Planting the Seeds of Community: How Organizational Structure of Community Gardens Influences Their Utilization

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I. Introduction

Even in a developed country with an overabundant food supply like the US, distribution is inequitable. This inequity results in the formation of food deserts-- areas in which fresh, nutritious food is difficult to access-- as well as a food insecure population lacking consistent access to nutritious food. In response to these issues of food access in the mainstream food system, alternative food institutions (AFIs) have emerged to fill the gaps. AFIs emphasize food producers and providers who operate outside the conventional agriculture system to support small farmers, local economies, and increased accessibility to fresh food (Gunthman, 2006). They often take the form of farmer's markets, food pantries, food cooperatives, and community gardens.

Community gardens offer promising potential to bridge the gap between food production and consumption, but studies show that they are notoriously underutilized. When compared to other common AFIs, community gardens demonstrate the lowest participation rates (Gunthman, 2016, Sonti, 2018). Another dimension of garden underutilization is the trend that most garden users are food secure people who garden for leisure, rather than people growing food for consumption because they cannot otherwise access it (Babb, 2013). These findings demonstrate that these institutions are not fulfilling their mission to reach the most disenfranchised populations. This gap demonstrates the need for research to examine the complexities of garden use and disuse—not just acknowledging the existence of a gap, but understanding how it is formed—to increase the effectiveness of community gardens in serving the food insecure population. My research aims to fill this space by investigating how the organizational structures of community gardens influences their use.

To understand this relationship, this paper asks: *how does community garden governance structure influence garden utilization?* This question dives into the largely unexplored field of studying community gardens at the organizational level, looking at features of governance structure, like rules, staffing, and plot allotment methods, to see their effect on how the garden is used—by whom and for what purpose. This research should ultimately uncover the governmental structures in place that make a garden more or less accessible to the community.

II. Literature Review

Community gardens are one kind of alternative food institution (AFI) where users grow and harvest food crops and plants, offering an alternative source of produce outside a grocer and providing space for those without access to suitable land. These initiatives are organized and operated by a variety of actors which can include volunteers, plot renters, neighborhood associations or other community groups, non-profit organizations, and city government staff. Besides food cultivation, uses of community gardens include environmental education, outdoor recreation, strengthening community relationships, and improving mental and physical health (Sonti, 2018). Gardens offer either individual plots, which are rented or allotted seasonally and are managed by the plot renter, or communal plots, which are maintained collaboratively by the public, by garden users, or by garden staff. There are a variety of policies surrounding harvest of food products grown in community gardens: if plots are individual, the harvest is allowed only from your own plot; with communal gardens, a wide group of community members, ranging from gardener to passerby, can harvest food. These are the two major structures commonly outlined in community garden literature, although the results of my research prove that variations and hybrids exist within this framework.

Since their emergence and growing popularity, community gardens, along with other forms of AFIs have been well studied in academic research. Because community gardens are one type of AFI, it is valuable to consider studies of AFIs generally, which paint a picture of attitudes and behaviors of food provisioning outside the mainstream. My research works to uncover the links between bodies of existing knowledge on garden user motivation, general AFI utilization patterns, barriers to use and garden governance structure.

Motivations

Community gardens are distinct from other forms of AFIs in how much they demand from users—gardeners are not typically shoppers who stop by periodically to collect products. Plot cultivation requires consistent effort to maintain a plot and grow a crop. Thus, the engagement level, and subsequently the motivation of users, is different from other AFI's and is important in understanding garden use. Some commonly cited reasons for participation in community gardens include forming a connection to nature, strengthening civil engagement, improving physical health, and building community relationship (Sonti, 2018) (BFPC, 2014).

Reasons for gardening exist on a spectrum from leisure to practical food provisioning, with many users falling somewhere in between. The choice of crops planted in gardens reflects this spectrum, as users can plant flowers and ornamentals, food crops, or both. Out of self-proclaimed food growers in a survey of a small US city, 95% reported that providing food for their families is their major motivation (BFPC. 2014). Direct food provisioning seems to be a reason that is growing in its importance; a study which surveyed users twice over an eight-year time span shows that the number of respondents citing food production as a reason for gardening increased drastically in the second evaluation (Sonti, 2018). This may reflect the growing desire for local food systems, potentially due to increasing food insecurity or due to growing dissatisfaction with mainstream food systems. Another major motivation cited in these studies is community building and connection, which emphasizes that these gardens are not only about food, but can draw a diverse population who are seeking different kinds of physical and social harvests (Sonti, 2018). These assorted motivations for gardening leads to a parallel variability in community garden utilization.

Utilization of AFIs

When analyzing user involvement with alternative food institutions, it is clear that engagement is not equal across populations (divided along the lines of income and race) and across AFI types. Comparing three of the most common AFIs, farmer's markets are the most utilized, in terms of number of users, followed by food pantries, then community gardens ranking as least utilized (Gunthman, 2006). This low community garden participation rate was echoed in a study of households in Toronto, Canada where only 3% of the surveyed 484 families reported using a community garden—so small a fraction of the sample that its relationship to food security and income could not even be analyzed (Kirkpatrick, 2009). In samples where demographics could be analyzed, it is often found that the majority of gardeners are food secure and more broadly, AFI users are often white (Kellner, 2016; Gunthman, 2006). Although community garden participation is low all around, the lower income, food-insecure population does not lack interest. For example, one study showed that food-insecure survey expressed more interest in garden participation than food secure respondents (Babb, 2013). This interest in community garden activities from various populations demonstrates the importance of this research. These trends point to a clear need to reconsider and work to remove the structural barriers of community gardens to better include the food insecure population which is interested in such opportunities but show consistently low participation.

Barriers

Potential garden users face a number of barriers that influence their ability to engage with a garden. The most prohibitive barriers are financial, such as cost of plot rental, and other common barriers include access to supplies or tools, gardening knowledge, and time needed to maintain a plot (BFPC, 2014; Babb, 2013). Thus, various types of rule modifications or

alternative garden structures have emerged, such as reduced rate rental through city run gardens, nonprofits that do not charge a rental fee, or completely communal growing structures without membership. Even with these efforts to make community gardens financially accessible, other barriers persist. The time required to cultivate an individual plot can be a challenge, making communal, free harvesting an appealing option; on the other hand, the lack of individual stewardship of a personal plot can discourage regular involvement. Another large barrier to participation includes location of an AFI, as they tend to be located near high income areas and transportation can be challenging (Gunthman, 2006). Many of these features that make a garden appealing or prohibitive are housed within that garden's organizational structure; therefore, the governance framework of a garden influences the way it is used by various groups in the community.

Governance

The analysis of community garden governance structure is relatively unexplored in scholarly research, particularly in its application to garden use. Recent studies have attempted to explore this gap in the field, beginning by analyzing garden governance structures based on organizational theories (McGlone, 1999; Fox-Kämper, 2018). Governance is determined by factors such as type of staff (professionally paid or volunteer), relationship to public authority, rules and enforcement, and decision-making procedure (Fox-Kämper, 2018). The governance structure of a garden is simply how it is organized and operated as defined by rule code and staff. This can encompass both internal operations as well as external interactions with the community. Additionally, the way that community gardens interact with each other, or inter-garden governance, is another important consideration.

Initial research offers a binary framework of governance styles: top-down, formal structure or bottom-up, informal structure (McGlone, 1999). Further research argues that governance structure is rarely this simple and instead can be better visualized as a spectrum between top-down and bottom-up to encompass hybrid types and combinations (Fox-Kämper, 2018). Top-down gardens are organized by professionals and have the capacity to serve a large and diverse community, while bottom-up gardens are organized informally by users at a low cost and with a local focus (Fox-Kämper, 2018). Where a garden lies along this spectrum of governance styles influences the way the community can interact with and use the space.

This study by Fox-Kämper et al. (2018) investigates the important issue of governance type, but does not take the step to explicitly tie garden organization to user experience and barriers. My research builds upon this foundation of governance theory by analyzing these structures in combination with their influence on community garden use and accessibility. My more focused approach will explore the scholarly theories of use to see how they play out in real garden dynamics.

III. Methods

In order to investigate how community garden organization influences the ways that gardens are used, I collected data through two surveys—a garden organizer survey (appendix 1) and a garden user survey (appendix 2), to capture information on governance structure and type of utilization, respectively.

Governance Structure

I define governance structure, following the work of Fox-Kämper et al. (2018), as the organizational tools and rules that steer the overall mission and daily operations of a community garden. Features of governance include: staffing, rule formation and enforcement, membership contracts or fees, access restrictions, provided infrastructure and services, and involvement in garden maintenance.

I sort my studied gardens into three categories of governance: government run, non-profit run, and community run. This definition was informed by applying a version of the frameworks outlined by Fox-Kämper et al (2018), who define a spectrum of top-down and bottom-up governance types. Government run gardens operate at the top-down part of the spectrum, community run gardens at the bottom-up end, and non-profit run gardens falling in between. For example, government run gardens are often projects of a city department, indicating that they have a coordinator from the government and clearly defined rules and structures in line with city department reporting requirements. Non-profit run gardens can vary greatly in size and purpose but are broadly defined as serving a public need and returning all profits to the organization rather than stakeholders. They are often powered by a volunteer base but must still have defined goals to allow for their legal incorporation and categorization. Community run gardens can be

variable in their structure and level of professional organization, ranging from a group of neighbors to a managed network of volunteers.

Type of Utilization

The variable of utilization can be broadly defined as the nature of the engagement with the community garden, as a factor of both frequency of use (regular versus sporadic) and type of use (contributing to food cultivation, purely harvesting, or both). This captures a range of users from consistent gardeners, to occasional volunteers, to one-time visitors. Other features of utilization include types of plots used (individual or communal), level of participation in maintenance and gardening activities, and the role garden harvest plays in an individual's overall food sourcing.

Hypothesis

I predict that the membership policies and fees of a garden will have the strongest influence on type of utilization. This path of influence can be further segmented into influences on different populations (the food secure and the food insecure), which is summarized in hypothesis tables (Tables 1 and 2).

Features of Governance	**Engagement**	**Relationship (+/-)**	**Reason**
Rental Rates	FI (food insecure) Engagement	-	Cost is a barrier for low income, food insecure users
Garden Staff Presence	FI and FS (food secure) Engagement	+	Bridges knowledge gap, making it more accessible
Individual Plot Style	FS Engagement	+	Stewardship of plot requires time and leisure

	FI Engagement	-	Regular maintenance means time, which is a barrier
Communal plots	FS Engagement	-	Less autonomy and decision-making
	FI Engagement	+	No regular time commitment, less barriers

Table 1. Hypothesis Table of Feature of Governance

Governance Type	**Engagement**	**Relationship (+/-)**	**Reason**
Gov't Run	FS Engagement	+	Offers independence and structure, FS can pay fees
	FI Engagement	-	Cost and rules are barriers
Nonprofit Run	FS Engagement	-	Not often the target audience, potential stigma if associated with FI
	FI Engagement	+	Mission orientation, no or low cost to remove barriers
Community Run	FS Engagement	-	Less structure, less resources could lead to disorganization
	FI Engagement	+	Less barriers due to low/no fees and informality

Table 2: Hypothesis Table of Governance Types

My predictions are built on the assumptions that barriers, such as cost and required maintenance time, are more prohibitive to food insecure users than food secure users, following the logic of available income and leisure time. Many nonprofit or community run gardens waive rental fees or even opt for communal, rather than individual, growing style in order to encourage inclusion and to reflect the low cost, informal structure of the garden. I predict this may increase the utilization by food insecure users or infrequent visitors, who do not need to buy into a plot or dedicate time to cultivate. On the other hand, these free or shared plot systems may lead to lower engagement from food secure or regular users, people who return consistently on a plot, because

of the potential lack of organization and independence. This pattern was observed by the Bloomington Food Policy Council study, which found that across their sample of 76 citizens, gardeners prefer individual plots to communal, and non-gardeners were more interested in personal gardens than shared plots, because of the sense of autonomy and ability to make personal choices (BFPC, 2014). I expect to see this pattern in my survey as well. By the same logic, I predict that government run gardens, which charge fees and offer individual plots, will in turn experience higher engagement from food secure or regular gardeners.

IV. Data Collection

In order to test these hypotheses, I conducted two data collections; a Garden Organizer survey to investigate governance structure and a Garden User survey to characterize engagement with gardens. I grounded my research in the Midwest region in cities of various sizes.

I used web surveys to reach a range of organizations at a low cost. The online survey was complemented with a paper survey to increase access to all groups of garden users. To combat concerns of low response rate, I limited the number of questions asked to create a ten to fifteen-minute survey experience for both the GO and the GU surveys.

After administering a survey to a garden organizer, I provided them with the Garden User Survey and requested that they pass it along through their newsletter or email list of garden users or in their physical garden space at workshops or events. To incentivize participation, I offered to share the aggregated data of the survey with the community garden organizers, as the information would be useful feedback to improve their own operations.

Sampling and Distribution

In terms of distribution, I used the snowball sampling method (Noy, 2006), compiling a list of contacts and allowing those contacts to connect me with other garden organizers in their networks. I chose this sampling method in order to capture informally run community gardens who may not have a strong internet presence and to pinpoint gardens that are currently active; community gardens often have a short lifespan and many online listings are out of date.

Garden Organizer Survey

The Garden Organizer survey (Appendix 1) consists of questions to capture the various features of governance structure including rules of access and use, harvest policies, and

community outreach strategies. I also asked organizers for their perspective on how their garden is used and how they do or do not measure community engagement. The online survey consisted of open-ended questions.

The outcomes of the organizer responses allow me to place the community gardens into categories of the independent variable: government-run, non-profit run, or community-run. Additionally, the qualitative data provided contextual richness to build a fuller picture of how the garden can be used, which was further examined through a survey of garden users.

Garden User Survey

The second survey, the Garden User Survey (Appendix 2) used in this research was aimed towards garden users or community members that have in some way come in contact with a local community garden. I specified in the survey instructions that both garden users and nonusers can complete the form, the latter group completing a section on barriers to access to determine why they were not using the garden. The multiple-choice questions covered topics of how the garden is used (frequency, planting decisions, maintenance), why they use the garden (motivations), and who they are as users (basic demographic information). Additionally, I requested that survey participants list the community gardens that they use so that I could link their responses with the governance structure data provided by their corresponding garden organizer.

I have also included a question to help evaluate the food security status of the users, phrasing my question to match the language of the nationally recognized definition of food security from the USDA, without asking participants to label themselves as food secure or insecure (USDA Economic Research Service, 2012). This information, coupled with the basic demographic information collected, allowed me to further understand the types of populations

that use the garden, potentially leaving room for me to investigate the populations that are not represented in the survey results.

V. Results

My *garden organizer survey* analyzed twelve community gardens and provided comparative cases across all three structure types. The majority of the gardens are located in the Midwest, namely Indiana, Illinois, and Wisconsin, with the exception of one garden in Washington state, and they exist in both large cities such as Detroit and small towns such as Lafayette, IN. The sample consists of a relatively mixed set of self-identified governance types: five gardens, or 42% of the sample are community-run; four gardens, or 33% are non-profit run, and 3 gardens, or 25% are government run. Two-thirds of the gardens reported a mission statement around which their operations were centered. These mission statements include themes of education, community building, cultural preservation, and food security. The most common themes in this sample were education and community health, which encompasses the provision of accessible and nutritious food as well as social connections. This is consistent with the patterns in the literature that show similar goals and uses of community gardens.

The *garden user survey* reached thirteen garden users for a total sample that was homogenous in some categories and very diverse in others. Most of the responses, or 85% of the sample, came from community-run gardens—four distinct gardens within the GrowLocal Lafayette network. The remaining 15% of respondents were users of non-profit gardens. The lack of responses from users of government-run gardens limits my ability to analyze this governance style. All of the users report harvesting from and working on communal plots as their primary activities at the garden, with secondary activities including individual plot maintenance and attending volunteer days, demonstrating a diversity in garden activities.

The results of my data collection lead to four major findings, including meaningful patterns and new concepts to further nuance garden organization types. When analyzing the

garden organizer survey, (1) the concept of garden networks emerged as an important governmental force, and (2) a stark difference in rules regimes across structure types was notable in my sample. When looking at the garden user survey, an unstudied structure known as (3) sharing gardens were popular among respondents, and (4) a significant level of diversity, in garden use and socioeconomic status of users, was observed.

5.1 Garden Networks

Although all of the gardens surveyed run as individual gardens, many reported memberships to a garden network, an important feature of supra-garden governance. Garden organizers in my sample connected me with other organizers from gardens within their network, which first alerted me to the presence of these bridging forces. Organizers described their membership to networks in their short answer responses on my survey, citing these networks as a source of community outreach and mission orientation. Through the prevalence of these networks in my survey, I was able to identify and name two major forms of networks: a connecting network or a sponsoring network.

Connecting networks, usually regional or local, join users with community gardens, acting as a tool for users to find a nearby garden. The partnerships that form in these networks allow for greater bargaining power to increase access to resources and funding for independent gardens. These networks often include a diverse range of governance types, as they are simply a coalition of independently run initiatives. For example, two of the gardens in my survey, one non-profit run and one government-run garden, are connected through the Racine Gardens Network, which works to improve access to land and affordable insurance through the coalition.

Sponsoring networks act as one garden organization with various locations. A parent organization funds and supports individual community gardens that act as branches of the central

network. These branches are individually run, but typically share the same resources, mission, and organizational structure, although the variability between garden branches vary depending on the network. For example, three of the community gardens in my sample belong to the GrowLocal Lafayette urban garden network in Indiana, which all share a mission statement and community partnerships, but have garden branches that are run by unique organizers. Sponsoring networks can also act as a grant funding organization for local initiatives. Again, there is an essence of shared mission and structure across these gardens within a sponsoring network.

This concept of garden networks is an added layer of garden governance structure that acts above individual operations. It can tie together gardens that each have their own governance style. Garden networks have significant influence on individual garden governance in my sample, and ultimately, impacts the experience of the garden users that have been surveyed.

5.2 Variability in Rules

The stated rules of garden use proved to be the area of greatest differentiation in the garden organizer survey and an area with a significant impact on garden user experience. There was a stark difference between the content and the level of detail of the rule codes across governance structures. For example, government-run gardens had contracts that included prohibited species, noise limits, and resale restrictions as well as strict directions to frequently weed one's own plot. These rules are explicit and detailed, providing both guidance and restrictions. On the other hand, the community run gardens had one simple rule which they called the “good neighbor policy;” to “pick what you need, pull a weed.” The entire rule code is vague, flexible, and intangible. These differing sets of rules can be visualized as the two ends of a spectrum that ranges from specific to fluid--government-run gardens exhibited specific rule sets while community-run gardens utilized fluid rules. Non-profit gardens merit a case by case

consideration, as their rule structure can fall anywhere in between; some gardens provide detailed rules and others mimic the "good neighbor policy." Because non-profit gardens can be sponsored by a variety of different grants or organizations, their rules are equally variable.

5.3 Sharing Gardens

The uniquely communal type of garden structure, known as sharing gardens, stood out in my survey results although it is rarely mentioned across scholarly reports. Sharing gardens utilize a very *fluid* rule structure (as seen on the sign in Figure 1), as discussed in the previous section. These gardens do not have any explicit restrictions which helps to keep barriers to gardening and harvesting to a minimum. There are no fences that are locked during the off season or off hours. There is no cost to rent, work on, or harvest from the one shared plot. There are no applications or requirements to join and no plots to separate land into parcels. Public signage at the garden explains the purpose of the space and outlines the minimal rules of the garden. These gardens allow anyone—volunteer or passerby—to harvest from the garden regardless of their contribution to the cultivation of the plot. It is maintained by volunteers, which are users and harvester. But because the harvest is open to anyone, sharing gardens reach many community members beyond just regular users.

Figure 1: GrowLocal Sharing Garden (Photo by Chelsea Maupin)

The sharing gardens in my sample were all self-categorized as community run gardens, although there is the potential for another type of sponsor or owner to use this kind of communal

model; it could be possible for a government run garden, for example, to adapt a sharing garden model, but it is more consistent with the bottom-up values of community run gardens. Therefore, sharing gardens are not necessarily a type of governmental body, but a style of organization and rule set that can be utilized by any governance structure.

5.4 Diversity in Users and Use

In this sample, the demographics of garden users were generally diverse—users were evenly distributed across gender, age, food security status, and income. This diversity in overall demographics was surprising, contradicting the stereotypes and trends in the literature that deem community gardens as a wealthy hobby. The outlier is ethnicity, as 92% of the sample identified as white and 8% identified as Latino. This may be explained by the geographic location of the sample; the majority of responses came from Lafayette, Indiana, which itself is 84% white (*Lafayette, Indiana Population*, 2020). Overall, the community gardens in my sample served a *socioeconomically* diverse population.

One aspect of this socioeconomic diversity is the even distribution of food secure and food insecure users. In this sample, 46.2% of garden users were food secure, while 53.8% were food insecure, the sum of 38.5% moderately insecure and 15.4% severely insecure (Figure 2). This kind of distribution is significant when compared to the common literature that questions community garden's ability to combat food insecurity.

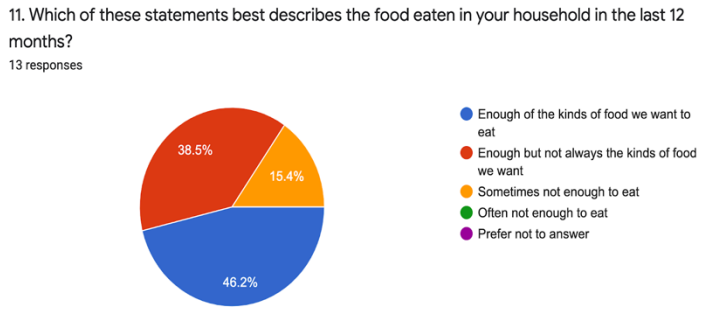

Figure 2: Food Security of Users

Generally, the types of garden use—frequency of access, kinds of work done on plots, and motivation for garden use—was very mixed in this sample. This means that the gardens are used for many reasons and can play different roles in users' lives, including but certainly not limited to a hobby.

Growing food for direct consumption or for sharing with others is the leading motivation for participation for respondents in my sample. Reasons of leisure, outdoor recreation, and social or community interaction follow closely behind to create an overall equal interest in the many facets of community gardening (Figure 3).

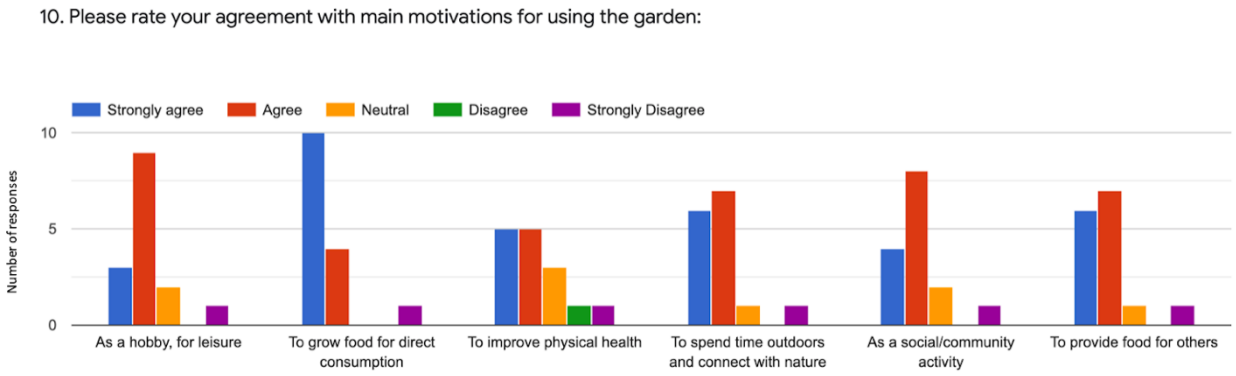

Figure 3: Motivation for Garden Use

VI. Discussion

These four main findings ultimately work to link garden governance mechanisms to utilization. Each of these patterns discussed in my results have implications for community use and accessibility.

Although community gardens operate individually, and are usually analyzed as such, they do not work entirely alone. Therefore, any inquiry into the creation of accessible community garden spaces must consider and utilize supra-garden governance forces like garden networks. These are powerful garden enablers and sponsors that can support budding initiatives. Garden networks can increase accessibility because a smaller garden without resources can tap into a greater network for funding and support. More geographically frequent and connected gardens would encourage inclusion and create a wide range of garden types that can be adapted to local, community needs.

On the individual level, gardens are governed by their rule code, which provides the expectations and directions for users. Where a garden falls along the spectrum of rule regimes—ranging from strict to fluid—can influence the user experience. Fluid structures provide the most openness for all but require interpretation, which leaves room for misunderstanding. On the other hand, specific rule sets provide detailed guidance to curate a desirable gardening experience without leaving room for variance, which can be exclusionary. There appears to be a trade-off between useful guidance and barriers when implementing rules. Rule formation can be a place for community garden initiatives to intentionally build accessibility into their organizational framework.

The relationship between rule structure and community utilization is clear in the example of sharing gardens. Using a very fluid rule set, sharing gardens do not impose barriers such as

fees or time commitments, and therefore, more community members become involved. This organizational framework leads to a higher level of social inclusion and accessibility—in my sample, 64% of sharing garden users were food insecure. In fact, all of the food insecure respondents from my sample were users of sharing gardens. These gardens are likely able to achieve this level of inclusion and food provisioning because of their minimal rule regime. Out of all the gardens in my survey, sharing gardens appeared to contribute the most to increasing community food security, providing food to anyone in need. This garden structure, relatively undiscussed in the food systems literature, certainly merits further research and application.

As discussed in the previous Results section, the garden user survey is consistent with claims that these community garden spaces are used by a diverse population for a variety of reasons. This is contrary to trends in the literature and the stereotypes which paint community gardens as an exclusive space for wealthy users to garden for leisure (Gunthman, 2016). This is an important notion to disprove so that equity and inclusion can continue to be expected and requested in these community spaces.

Lastly, it is important to recognize that community gardens are not just about food production--there is not one predominant kind of use by community gardeners. These are not areas simply used for leisure, nor purely used for food growth. Community gardens are used for a variety of reasons and therefore must be structured to serve multiple needs, not just one purpose. By recognizing that these spaces are not only productive, but also social and educational spaces, community gardens can be organized to meet these needs. The complexity of garden use also suggests that the evaluation of these community garden should not be limited to how much food they produce or how many mouths they feed. Although many community gardens make it their mission to increase food security, that is just one aspect of their overall

goal to *build community health*, an objective that is more inclusive of their multifaceted work. Community gardens should be recognized as social, environmental, and educational spaces that *also* work to provide food, and should be evaluated as such.

Limitations

The sample size of this survey was small, which prevented statistical analysis to explore the generalizability of these findings. However, the contextual details in the responses provide a meaningful contribution to the under-examined role of governance structure in community gardens. Due to the sensitivity and personal level of my demographic questions, rapport needed to be built with garden organizers before they put me in contact with their users. The amount of time spent communicating with garden organizers improved the quality of responses received.

Additionally, with the discussion of rules comes the discussion of enforcement; rules are somewhat insignificant unless they are followed or enforced. Gardens can have physical rule enforcements like locked gates and fences, or have personal enforcement in the form of staff who regulate the space. The rules discussed in this report are the rules as reported by the garden organizer. How these rules are followed in the day to day operations of the gardens poses a different but important question that reaches beyond the scope of this study. To see how rules are enforced, followed, or not followed in community gardens would enhance the understanding of the relationship between garden structure and user interaction in these spaces.

VII. Conclusion

This study sought to understand the relationship between community garden governance structures and how they are used by gardeners. Two important features of governance were uncovered: garden networks and sharing gardens. These two governance mechanisms enhance the framework of governance style as outlined in the literature, by adding both a supra-garden governing force (garden networks) and a new style of garden organization (sharing gardens). Additional findings are the ability of gardens to reach a socioeconomically diverse population, especially in terms of food security status, and the multi-faceted role that the gardens play in the lives of community members. All four of these mechanisms surrounding garden governance and use are vital to understanding and ultimately improving the dynamics of garden accessibility. This exploratory study aims to open the door to future research that links garden governance mechanisms to accessibility and utilization. A deeper understanding of that link—how rules and operations relate to community engagement—can guide future community garden establishments and local government policies with the ultimate goal of building garden and food provisioning spaces to best serve the needs of the community.

Appendix 1: Garden Organizer Survey

1. Please choose the category that best describes your garden:

Government run

Non-profit run

Community/grassroots run

Other:

2. If you would like, please enter the name of your garden (so I can tie your responses to your garden user responses):

3. Does your garden have a mission statement?

Yes

No

4. If you answered YES above, please summarize your mission, and how you work to accomplish it. If NO, please enter N/A.

5. Please summarize how plots are allotted in your garden. (First come first serve, rental fees, communal plots, etc.)

6. What are the rules surrounding harvesting at your garden?

7. Please choose the category that best describes your garden staff: Mark only one oval.

Paid staff

Volunteers (not garden plot renters/users)

Garden users that volunteer to staff the garden

No garden staff

Other:

8. If you have staff, please summarize their roles and duties (weeding/maintenance, instruction, planting, etc.). If not, please enter N/A.

9. What are the main sources of your garden's funding? Check all that apply.

Government funding

Community donations

Grants

User fees

Other:

10. How do you advertise/share information about your garden to the community?

11. Do you offer any garden classes? If YES, please describe (topic, cost).

12. What has been the most successful method of reaching interested community members?

13. Please summarize how people use your garden (regulars, volunteer hours, stopping by).

14. What do you feel is the main reason people use your garden? (Leisure, social, growing food for direct consumption etc.)

15. What do you think the are biggest barriers that your garden users face in accessing the garden? (Transportation, time, skills, cost, etc.)

16. What kind of information, if any, do you collect from your garden users?

17. Is there any information that you would like to collect from your garden users in the future?

18. Is there anything else that you would like to share that I have not asked about?

Appendix 2: Garden User Survey

1. Please list the community garden(s) you use:

2. If you DO NOT currently use a garden, check here and skip to section 5 (BARRIERS).

    I do not currently use a community garden.

3. How would you best describe your use of the garden? Check all that apply.

    Rent my own plot and manage it

    Work on a communal plot

    Harvest from communal plots

    Attend volunteer days

    Attend garden-run workshops

    I do not use, just stop by

    Other:

4. How often do you visit the garden (during the gardening season)?

    Daily More than once a week

    A few times a month

    Every couple of months

    A few times a year

    Other:

5. How have you learned about gardening? Check all that apply.

    Personal background knowledge

    Garden staff members

    Garden-run workshops

    Outside workshops or materials

Friends/family

None

Other:

6. How do you make decisions about what to plant? Check all that apply.

Advice from garden staff

My own experience or research

Garden-provided materials or resources

Friends/community advice

I do not make decisions about what to plant

Other:

7. Do you use the tools or materials (shovels, hose, gloves) of the community garden?

Yes

Sometimes

Never

Other:

8. How far do you live from the garden?

Less than a mile

1-2 miles

3-5 miles

More than 5 miles away

9. How do you get to the garden? Check all that apply.

Car

Bus

Bike

Walk

Other:

10. Please rate your agreement with main motivations for using the garden: Mark only one oval per row.

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
As a hobby, for leisure					
To grow food for direct consumption					
To improve physical health					
To spend time outdoors and connect with nature					
As a social/community activity					
To provide food for others					

11. Which of these statements best describes the food eaten in your household in the last 12 months?

Enough of the kinds of food we want to eat

Enough but not always the kinds of food we want

Sometimes not enough to eat

Often not enough to eat

Prefer not to answer

12. What do you grow or harvest from the garden? Check all that apply.

Food

Ornamentals (flowers)

Herbs

Other:

13. How important is the food from your community garden to your overall sourcing of food? (Scale of 1-5 with the following range definitions)

(1) Not very important, I am not reliant on community gardens as a food source

to (5) Very important, I am very reliant on community gardens as a food source

14. What brought you to your community garden? Check all that apply.

Community or friends

Flyer

Personal research

Email or online marketing

Walking by

Other:

For both garden users AND non-users. Please rate how significant the following barriers are to your use of the community garden:

15. Transportation: getting to the garden. (Scale from 1-5 with the following range definitions)

(1) Not at all a barrier to (5) Very significant barrier

16. Knowledge: knowing what to grow and/or how to garden. (Scale from 1-5 with the following range definitions)

(1) Not at all a barrier to (5) Very significant barrier

17. Cost: rental rates or registration fees. (Scale from 1-5 with the following range definitions)

(1) Not at all a barrier to (5) Very significant barrier

18. Time: free time to spend at the garden. (Scale from 1-5 with the following range definitions)

(1) Not at all a barrier to (5) Very significant barrier

19. Equipment: access to tools, water, fencing, etc. (Scale from 1-5 with the following range definitions)

(1) Not at all a barrier to (5) Very significant barrier

Again, this is COMPLETELY CONFIDENTIAL and you can skip questions you do not feel comfortable answering.

20. Please select your age group:

Under 18

18-22

23-30

31-40

41-60

61-70

71+

21. Please select the option that best describes you:

Non-Hispanic White or Euro-American

Black, Afro-Caribbean, or African American

Latino or Hispanic American

East Asian or Asian American

South Asian or Indian American

Middle Eastern or Arab American

Native American or Alaskan Native

Other:

22. Please select the option that best describes you:

Female

Male

Non-binary

Prefer not to say

Other:

23. How many people live in your household (sharing common resources/income)?

1

2

3

4

5

6

7+

24. Please select the category that best represents your HOUSEHOLD'S most recent annual income:

Less than $10,000

$10,000 - $20,000

$20,000 - $30,000

$30,000 - $40,000

$40,000 - $60,000

$60,000 - $100,000

$100,000 +

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