareness of the isolated	Create an awareness of unconnected others who are present in the network
Decentralize leadership	Provide a mechanism for self-organization without leader facilitation
Capture dynamic processes	Support the logging of individual, group and community-wide activities

connecting many sets of others along the best path. Consequently, if the leader were removed from the community for any reason, it would cause many pairs of others to be more distant or completely disconnected. Using this principle, technology can facilitate a lot of the recruitment, intake, promotion, and day to day community connections that would normally be facilitated by or in the presence of a central leader. To make the leader less central, technology would simply provide a platform for connections, communication, and interaction among members without the need for facilitation from a leader.

5.5.8 Principle 6: Capture Dynamic Processes

Communities of Purpose such as Speak Up are constantly changing, adapting, and innovating. My work with the Speak Up community is only a snapshot of a given time period. It would be more informative and accurate to capture data that characterizes how Speak Up changes over a continuous time period. Using this principle, technology could be designed to support multiple, simultaneous streams of data collection through permanent availability 24 hours a day. This is a more scalable solution to continued research as the community continues to grow and expand beyond the local area.

5.6 Summary

The Report on the World Social Situation 2016 policy analysis presents social inclusion as the process of improving the terms of participation in society. This involves offering excluded people better opportunities which would challenge the mindsets that

drove exclusion in the first place [79]. In previous chapters I explain at length why promoting inclusiveness and equal opportunities is also good for economic development. People who participate in Communities of Purpose groups are willing participants to the purposes set forth within the group, and can be successful conduits of social inclusion. If provided a mechanism to bridge lower and higher socioeconomic people, the newly developed weak ties could establish a broadening of opportunity for the collective community. Social capital, when used to exclude those outside one's own social circle [72], does not support the successful functioning of a Community of Purpose, even when unintended. My framework for network success places specific emphasis on mobilizing social capital through inclusion. In bridging structural holes and mobilizing social capital, underserved groups can advance their lives by executing new opportunities between contacts. If there are members of the community who are isolated, without the help of technology, others would not even know that they were there. Increasing awareness of unconnected individuals creates an opportunity for people to strategically reach out and create direct links. If there are other barriers to connecting such as locality, or even stigma and perception, technology can mediate these factors since contact is not face-to-face. Leaders become overly central to their communities, and so while well-meaning, their communities are at risk of not succeeding. Providing a mechanism for other members to connect to one another and organize themselves provides a greater opportunity for the community to grow and thrive.

CHAPTER 6: THE ONLINE SOCIAL CONNECTEDNESS TOOL

Technology enables people to get their needs met online without leaving their homes [20]. In some ways this is beneficial, however online social networking can also contribute to loneliness and reduce overall life-satisfaction [104]. Those who are already marginalized on the fringes of society (such as the poor) are at an even greater risk. In all facets of life, people are constantly affected by their social networks. For example, in the hiring process or when seeking a loan, applications require personal references. And now there are platforms in the marketplace that facilitate lending through ones social network connections based on measures of trustworthiness [40]. This means that knowing the right people greatly increases ones chances of acquiring financial resources, and thus their odds of avoiding the spiral of poverty. How well positioned someone is, socially, will determine the extent to which they can spot opportunities (or extend them to others), secure resources (or provide them), and gain information or advice (or give it). Spending time building a network of strong relationships is key to the survival of any community, but even more so an online community [88].

Software developers have a responsibility to design, guide, and mold online communities to support the people in them [88]. There has been great discourse on the role of ICTs in humanitarianism [73], particularly in developing countries [80] Motivated by the results of my network study and my resultant framework for network success, I sought to design a tool that positively influenced how communities interact and interconnect in an online environment. I will describe my design, development and evaluation process in this chapter.

6.0.1 The Design Process

I followed an iterative, user-centered design process. The philosophy behind user-centered design is that the people who will be using a product know what their needs and goals are, and it is up to the designer to find them out. My research methodology included careful observations which helped produce an in depth understanding of the Speak Up community, contexts and culture. After documenting all that I had learned, I determined clear design implications. I identified that this tool should first adhere to the general framework explained in Chapter 5. I also took specific concern with the unique needs of the Speak Up user population. After brainstorming ideas, I incorporated input from the user community. Although there were six actors identified in the Speak Up community network, I concluded only two personas were needed to capture user behaviors. I developed the personas shown in Figures 16 and 17 to easily reference the “vendor” users and the “supporter” users.

To create the personas , I found a common set of behaviors and motivations among the actual people that I studied. This set became the basis for the personas, to which I added a picture, and demographic data to make the persona representative of a real person in the community. As part of my design process, I used personas as tools for communicating user contexts. The personas were useful for understanding my target user population, throughout the entire design process. The personas were also useful to evaluate features for appropriateness and utility.

6.0.2 The Online Social Connectedness (OSC) Tool: Socially Mediated Opportunity

I created a prototype, the Online Social Connectedness (OSC) Tool, for an online community of non-profit donors and volunteers to work alongside people marginalized on the fringes of society as they collectively combat issues of poverty. This work provides an assessment of the usability of the OSC tool to guide future design



Figure 16: This is a vendor persona which captures aspects of vendor user background, goals, frustrations, personality, motivations and technology use. I used this during the design process to help understand the vendor user population. Image courtesy of photostock at freedigitalphotos.net.

improvements.

The Online Social Connectedness (OSC) software tool seeks to influence the strength of how people connect with one another in an online community environment. This tool aggregates behavior metrics typically only available to developers, and visually represents this information to the end user in a way that is easy to interpret. There are a variety of social networking platforms that are designed to connect others to fulfill a specific purpose. These include online dating, knowledge working, crowd-funding, and micro-lending websites all with features related to what I propose. Such platforms collect several community activity measures about site users, that could be of particular use to Community of Purpose groups. Measures of online community activity such as the number of logins per month, number of uploads or posts, usage of custom avatars, and frequency of private messaging could provide useful insight back to the user. With regards to increasing the awareness of others in a Community



Figure 17: This is a supporter persona which captures aspects of Speak Up volunteers and donors. The graphic presents a typical user's bio, goals, frustrations, personality, motivations and technology use. I used this during the design process to help understand the supporter user population. Image courtesy of photostock at freedigitalphotos.net.

of Purpose and supporting increased collaboration and connectedness, such metrics are invaluable.

I used Starzyk's work [100] on face-to-face personal acquaintances, to develop metrics to quantify online community interaction. The degree of acquaintance or connectedness, affects ones rating. For example, latent activity (viewing a profile) is rated lower, and active linking (attending the same event) is rated higher. The tool provides a measure of social connectedness between each community member at any given time and suggests how the user could strengthen their relationships with other community members. I summarize the technical features that were found to be most important for the first design iteration in Table 21 and present a the metrics in Table 19.

In the study protocol, I asked individual participants to think aloud and carry out

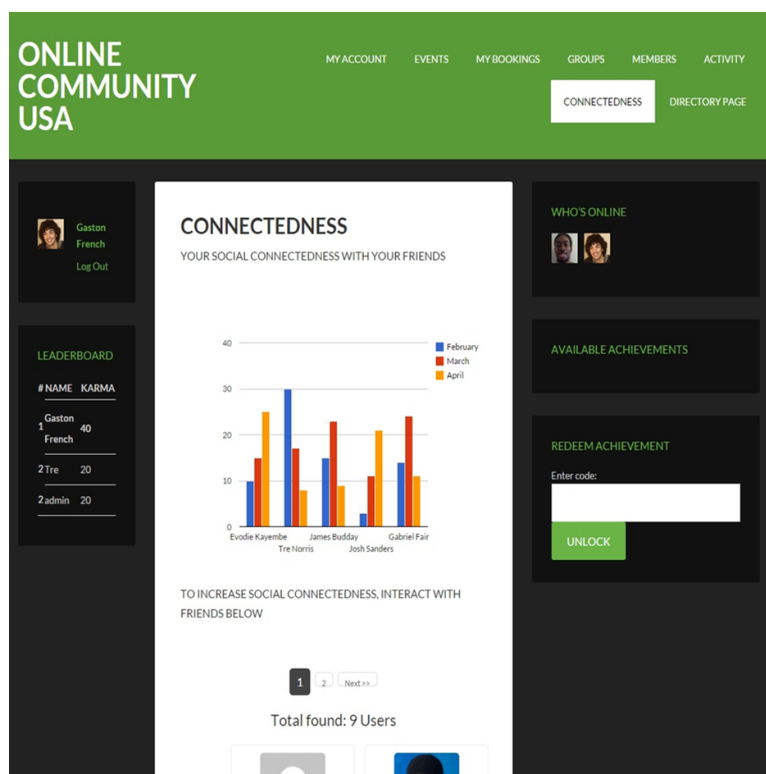


Figure 18: A screenshot of the OSC Tool.

a series of relatively simple tasks in a simulated online social networking environment. These tasks were designed to guide the user to experience a bulk of the features in the Online Social Connectedness Tool shown in Figure 20. All tasks and follow up comments were recorded using screen recording software. Users were asked to browse the interface, and use the OSC tool to describe how strongly a particular member is connected (to others).

Following the user tasks, I asked general questions about each user's previous online community experience and then asked usability questions adapted from the Arnold M. Lund USE questionnaire [67]. These questions were rated on a 5-point scale from 1 (strongly disagree) to 5 (strongly agree) and are shown in appendix D. I concluded the study with a semi-structured interview soliciting open-ended feedback regarding the usefulness and perceived missing features of the tool.

I recruited from the UNC Charlotte student population for this study. I did not

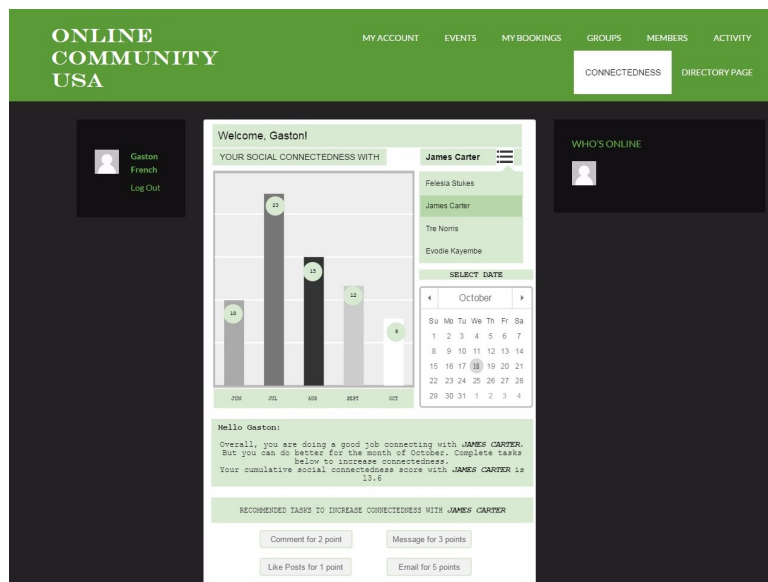


Figure 19: The OSC tool provides a measure of social connectedness between each community member at any given time and suggests how the user could strengthen their relationships with other community members.

Table 19: Adapted from Starzyk's work on personal acquaintances, I developed a set of online activity metrics to evaluate the connectedness of any two people at any given time.

Connectedness Indicators	Description	Metric Between any two nodes
Duration	Total duration of interaction	Length of time connected as friends
Frequency	The number of distinct interactions in a given time period	Count of profile views, event invitations, site logins, location check-ins, friend requests
Knowledge of goals	Awareness of likes, dislikes, and goals of others	Count of profile clicks and of coded read/unread indicator attached to goal-specific fields
Self-disclosure	One person reveals information about oneself to another	Degree of profile completion, count of status updates
Social network familiarity	One person is connected to the social network of another	Count of referrals through site-enabled social media sharing

include users from the actual Speak Up community because this study was only to test tool design. There were a total of 10 participants. Six were male and four were female. Ninety percent of the users described themselves as active in an online community at least 3 times per week. All of the users were previously familiar with online community features such as creating an online discussion post, and making friend requests. I coded the results of the follow-up survey items into five categories: Simplicity, Usefulness, Learn-ability, Recommend-ability, and Satisfaction. Over 74 percent of the participants found the OSC tool useful and over 84 percent said they

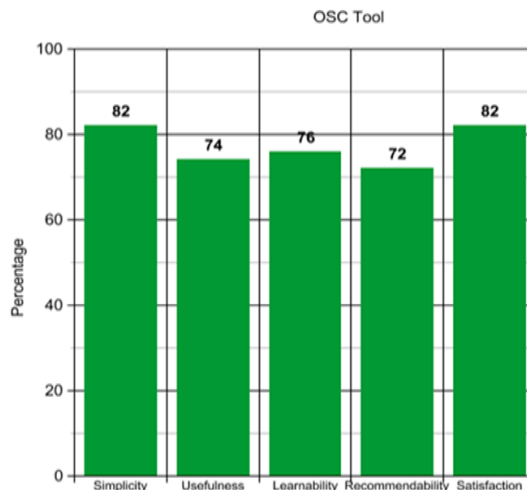


Figure 20: Graphical representation of results coded into five categories: simplicity, usefulness, learn-ability, recommend-ability, and satisfaction.

Table 20: A summary of user feedback after completing tasks with the OSC Tool.

OSC Tool User Feedback
“My being used to Facebook and Google made this interface hard to use”
“This tool would be useful in keeping in touch with old friends”
“I expected the bar chart to be clickable”
“This tool can serve as reminder that you need to contact someone you have not spoken to in a long time”
“The graph makes it easy to tell who was connected in what month”

were satisfied with the ease of completing tasks with the tool. A summary of these results is shown in Figure 20. The qualitative feedback was also very useful for future design interactions, and is summarized in Table 20.

The results of the study were very promising for the future of the OSC tool. Participants found the measure of social connectedness between members very useful in creating and strengthening relationships with others. As a result of the feedback received, I would make changes to certain style elements to make the tool more pleasing to the end user. This adjustment would enhance the tool’s aesthetic quality. I would expand upon the features of the OSC tool by coding a visual drill down of interactions between online community members. I would refine the interaction incentives for members to build relationships with other members they have never met or to reconnect with older/forgotten relationships. In the future, I would make a

Table 21: Key technical features of the OSC software with descriptions.

Key Features	Purpose
Responsive design	Web-based; provide optimal viewing and interaction experience
Social discovery	Location awareness for convenient face-to-face connections
Customizable user profile	User login requires a degree of profile completion
Integration with social networks	Social sharing through Facebook , Twitter and other social media
Friending	Ability to create direct links without a central authority
User custom views	Support capacity for actors to have varied features based on network role
Events management	Ability to set appointments to meet offline individually and collectively
Gamification	Incentivize connections through attainment of achievements
Community activity metrics	Logged measures of site activity, sociability, and interactions
MySQL database	Ability to dynamically store and retrieve network data

fully-functioning version that could be tested in a real-world environment. At that point in the research, I could actually test how the tool impacts user behavior as the study would involve both usability and measuring the impact of the tool on the overall network structure.

CHAPTER 7: CONCLUSION

Interactions, networks and connections are central to complexity. There is a danger associated with the mysteries of complex systems. For example, the leaders and volunteers in Communities of Purpose qualitatively describe a continual process of relationship building and bonding in their organizations. However when using a network perspective, these bonds are only being created within a certain cluster of the whole community. Yet the individual leaders and members do not have any awareness of this, and believe that the whole community is more highly connected than it really is. Likewise, when society depends on complex systems to behave predictably, they are not prepared for what happens when systems and networks come under stress. This body of work offers a solution by providing an approach to explain the real-world phenomena that occurs in complex community structures. The broader impact of this narrative is a contribution to understanding the intersection of vulnerable populations, their social interactions, and the role technology can play within the complex communities who wish to help them. Using a multi-method scientific approach, this dissertation (1) investigates the common characteristics of Communities of Purpose and presents a foundation for a body of theory; (2) disentangles the role of Communities of Purpose in complex social movements; (3) uses Network Science to model and explain the successes and failures of a real-world network which exists to address societal problems; (4) develops a framework to communicate to designers and developers of systems supporting Communities of Purpose. Thus suggesting a new approach, that can be used to support their greatest chances of success; and (5) presents the design of an online social connectedness software tool, a practical application of the framework, which if implemented, can be used to increase the social

capital of the poor.

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APPENDIX A: VENDOR SURVEY-SPEAK UP NETWORK STUDY

1. What is your name?
2. What is your gender?(Male/Female)
3. How old are you?
 - under 18
 - 18-24
 - 25-34
 - 35-44
 - 45-54
 - 55-64
 - 65-74
 - 75+
4. What is the highest level of education you have completed?
 - Less than Eighth grade
 - Eighth grade
 - Some high school
 - Twelfth grade (High school graduate)
 - Some college
 - Associate's degree
 - Bachelor's degree
 - Some post-graduate
 - Master's degree
 - Other advanced degree
5. Did you ever serve on active duty in the Armed Forces of the United States?
(Yes/No)

6. What is your own monthly income?

- Less than \$100
- \$100 to \$299
- \$300 to \$499
- \$500 to \$699
- \$700 to \$899
- \$900 to \$1,199
- More than \$1,200

7. What is your main source of income?

- Work
- Disability pension
- Unemployment benefits
- Social help/social support benefits
- No financial support
- Other

8. What is your current marital status?

9. How many children do you have under the age of 18?

10. How many children do you have over the age of 18?

11. What is your religious affiliation?

12. What is your race?

- Hispanic or Latino
- American Indian or Alaska Native
- Asian
- Black or African American

- Native Hawaiian or Other Pacific Islander
- White
- Two or more races

13. Where do you live?

- Sheltered housing
- Apartment renting
- House renting
- Own housing
- Live with a friend
- Live with a relative
- Other:

14. Do you currently have internet access? (Yes, No)

15. What is your primary mode of transportation?

- Bus
- My car
- Walking
- A friend's car
- Other:

16. What city and state are you originally from?

17. What job skills do you have? (Check All That Apply)

- Creativity
- Integrity
- Computer skills
- Negotiating and persuading
- Written communication skills

- Leadership
- Teamwork
- Verbal communication skills
- Time management skills
- Strong work ethic
- Flexibility

item Select the choice that best describes you Definitely False Mostly False Somewhat False Slightly False Slightly True Somewhat True Mostly True Definitely True

- I can think of many ways to get out of a jam
- I energetically pursue my goals
- I feel tired most of the time
- There are lots of ways around any problem
- I am easily depressed in an argument
- I can think of many ways to get the things in life that are important to me
- I worry about my health
- Even when others get discouraged, I know I can find a way to solve the problem
- My past experiences have prepared me well for my future
- I've been pretty successful in life
- I usually find myself worrying about something
- I meet the goals that I set for myself

18. Are you currently homeless? (Yes, No, Yes, No, but I am formerly homeless)

19. What is your primary reason for being homeless? (or formally)

20. How long have you been homeless?

- Never

- 1 week to 1 month
- 1 to 3 months
- 4 to 6 months
- 7 to 12 months
- 13 to 24 months
- 25 to 60 months
- 5 or more years

21. What is the biggest struggle about being homeless?

22. Chose the best answer (Strongly Disagree Slightly Disagree Disagree Undecided Agree Slightly Agree Strongly Agree)

- There is a special person who is around when I am in need
- My family really tries to help me
- I get the emotional help I need from my family
- I make new friends often
- My friends really try to help me
- My friends are here today and gone tomorrow

23. What care services have you used in the past year? (Never Monthly Weekly Daily)

- General care physician
- Medical specialist
- Nurse
- Counselor
- Psychologist
- Social worker
- Dentist
- Eye specialist

- Hospital as an inpatient
- Hospital as an outpatient

24. How did you hear about Speak Up Magazine? (Give name if applicable)

25. How do you know the person who told you about Speak Up Magazine?

- A friend
- A relative
- A friend of a friend
- Just met the person
- Never met, but found a Speak Up card
- Other:

26. What is your primary reason for selling Speak Up Magazine?

- To make money
- To make others aware of life on the street
- To help make a change in society
- To belong to something positive
- To make new friends
- Other:

27. How many Speak Up Magazines do you sell each day?

28. How often do you sell Speak Up Magazine at the following locations? (Very Frequently Frequently Occasionally Rarely Very Rarely Never)

- Center City
- South Charlotte
- East Charlotte
- West Charlotte
- North Charlotte

29. About how many people do you ask to buy Speak Up Magazine per week?

- None
- 1 to 10
- 11 to 20
- 21 to 30
- 31 to 40
- More than 40

30. Do you sell Speak Up Magazine to repeat customers?(Yes or No)

31. How much money do you make per week selling Speak Up Magazine? (including tips)

- 0
- \$1 to \$10
- \$11 to \$20
- \$21 to \$30
- \$31 to \$40
- \$41 to \$50
- More than \$50

32. Who have you referred to Speak Up Magazine? (Give names and how you know them such as friend, relative, just met, friend of a friend)

33. How could your experience as a Speak Up Magazine Vendor be improved?

APPENDIX B: SUPPORTER SURVEY IN THE SPEAK UP NETWORK STUDY

1. What is your name?
2. What is your gender?
3. What is your race?
4. How old are you?
5. What is the highest level of education you have completed?
6. What is your religious affiliation?
7. What is your occupation?
8. How did you hear about Speak Up Magazine? (Give names in comment box below if applicable)
9. What is your primary reason for your involvement with Speak Up Magazine?
10. In what capacity and frequency have you supported Speak Up Magazine in the past year?
11. In what capacity and frequency have you supported Speak Up Magazine in the past year?
12. Do you personally know any Speak Up vendors? (Give names if applicable, current or previous)
13. If a Speak Up vendor were selling in the following locations, where would you purchase an issue and why?
14. If you were approached by a Speak Up vendor on the street, and you had the choice of a digital issue (key code access later) or a printed issue (copy in hand), which would you prefer?

15. If you were approached by a Speak Up vendor to purchase a publication, what is your preferred method of payment?
16. How would you be willing to directly help a Speak Up Magazine vendor? (Check all that apply)

APPENDIX C: SPEAK UP CLIENT READERSHIP SURVEY

1. Which vendor directed you to this survey? (Please give the vendor's name printed on back of card)
2. The quality of your interaction with the vendor was: (Excellent, Above Average, Average,Below Average,Poor)
3. This was a (select one below): (First interaction with the vendor, Repeat interaction with the vendor)
4. In which of of the following locations was the vendor who directed you to this survey? (Center City, South Charlotte, East Charlotte, West Charlotte, North Charlotte, Other (explain))
5. What time of day was your interaction with the vendor? (Morning, Afternoon, Evening)
6. What is your gender? (Male, Female)
7. How old are you? (under 18, 18 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, 65 to 74, 75+)
8. What is your race? (Hispanic or Latino, American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, White, Two or more races, Prefer not to answer)
9. What is your current marital status? (Single, Single, Never Married, Married, Divorced, Widowed)
10. What is your occupation?
11. What is your primary reason for purchasing our Speak Up publication? If you did not purchase our publication, please select Not Applicable. (To support the

vendor, To support the organization, To increase my awareness of issues around homelessness, Not Applicable, Other (explain))

12. How many others also read your copy of our publication? (0, 1 to 2, 3 to 4, 5+, Not Applicable)
13. What is your primary reason for NOT purchasing our Speak Up publication? (Pricing, Vendor sales technique, Inconvenient timing, Inconvenient location, I gave a donation, but did not purchase the, publication, Did not have cash, Not interested in content, Other (explain))
14. Additional Comments?

APPENDIX D: EVALUATION OF THE ONLINE SOCIAL CONNECTEDNESS TOOL

Interview Questions adapted from Arnold M. Lund USE Questionnaire. Please answer using the following scale: (Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree.)

1. The OSC tool is simple to use
2. The OSC tool is useful
3. I would imagine that most people would learn to use this tool very quickly
4. I would recommend the OSC tool to a friend
5. Overall, I am satisfied with the ease of completing the tasks in this scenario
6. Open ended: In what ways would the OSC tool be useful in a real online community?
7. Open ended: Was there something missing from the OSC tool that you were expecting to see?
8. Open ended: Do you have any other comments about the OSC tool?