

Re-envisioning emergency food systems using photovoice and concept mapping

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Acknowledgements: This research received financial and logistical support from the Atlanta Community Food Bank as part of their Stabilizing Lives project. We are grateful for the work of Vista Gilliam, Sarah Otto-Wang, Hillary Jourdan, Aspen Kemmerlin, Grace Barrett, and Jacy Donaldson in helping complete this research.

This article has been published in *Journal of Mixed Methods Research*. Full citation:

Shannon, J., Borron, A., Kurtz, H., & Weaver, A. (2020). Re-envisioning Emergency Food Systems Using Photovoice and Concept Mapping. *Journal of Mixed Methods Research*.
<https://doi.org/10.1177/1558689820933778>

Abstract

Researchers engaging in participatory planning initiatives can enhance participant involvement by using concept mapping integrated with photo-elicitation. Focusing on a research collaboration between the University of Georgia and the Atlanta Community Food Bank, our research used these methods to identify sources of instability for food insecure households and generate new program ideas. Our results underscore clients' capacity for procuring food and providing input on pantry policies. The productive conversations facilitated through this process also demonstrate the need for stronger communication between pantry staff and clientele. This article makes a unique contribution to mixed methods research by demonstrating how an integrative research design can support communities of inquiry and participatory research that identifies obstacles faced by low-income households.

Keywords

Food banks; Photo elicitation; Concept mapping; Food insecurity; Georgia

Introduction

One of the strengths of mixed methods research is its focus on integrating knowledge production across epistemological divides. This work happens along a number of axes, bridging disciplinary, theoretical, and methodological differences. For researchers interested in participatory research and planning, the explicit attention to integration in mixed methods research provides a uniquely valuable resource, as it builds common understanding among academic researchers, community leaders, and local residents (Loukaitou-Sideris, Gonzalez, & Ong, 2017).

This paper describes research that integrates two existing methodologies to enhance a participatory research design: concept mapping and photo-elicitation. Concept mapping is an established, mixed method approach to soliciting and aggregating group opinion (Kane & Trochim, 2007; Trochim, 1989; Windsor, 2013), one that thoroughly integrates qualitative and quantitative methods (Wheeldon, 2010). In research with a small number of participants, concept mapping is broadly similar to focus groups, as it solicits and aggregates perspectives from multiple individuals. Although focus groups are a traditionally qualitative methodology, concept mapping makes use of quantitative clustering techniques—most commonly multidimensional scaling and factor analysis—to identify shared opinions. This approach means that it can be used with larger groups, similar to survey design.

Concept mapping traditionally makes use of words and phrases, but in this case we used photo-elicitation to generate sortable “statements”. The use of participant-generated images in social science research goes by several names. Broadly, these methods can be distinguished along a spectrum of participant engagement and empowerment. On one end of the spectrum, Wang and Burris (1997) developed photovoice as a form of participatory action research (PAR) in which the research was intended to build community empowerment to address local problems and support collective action for social change. On the other end of the spectrum is visitor-employed photography, used in landscape design and natural resource management fields to evaluate responses to managed landscapes (MacKay & Couldwell, 2004). Somewhere in between on the spectrum are photo-elicitation interviews, defined as active interviews (Holstein & Gubrium, 1995) that use participant-generated images as prompts for semi- or un-structured formats.

Our research group—comprised of university academics, staff at a food bank and local agencies, and food pantry clientele—used a research design comprised of these two methods to identify key factors shaping food security and food bank use. Photo-elicitation helped bring clients’ everyday experiences to life and often generated new or surprising insights, while the concept mapping process helped organize the collective conversation around common themes. In this paper, we outline the steps we took to combine these methodologies and highlight the ways they can support participatory planning and research.

Case study: Improving food security

In the wake of cuts to social welfare programs since the 1980s, food banks have played an increasingly large role in providing emergency food assistance to food insecure households (Riches, 2018). By aggregating and distributing surplus foods from corporate and individual donations, food banks and partnering organizations act as a resource for local food pantries who often rely on volunteer labor and minimal paid staff. The largest hunger relief organization in the United States, Feeding America, worked with approximately 200 regional food banks to provide four billion meals to 46 million individuals during fiscal year 2016 (Feeding America, 2016).

These often quoted numbers are striking, but some critics have questioned whether these methods of assessment adequately represent food banks’ ability to decrease rates of food insecurity. The primary causes of food insecurity—low wages, decreasing funds for social assistance programs, and high health care costs—are not captured in measures of increased capacity such as pounds of food delivered, nor are they traditionally a major focus for regional food banks (Fisher, 2017; Riches, 2018). While Feeding America recognizes that clients often make financial tradeoffs between food and other pressing needs

such as housing or healthcare, the latter concerns are seldom incorporated into local programs or evaluation metrics (Weinfield et al., 2014).

This paper describes a partnership between the Atlanta Community Food Bank (referred to hereafter as “the food bank”) and researchers at the University of Georgia (UGA) to pilot a mixed-methods, participatory methodology to study drivers of food insecurity within the region. In 2016 the Atlanta Community Food Bank initiated a three-year strategic initiative—Stabilizing Lives—to develop, implement, and assess more holistic and concentrated services delivered through partner agencies to help clients achieve food, housing, and financial security. Focused primarily on the working poor, UGA researchers and food bank staff, along with staff, volunteers, and clients at local agencies, collaborated on research identifying core issues affecting food security and food bank use, laying the foundation for a new service model that more holistically support clients’ needs.

The mixed methods methodological purpose of our paper is to evaluate how the integration of concept mapping and photo-elicitation methods can enhance participation and generate new conceptual insights. Empirically, we use these methods to uncover key obstacles facing food pantry clients in their daily food provisioning. Photographs highlighted unexpected themes and concerns from clients’ everyday lives, and concept mapping facilitated group identification and discussion of themes across photographs. The integration of these incorporated the everyday lived experience of pantry clients as well as meaningful interaction between clients and agency staff. The resulting process empowered client voices and provided a model of participatory research for food bank staff. In sum, we argue that our integrative, mixed-methods design facilitated productive conversation across epistemological and experiential divides. As a research model, it effectively fostered communities of inquiry able to identify key issues affecting the food security of low-income households.

Mixed methods review and methodological integration

Our research integrated two paradigms—philosophical pragmatism and the culture-centered approach to communication. These perspectives reflected the diversity of our research team, which was comprised of academics in both geography and agricultural communication as well as staff, volunteers, and clients connected to the food bank’s network. In the section below, we summarize these multiple levels of integration. We specifically note places where integration was used to create synergy between methods, helping the sum of our research become “more than the individual components.” (Fetters & Freshwater, 2015).

Fetters and Molina-Azorin (2017) identify three domains of integration in mixed methods research: the philosophy, methodology and methods. This trilogy, along with the multiple subdomains listed in their article, provides a heuristic for designing and evaluating the depth of integration within a mixed methods study. We made use of an existing mixed methods approach—concept mapping—that combines qualitative techniques such as focus group discussion with a statistical analysis designed to identify clusters of similar statements or, in our case, images generated by participants. Our project built on the approach of Haque and Rosas (2010), integrating photo elicitation into the concept mapping process to identify areas where the food bank could most effectively provide support to food insecure households. We further extended our analysis through qualitative coding of individual client interviews, which focused on their volunteered photos. This methodological integration provided unexpected insights into factors shaping food practices in low-income households.

Integrating Methods: Concept mapping and photovoice

Typically, concept mapping follows a six-step process: identifying a research focus, generating a list of target statements, individual sorting of statements into groups, cluster analysis to identify common groupings, collective interpretation of clusters, and application of results to the problem at hand (Kane & Trochim, 2007). Concept mapping has been used to study topics as diverse as public health decision-making (Meagher-Stewart et al., 2012), adolescent sexuality (Bayer, Cabrera, Gilman, Hindin, & Tsui, 2010), learning difficulties (Nowicki, Brown, & Stepien, 2014), domestic violence (Burke et al., 2006), and neighborhood impacts on health (Haque & Rosas, 2010). Windsor argues for the value of concept mapping for participatory research, specifically describing its value in “maintaining the depth and diversity of community’s views, increasing community engagement in research, while also developing culturally tailored hypotheses and frameworks that can be subsequently tested with larger samples” (Windsor, 2013, p. 276).

Our research method used the general framework of concept mapping, but used photo-elicitation rather than written statements. The goal of most photo-elicitation methods is “that people are not treated as passive participants and images but as active participants in the taking of photographs and discussing the images” (Bisung, Elliott, Abudho, Schuster-Wallace, & Karanja, 2015, p. 210). In the tradition of photovoice, we used photo-elicitation to amplify and illustrate the perspectives of members of socially marginalized groups and to disrupt common assumptions about social issues by eliciting experiences and perspectives often unheard in policy and planning discussions (Alam, McGregor, & Houston, 2017; Borron, 2013). Several studies have used photo-elicitation in food studies research. Heidelberger and Smith (2015) used participant photographs with a cohort of pre-teen participants to better understand the

influence of the social and built environment on food consumption decisions. A number of other studies have used this method similarly to involve neighborhood residents in analysis of local food options and shopping habits (Diez et al., 2016; Borron, 2013; Cannuscio, Weiss, & Asch, 2010).

Our research did not move directly to collective action, as would be the case in photovoice, but through the concept mapping, it did lead to discussions of policy change relevant to the topics uncovered. As expected, photo-elicitation interviews led to richer conversations and greater participant autonomy than could have been expected in conventional semi-structured interviews (Kurtz & Wood, 2014).

Both photo-elicitation and concept mapping encourage integrative research. Photo-elicitation is traditionally a qualitative method, but one that is multi-modal, using both visual and textual analysis. Concept mapping by design includes qualitative and quantitative tools. Building on previous work by Haque and Rosas (2010)—the only previous example of integrating these methods in peer-reviewed literature—our project draws out the potential of these two methods to facilitate collective discovery of dynamics shaping household food security and instability, an approach designed to encourage the development of innovative approaches to empowering food pantry clientele. These methods grew directly from our commitment to both pragmatism and the culture-centered approach, allowing us to convene a diverse group to identify and address systemic barriers to food security.

More specifically, we used photos to elicit conversations about clients' everyday "food worlds", defined as the places and times in clients' daily life where they get, transport, prepare, or eat food. We value the ways that the use of photographs leads us to unexpected topics within the research process (Kurtz & Wood, 2014) and their greater affective power when compared to textual, conceptually-oriented statements. Photographs can include small, unintended details—the ingredients used in a particular meal, the setup of a kitchen, the friends or family visible at the table—that are likely to be omitted in a more conventional semi-structured interview. This makes them fertile ground for conversations on a range of topics, ranging from budgeting and household economies to the dynamics of individuals' social networks.

Concept mapping enables research teams to extrapolate from these everyday experiences, identifying larger patterns that are culturally relevant and reflective of the challenges faced by pantry clientele. We employed concept mapping to expedite the collection and analysis of individual responses, and provide opportunities for group input on the results and their interpretation. The use of photos in the analysis, rather than textual statements, created opportunities for visual images to produce unexpected results. The focus on the *visual*, rather than the *conceptual*, allowed more flexibility for group members to interpret both their own photos and group results. Photos focus attention on immediate moments from individuals'

lives, leading discussion to work outward from that specific event rather than inward from broad concepts such as the accessibility of food or transit. Groups of photos can highlight themes that would be difficult to recognize or articulate verbally, as our results below illustrate.

Mixed method research sometimes integrates methods for what Fielding (2012) terms *convergent validation*, or confirming that results are consistent across approaches and thus improving the validity of research findings (see also Small, 2011, who frames this as confirmation). Our approach combines methods at a more fundamental level, one that “can extend the scope and depth of understanding” (Fielding, 2012, p. 128) by leveraging the potential of visual data to generate new themes and insights. Put another way, by using client-generated photographs within the concept mapping process, we develop a single, hybrid methodology rather than employing each methodology separately in distinct, parallel tracks. This results in a new method that is particularly useful for this exploratory, participatory planning initiative.

Philosophical/theoretical integration

Our research design was grounded in two complementary frameworks: pragmatism and the culture-centered approach. Pragmatism emphasizes the socially embedded nature of knowledge (Feilzer, 2009; Harney, McCurry, Scott, & Wills, 2016), and enrolls diverse social actors to name pressing problems and develop solutions, a process referred to within pragmatism as *inquiry* (Barnes, 2008; Lake, 2017). The epistemological flexibility of pragmatist research—its emphasis on considering the world through different vantage points—makes it well suited for mixed-methods research. In our case, pragmatism’s emphasis on communities of inquiry was particularly useful as a framework.

Similarly, the culture-centered approach (CCA) is “built on the notion that the various ways of understanding and negotiating the meanings of health are embedded within cultural contexts and the values deeply connected with them” (Dutta 2008:2). It focuses on the ways culture grows out of the interplay between individual agency and structural constraints, highlighting how power shapes everyday interactions with—in this case—the food system. CCA thus develops ways to co-develop new knowledges that name structural obstacles and develop alternative practices and language where previously marginalized voices play a more central role. CCA shares a constructivist approach with pragmatism, but has a greater emphasis on the ways that structural constraints shape cultural practices.

Our research team drew on both these frameworks in developing the study design. Pragmatism and CCA share many common commitments: a focus on actionable research addressing immediate social problems

using participatory research methods. Through our conversation, we identified common ground between these frameworks. This in turn informed the development of a mixed method for community inquiry, one that highlights structural factors contributing to food insecurity and household food pantry use while grounding inquiry in everyday experiences.

Team/Researcher integration

Fetters and Molina-Azarín (2017) note that team integration “involves leveraging personal and professional background experiences that lead one to consider, and hold valuable, qualitative, quantitative, and mixed methods procedures for making sense of the world” (2017, p. 296). Among the academic members of our research team, two faculty have expertise in qualitative methods, including both photo and discourse analysis. A third member has published multiple journal articles in spatial and statistical analysis. Given our backgrounds, we entered this project ready to be flexible in our epistemological and methodological approach to the research, and concept mapping had strong appeal as a method that drew upon our respective areas of expertise.

In addition, we explain in separate articles (Kurtz et al., 2019; Shannon et al., 2019) how inclusion of food bank staff as key members of the research team fundamentally shaped this research. These staff brought their own personal experiences and practical expertise about the functioning of individual agencies and the dynamics shaping agency level policies around food distribution. The diversity of our research team forced us to be epistemologically nimble in translating the research design and findings across areas of expertise, institutional contexts, and personal backgrounds. The inclusion of food bank and agency staff specifically also allowed our research findings to be immediately relevant to policies and practices at these organizations.

Research setting

The research was conducted through a partnership between UGA faculty and staff at the Atlanta Community Food Bank. In 2017, the food bank distributed 70.5 million pounds of food to 695 agencies in 29 counties across northwest Georgia (Figure 1) (Atlanta Community Food Bank, 2017). With the 2016 Stabilizing Lives initiative, the food bank aimed to move from a model that emphasized providing emergency food to one focused on improving the long-term economic and social stability of client households. In developing this new model, the food bank wished to actively involve food pantry clientele to provide perspective and program ideas. The researchers worked collaboratively with food bank staff to develop a participatory research process at five partnering community agencies. Two were located in the

city of Atlanta and three were located in suburban communities of varying density. Four of the five partner agencies were faith-based organizations. Staff at the food bank coordinated with local agency staff to recruit clients and schedule meeting times for research meetings. The food bank provided funding to cover compensation of all participating clients, as well as two semesters of a research assistantship for one graduate student.



Figure 1: Atlanta Community Food Bank service area (shown in white)

Study design

Each of the five agencies recruited by the food bank convened a planning team made up of agency staff, volunteers, and clients, a group that we collectively refer to as participants. We selected local agencies based on location and the sociodemographic characteristics of their communities. Ideally, the design of each planning team should be based on a representative sample of its respective agency. However, due to the number of meetings required of participants (clients, four times; staff and volunteers, three times), recruitment was semi-purposive based on inclusive criteria: a prospective participant's connection to the agency, as well as availability for the five month study period.

It has been noted that small sample sizes in concept mapping can call research results into question (Balomenou & Garrod, 2016). While our blending of photo-elicitation and concept mapping does not directly address this concern, we agree with Hesse-Biber (2012) that a focus on statistically generalizable validation as an outcome of methodological integration in MMR can be “embedded in a deductive model of reasoning that relies on the testing of theory and values objectivity over subjectivity” (Hesse-Biber, 2012, p. 138). That is, the process of integration can also include attention to the perspectives and positionalities of those involved in the research process and the opportunities for often excluded voices to be heard. While our sampling design does not support statistical generalization, it did consistently create space for agency clients’ experience and perspectives to be shared with local planning teams. In this sense, we argue that our results are meaningful as they demonstrate how this mixed-methods, participatory research approach can be empowering for agency clients and produce unexpected insights into the factors shaping the use of food assistance.

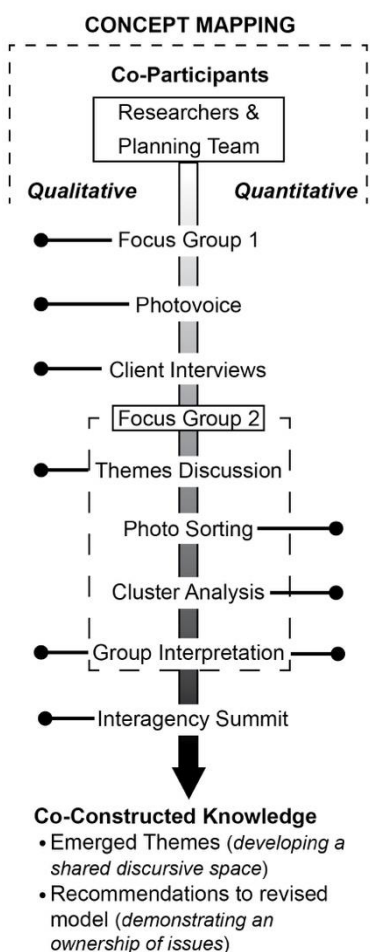


Figure 2: Outline of research design

CONCEPT MAP*	PARTICIPANTS			
	Clients	Volunteers	Agency Staff	F.B. Staff
Focus Group 1	●	●	●	○
Photo-elicitation	●			
Client Interviews	●			
Focus Group 2	●	●	●	○
Interagency Summit**	●	●	●	●

*Repeated at all five partner agency locations **All five agencies combined

● = Active participants ○ = Observers only

Figure 3. Breakdown of group participation

Figure 2 outlines our research design. Each new stage involved recursive use of data generated in previous stages. For example, emergent themes from the focus group 1 and client interviews were integrated into the discussion guide of focus group 2. This allowed for a validation of data, as well as a deeper and more thorough examination of key issues or concepts that emerged throughout the process. Figure 3 visualizes the extent of involvement on behalf of the participants throughout the research process. Planning teams met in an initial focus group to discuss the purpose of the research and identify initial factors that affected individuals' ability to access food (Weinfield et al., 2014). Clients then met with researchers to discuss the photo-elicitation stage of this project. Using their own mobile phones or phones provided by the food bank, clients were asked to take and caption approximately fifteen photos of their food world (defined above) over a three-week study period, which we found to be an appropriate length when piloting this approach. While researchers discussed possible topics for photos with clients, we offered no specific examples that might bias the photos clients submitted. Periodic reminders via text and phone calls during the study period provided reminders to clients with no or very few photos. Clients submitted photos with captions via text messages to a project phone number or by bringing their phones to the individual interviews. For this section of the project, 31 clients submitted 344 total photos for consideration. Of those, 14 clients submitted ten photos or more. One client submitted 44 photos--the highest count--and five submitted only one.

After the study period, client members of the planning team met individually with researchers to discuss the photos they had submitted. During semi-structured interviews, clients selected and discussed five photos. Clients could also choose from a curated group of photos from all agencies, adding or substituting what they considered personally meaningful photos to their own collection. Interviewers asked clients to talk about each photo individually, focusing on the client's reasons for taking and/or choosing the photo and the scene pictured within it.

The photo-elicitation interviews were audio recorded and transcribed, after which we used inductive data coding in Atlas.ti to identify emergent themes. A grounded theory approach to the textual data (Corbin & Strauss 1990) meant that we used a combination of open coding, axial coding and selective coding in iterative passes through the data. We started with open coding – categorizing, comparing and conceptualizing elements of the data, followed by axial coding that re-ordered codes in order to look for links between categories. We then used selective coding to relate emergent categories to each other, and to identify gaps in emergent understanding. This grounded theory process allowed themes to emerge that offered a deeper insight into the current issues, needs, and opportunities available within the greater food bank network.

Once interviews were completed, we assembled the five photos selected by each client into a single photo deck. These photo decks were unique to each agency and similar to a card deck, with each photo on a 5 x 5 inch piece of cardstock. These ranged in number between 13 and 27 photos, though all but one had more than 20. Trochim (1989) suggest limiting sorts to less than 100 items, and so our photo decks were smaller than other studies using this method. Overall, however, 101 photos were used in this study and the resulting sorts generated productive discussion on a diverse set of topics.

The photo decks were used in a concept mapping exercise at follow-up focus group meetings with each of the five planning teams. In addition to concept mapping, we used the follow-up focus groups to present and discuss emerging themes from the initial focus group and individual client interviews. To begin, each member of the planning group was given a printed photo deck that was unique to each agency. In the first sort, they were asked to sort the photos into 3-8 groups based on their perceived similarity—grouping photos that had similar themes. In the second sort, participants were asked to group photos based on the role that the food bank could play in the story shown in the photo (e.g., providing food for meal times). Participants placed photos in one of three groups for this sort based on whether the food bank could have a direct, indirect, or no role in the story suggested by the photo. At least three members of the research group (university/food bank staff) assisted with this process.

Once all team members had completed both sorts, one of the researchers exited the room to conduct the cluster analysis in real time. This aspect of the process is common in concept mapping and provided an efficient, computational method for identifying commonalities between the individual photo sorts. The first step was to enter participants' photo sorts into a Google form. These data were then dynamically downloaded into the R software package using the Googlesheets package. For the first sort, we calculated how many times each pair of photos were placed in the same group, creating a matrix showing the count of this co-occurrence. For example, in the example below, photo B was placed in a group with photo A two times, but it was placed with photo C only 1 time. Photos A and C were not placed in any groups together.

Based on this matrix, we used the `dist` function in R to create an item distance matrix from these data, where a lower distance indicates photos that were more often placed together. To place these photos in groups, we conducted a hierarchical cluster analysis using the `hclust` function in R (Figure 4), using visual inspection to determine the appropriate number of groups and the `cutree` function to create group identifiers for each photo. We then calculated group averages for the second sort, the potential role of the food bank in addressing highlighted issues, with higher numbers suggesting a greater potential role for the food bank in addressing issues shown in the photographs. This quantitative analysis was crucial to the

overall process, providing insight into similarities across sorts that would be more difficult to achieve through group discussion.

	Photo A	Photo B	Photo C
Photo A	NA	2	0
Photo B	2	NA	1
Photo C	0	1	NA

Table 1: Example of the co-occurrence matrix

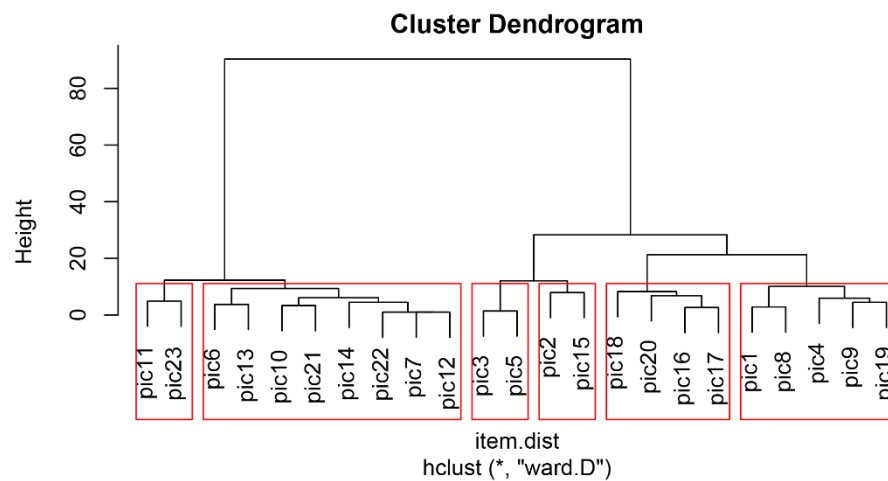


Figure 4: Dendrogram produced in R in hierarchical cluster analysis.

While one researcher was conducting the above analysis, the remaining researchers remained with participants to review the initial themes that had emerged from textual analysis of transcripts of the first focus group and the photo-elicitation interviews. Participants were given a handout listing these themes, and after a brief overview, planning team members were invited to ask questions or provide additional insight into each one. This discussion served two main purposes. First, it invited planning teams to expand or question the initial results of our qualitative analysis. Second, it provided context that could frame our collective interpretation of the photo groups. These discussions were recorded and coded as part of our analysis.

Following the discussion of emergent themes, the planning team then reviewed the groupings generated from their photo sorts. We glued photos from each group on separate pieces of poster board based on the groupings generated through cluster analysis and then placed these around the room for planning team members to review. They were provided with large Post-it notes and asked to create a title for each group.

Lastly, the team had a collective, open-ended conversation about each group of photos and its suggested title to better understand the themes that linked photos together. The result was a heavily annotated collection of photos and text that represented one aspect of clients' food worlds (see Figure 5).

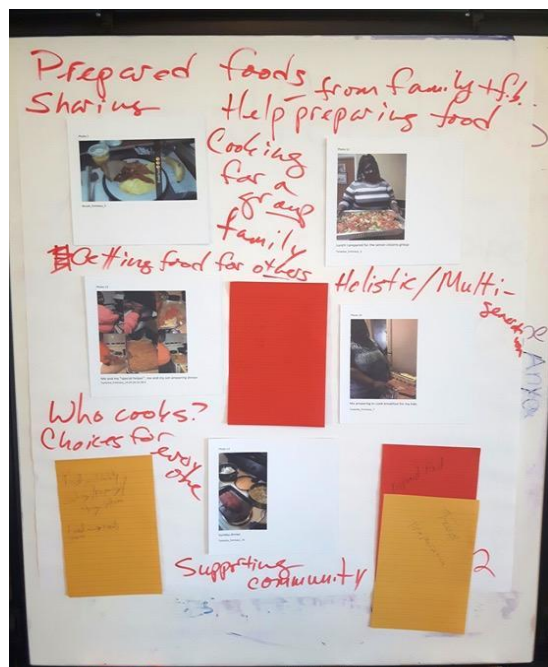


Figure 5: Sample photo grouping with suggested titles on Post-it notes and additional notes from our group conversation. This grouping was clustered around support networks.

The iterative nature of this second focus group, moving from individual photo sorts through a discussion of interview themes to a collective interpretation of group photos, included planning team members as active interpreters of research results. This process also combined the unique concerns identified through one-on-one interviews with the deliberative process of group conversation while interpreting photos or responding to interview themes. Throughout the process, we returned to photos as a source of new insight, asking what they meant both individually and within their groups. These shared meanings based on photos ultimately led the research in a different direction than might have been the case in a conceptual and/or textually focused discussion.

The final step of the research reported here was an interagency summit held at the food bank's headquarters. Members from each planning team, along with food bank staff and other social service providers, met to discuss the results of the research process and brainstorm ideas for new service models at local agencies. The research team led attendees through the research design using photos from two

different agencies as examples. The team then presented initial recommendations based on our results, similar to those presented in the discussion section of this article.

Results

Photos and interview themes

Inductive coding of focus group and interview transcripts guided by grounded theory yielded four emergent themes, which we outline below.

Theme 1: Helping others and self

Clients frequently described contributing to the care of friends and family, such as sharing food money or information when available or providing rides or other forms of informal support. These acts were often reciprocated, providing an informal economy of mutual support. During our meetings, team members often shared contact information with each other for resources providing financial aid or inexpensive services such as auto repair.

The importance of this mutual support was articulated by Dawn¹ as she shared a single photo of food she and her mother ate at a local restaurant (Figure 6). She stated that while they “don’t eat together often,” when they do, they “try to make the best of it. Snap pictures of the food.” In the interview, this particular image opened up a discussion of the ways that Dawn’s mother provided childcare that allowed Dawn to earn a higher wage:

She works - yeah she works during the day and I work at night. So if - I mean she'll work, she shows up during the day because if I work the day, I chose to work the day shift as well while they're in school, I won't have to pay nobody to watch them. But I been working this job for like seven years, so I prefer to do a night shift. 'Cause the night shift, I make more money. And it helps me out a lot with the bills and with them and things like that.

¹ All names are pseudonyms



Figure 6: Photo of a meal Dawn shared with her mother

Discussing the support she receives from her mother progressed into a conversation about the mutual support Dawn and one of her friends provide to each other. As Dawn described it,

I have a best friend that—the best friend since eighth grade. She supports—I have four kids, she has six kids. I support her kids. Like if she needs diapers for her baby, I buy them. If I need things for my kids, like clothes, you know, things like that, she tries to go buy it for me. We hang out all the time. For nights when I'm off work, she's at my house. When she's off work, I'm at her house. My kids play with her kids all the time. Go to birthday parties, go to recreational, the fair. We do a lot of things together.

In this case, the photo of a shared meal created opportunity to discuss a relationship that provides informal childcare, household supplies, and emotional support. In multiple interviews, other clients also emphasized the active ways they sought out and participated in these networks.

Theme 2: Dealing with health concerns

Many clients shared photos that prompted discussion about how financial constraints were exacerbated by the need to procure specialty foods needed for health reasons. For example, the photos shared by a client we will call Beatrice were mainly of food she prepared at home. Figure 7 shows one of these photos, which she captioned “smoothie blood orange banana vanilla yogurt.” The image is a before and after photo of the smoothie. In the interview, Beatrice talked about how these smoothies provided a healthy and convenient option for her children on the way out the door for school. While these smoothies were mainly

for her children, Beatrice also drank them when there was extra or when a child is out of town, pointing out its health benefits, claiming that after drinking it, “my skin's all perky.”



Figure 7: “Smoothie blood orange banana vanilla yogurt”

Another client, Lillian, also had concerns about the foods available at her local agency. In one photo (Figure 8), Lillian took a photo of the car line for a mobile pantry, which provides a prepackaged bag of foods to cars as they drive up. This line was quite long, as the photo illustrates. According to Lillian,

When we got to the end of the line, there was a guy there holding a cake. A sheet cake, okay? And it had tons of chocolate frosting, and roses, and like shaved chocolate. My kids are in the backseat of the van screaming like they're going down a rollercoaster, because there is this cake waiting for us at the end of this line, and they are jumping around, trying to get out of their seat belts, going crazy. That's awesome. But you know what? I'd much rather have a pound of beef, you know?

In this case, the foods offered by her local agency did not support her desire to serve healthy staples—meat or produce—to her children. For Lillian, this is further complicated by the food allergies of one of her sons. More expensive, but safe, ingredients were seldom available through the mobile pantry, and Lillian often had to learn how to cook with unfamiliar foods such as dried beans or find creative ways to use an overabundance of one ingredient such as stuffing or squash. Local agencies often provided recipes and suggestions to help clients know how to prepare new foods. Other clients suggested that they could help prepare short video cooking and shopping lessons on YouTube.



Figure 8: “The cars wrapped around the building, down the street and down two blocks.”

The discussion of Lillian’s photo of the car lineup during a research interview is a useful illustration how a photo of one topic—the long lineup for food—could open into other topics that mattered to clients, such as the availability of foods that supported healthy families and the need for recipes and cooking instructions.

Theme 3: Complexities and uncertainties of life

As is already evident, many pantry clients were dealing with complex life situations: caring for children and grandchildren and dealing with their health conditions, working multiple jobs or searching for a stable one, or managing life transitions. For these clients, food assistance was one piece of a large effort to achieve more financial and personal stability. This also included navigating often frustrating bureaucratic systems for state assistance or balancing the tradeoffs of using funds for food, housing, or health care. As one client stated during an initial focus group:

I had even a guy on the phone who was supposed to be the social worker. Told me, well, bottom line he can't help me... this was years ago, when I, I just started. Just moved here, I was making minimum wage and I tried to get food stamps to feed the kids. And the guy literally told me over the phone that the only way that I'll be able to get food stamps is if I sell my car. And work less hours on my job. And I explained to him, I said 'If I work less hours, I can't pay my bills. And if I sell the car, how am I going to get to work?

While the photos provided by clients were often informal—showing meals or the people sharing them—in a few cases they created more elaborate images to show a portion of their experience. Lillian’s photo in Figure 9 is a primary example of this. Lillian’s caption for the photo emphasizes the desperation of reaching the end of the month with few options left to obtain food for her family and the extensive planning and budgeting she undertakes to stretch the resources available to her. She struggles with how to balance sales taxes or paying for fuel for her vehicle in addition to the costs of the food itself.



Figure 9: “5 days left until we get our food benefits. \$3 left to our name. Should I spend it on meat for dinner? Or use it for gas to get to the grocery store? Better save it to pay the tax on my coupons. In order to use the coupons, we need to pay cash on the ‘tax’ for them, even when we pay with food stamps.”

While the subject of this photo could have been discussed within a traditional interview, the image frames this issue in a particularly powerful way. This image was included in the shared photo deck available to all agencies, and clients selected it for the shared photo deck in three of the four other agencies. By portraying the complex tradeoffs and budgeting needed for those living on low incomes, Lillian’s photo struck a chord with clients across our project.

Theme 4: Taking ownership, being creative, and finding solutions

In both planning team meetings and individual interviews, clients provided suggestions for programs they could help direct to assist agency clients. These suggestions demonstrated a sense of ownership and agency over the issues that complicated their everyday lives. These suggestions focused on programs that could help stretch the household budget, including starting household or community gardens, using coupons or other deals effectively, learning how to prepare foods provided by the agency, or starting a meal club where multiple recipes could be prepared at once using bulk ingredients. Through these ideas, participants suggested opportunities for developing collective capacity, providing ways for individuals to share existing skills and knowledge through local agencies rather than just benefit from their services.

For Rebecca, one of the client participants, this desire to take ownership and share expertise was particularly strong. Rebecca worked in food service at a nearby school system, and she had multiple experiences assisting in community gardens. She expressed a strong desire to help others—particularly children—learn how to grow food and develop their cooking skills, as shown in Figures 10 and 11. In planning team meetings, Rebecca also volunteered to help lead a team to develop a community garden at the local agency. At the time of writing this article, Rebecca and another client had begun working closely with this local agency to not only develop a community garden, but also institute a client support group in which clients can share concerns and brainstorm new ideas and projects to help other clients.



Figure 10: “Teaching, bonding”



Figure 11: “Checking out some deals! Picking out this year’s bounty.”

When asked in her interview about how the desire to teach and be self-reliant shown in these photos compared to experience receiving food assistance, Rebecca noted how coming to the local agency was often disempowering: “It’s humbling coming here. I hate it. I mean, I get excited though, too. You know what I’m saying, I really don’t want to have to go but I have to.”

In this case, Rebecca’s photos highlighted her existing skills and background, ones she was willing to share within the context of the local food agency. They also provided occasion for her to express ways that the structure of the local agency gave her few chances to do so.

Concept mapping the photos

While individual interviews provided insights into factors shaping individuals’ need for and use of food assistance, the concept mapping process provided an opportunity for participants to group photos based

on shared themes and then have collective conversations about the stories they felt the photos told. These sometimes uncovered new themes or provided opportunities for the various actors on these teams—staff from the food bank and local agency as well as clients—to discuss agency practices in new ways.

At one agency, a set of photos provided an opportunity to talk more about a theme that also emerged during the interviews—the key role of informal social networks in clients’ food provisioning practices. Figure 4, provided earlier in this paper, shows the sheet used for the discussion. It includes the images grouped together based on the clustering analysis, colored notes with suggested titles for the photo group from planning team members, and additional notes from the group discussion. At first glance, the group noted that these photos mainly showed foods that one client had prepared for various group functions. The client who took these images explained how some of these images showed how she cooked to support larger family gatherings:

Since my little sister passed away, I get this thing where I want to bring me, my brothers and my mother together, with all my grandkids and there's something where we haven't never did in the past. But since she passed away, I felt the need to bring us together and congregate with each other and enjoy each other um ... I'm trying to think, I or, put together with, with food.

After some discussion of other times clients have cooked for larger family gatherings, one client shared how she had balanced Supplemental Nutrition Assistance Program (SNAP, formerly known as food stamps) benefits and the foods available at her local agency with the cooking she did for her extended friends and family:

Like the food stamps that some people get is not enough, because like they have a big family. And then they have to pour extra...extra cash and then like when they go to the pantry like, okay, what should I do? They don't have this, I'm going to need this, I need, and what should I tell you? And when you tell some, certain people in the pantry is not saying, "Here," but other pantries when you say, "Oh, you don't have this proper stuff that I need," "Well you should have to give something else up," you know, they'll be rude about it. So it just, to be honest, some people try to be honest about the things and sometimes you can't.

In this case, “being honest,” involves expressing the needs for certain foods or more foods needed to care for those for whom individuals were cooking food. Guidelines about the frequency of visits and the foods that agency clients can select made it necessary for clients to find alternative ways to obtain needed food. Participants particularly cited SNAP regulations that made it illegal to use SNAP benefits for anyone not in the household. One planning team member expressed her frustration with policies that made it difficult for those experiencing food insecurity to cook and care for others, here referring in particular to a photo of a homemade breakfast:

I made it for my friends, like my family's not here, and, and so it was like how am I going to share and celebrate? And what I think is so beautiful about this, what I see is and it's interesting to hear it, but to me that looks like self care. Just this beautiful breakfast, this spread.

A little later in the discussion, another client expressed the desire that local agencies should be “making sure that the way that we do have things don't prevent people from being able to be a community. Or if we do something like offer classes or some kind of opportunity that, that community kind of ... had an opportunity to thrive in that space.” While these photos showed only the meals prepared for these communities, our discussion highlighted the ways that clients often felt frustrated by policies that were highly individualized, undercutting or ignoring their existing networks of care and mutual support.

Staff from both the local agency and the food bank were able to hear and respond to these concerns. While few concrete plans were made because of this conversation, it highlighted the need for local agencies to more effectively recognize and incorporate these extended social networks into the ways local agencies provide assistance. The conversation about these images quickly moved on from the details of particular events, but by providing a way for the group to reflect on specific moments from clients' food lives, they raised concerns that may have otherwise been overlooked.

Discussion at a different pantry also brought up the issue of trust and disclosure between agency clients and staff and its connection to clients' own sense of empowerment. Figure 12 shows a grouping of two photos from this agency. The image on the left shows coagulated milk at the top of a jug. The caption reads, “We were excited to get four gallons of ‘fresh’ milk from a food pantry. It was spoiled. The kids were upset, we couldn't fix it.” The image on the right shows a prepared meal of rice and beans in a bowl with the caption, “Many of my meals are eaten after the kids and my husband. Tonight, was taco night. There are only 8-10 taco shells in a pack. There are six people in our family. I steam rice to add to the meat and beans to stretch it so there is enough for me, since there is not enough shells for everyone to have 2. Kids first.”

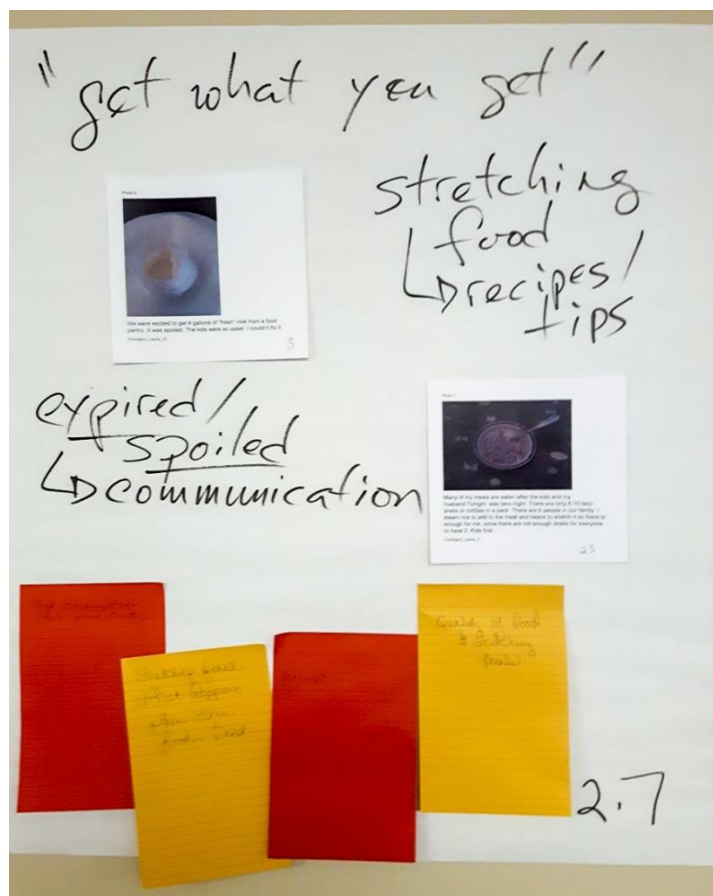


Figure 12: Two photos grouped together with comments

On the surface, these two photos are an odd pairing. One shows spoiled milk, while the other shows a weekday meal. Yet the phrase noted at the top of this image, often used with children, refers to what this planning team saw as the theme of this grouping: “You get what you get, and you don’t pitch a fit.” The Post-it notes on this image give titles including “Quality of food in stretching meals” and “What happens when some food’s bad.” In the discussion that followed, planning team members noted how in both images, someone was forced to accept what they were given and make use of what was on hand. Clients on this team shared strategies for dealing with suboptimal produce, such as taking multiple boxes of slightly spoiled strawberries and freezing those that were still edible. They also expressed a sense of powerlessness over the choices available to them, especially at mobile food pantries where prepackaged boxes were the only option.

In the specific case of the four gallons of spoiled milk, the local agency staff person quickly asked where the milk had come from and whether it was part of a regular or mobile food distribution. She was clearly agitated that this product had been given out, suggesting that the client should have communicated about

the problem: “Okay, so that's something I needed to know though, you should have emailed me, because then I could have told them that it came to me bad, 'cause I didn't open it.” The client responded, “It was really depressing, but I didn’t want to make you feel bad.” Ironically, the food bank later learned that the milk in question was not spoiled but rather was non-homogenized milk sourced from local farmers—higher quality than what was generally available at the supermarket. In multiple ways, this interaction demonstrates the need for better communication and trust among clients and staff.

In this exchange, clients expressed how they habitually learned to make do with limited or poor quality food options. This was especially true at food pantries, where they often felt little ability to control the choices available to them. Clients emphasized that they shouldn’t “make a fit” about the lack of good choices, as they did not want to appear ungrateful for the work of the agency staff person, even though this staff person encouraged clients’ feedback.

Discussion

Research findings

Our research highlights the ways that food pantry clients view themselves as active agents who negotiate multiple sources of assistance—often amongst themselves—to meet daily needs. In contrast to metrics that emphasize the food banks’ ability to increase the flow of foods to needy households, these conversations and images highlight the active way clients are already providing for themselves. Clients in this research identified multiple strategies for obtaining healthy foods for their households, whether using fresh fruit for smoothies or obtaining foods that would not trigger children’s food allergies. Another area not described above was transportation, which was mentioned in multiple groups, including consideration of gas costs and food prices and the use of public transit to travel to and from the food pantry. In this case, planning teams generated multiple potential solutions, including partnerships with a service such as Lyft to provide rides home for clients. With this and other program ideas, such as starting community gardens, hosting meal preparation events, and sharing strategies for budgeting and couponing, clients expressed both ideas and interest in developing programs for others at their local agency. In essence, their ideas juxtaposed their needs with the needs of others around them—suggesting a tendency toward community support and capacity. This runs in contrast to the standard design of a food pantry, which focuses on supplying food relief for individual households.

Contribution to the Mixed Methods Methodology Literature

Our research model demonstrates how an integrative, mixed-methods approach can support the formation of local communities of inquiry, identifying sometimes overlooked factors shaping the livelihoods of marginalized groups. This project was integrated across philosophical, team, research design and interpretative dimensions (Fetters & Molina-Azorin, 2017), combining photo-elicitation and concept mapping and relying upon interviews, planning group discussions, and quantitative cluster analysis. In particular, photographs created space for new and unexpected topics in both individual interviews and group discussion. Because photographs focused attention on specific moments from clients' everyday lives—rather than more abstract conceptual terms—they helped uncover topics the research team had not anticipated at the beginning of the study. For example, the photos of the “spoiled” milk at one mobile pantry demonstrated the need to better communicate about potentially unfamiliar foods and clients' own reluctance to “pitch a fit” about spoiled or rotten foods. For the food bank, this process allowed staff to hear firsthand how everyday financial tradeoffs and food pantry guidelines impacted clients, which they felt was deeply impactful. As we detail in a separate paper, (Kurtz et al., 2019), these informal photographs were quite different from staged photos used for the food bank's public outreach, and the immediacy of these visual images had an affective impact for these staff members. The affective power and generative role of photographs both show the value that these images can have in mixed methods study design.

The use of photographs was key in bridging the qualitative and quantitative components of our research. Both the qualitative and quantitative aspects of our methodology used photos to generate research themes, running along complementary and sometimes overlapping tracks. Peroff et al. (2019) used a similar design that combined photo ranking with qualitative analysis, but in our case we used cluster analysis to identify thematic groups rather than just ranking along a single axis of importance. This design provided a framework both for group sorting of photos into groups and collective interpretation of those groups. The process of cluster interpretation created opportunities for these various actors to identify and talk through problematic aspects of the current model, such as the individualization of food assistance when many clients regularly prepared and shared food in extended social networks. In this way, the qualitative and quantitative analysis of photos together facilitated a collective naming of problems and early work at planning potential solutions.

For the food bank, this process developed a dynamic model for the active participation of clients in program development. As another example, multiple clients indicated that they waiting for food in a client choice model was preferable to being rushed through an impersonal process where client choices were not considered. The food bank has communicated this finding to local agencies and created printed

materials and provided links to online videos with more information on food preparation for clients to view while waiting. While we did purposively choose agency partners from across the food bank's service area, participant recruitment was done using a semi-purposive sampling strategy, and results from this research are not generalizable to all agencies. Still, as a process, we find evidence that this combination of photos, interviews, cluster analysis, and focus groups creates opportunities for broadening participation and facilitating constructive conversation within and between agencies serving low-income populations.

Conclusion

At the time of this paper's writing, the Atlanta Community Food Bank is piloting the program model for their Stabilizing Lives initiative, based on insights generated from this research. In addition to the process described in this paper, members of the research team developed a subsequent research project that used an arts-based approach to participatory research, involving food pantry clients in collage design (Raffaelli & Hartzell, 2016) and found poetry (Lafrenière & Cox, 2012). This approach not only delves deeper into individual client experiences, but also creates new discursive spaces in which clients work together to develop collaborative project ideas, specifically addressing client needs and available community resources. This work of translating experiences and perspectives, which we describe in a separate paper (Shannon et al., 2019), is a key aspect of this research model. In addition, food bank staff were impressed by clients' resilience in the conversations facilitated through this process. The Stabilizing Lives initiative was revised as a result to enhance those capacities, including a leadership training program for pantry clients and explicit communication to local agencies that this program is about a partnership with clients that builds on their existing capacities, not a paternalistic effort to fix them.

Overall, our mixed-methods, participatory design was able to both identify multiple opportunities for the food bank and local agencies to better assist food insecure clients. Through their photos, clients showed the many ways they made do with limited resources finding healthy foods for themselves and loved ones and both giving and receiving assistance to friends and family in extended social networks. Clients suggested multiple ways they could help develop new programming at local agencies, such as starting a local garden or offering workshops on meal planning and couponing. Our process also highlighted the need for better communication between the food bank, local agencies and their clients. The use of both photo-elicitation and concept mapping was a key aspect of this process, uncovering unexpected insights and providing a framework for group conversation about topics raised through client photos. Within the U.S., rates of food insecurity have been stubbornly persistent, but by informing new program models that

actively incorporate those commonly served by charitable assistance, we hope this and future research can inform and strengthen local food assistance, family stability, and community vitality.

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